NOHSAC
National Occupational Health and Safety Advisory Committee
Komiti Tohutohu Mahi A-Motu Hauora me te Haumaru

OCCUPATIONAL HEALTH AND SAFETY IN SMALL BUSINESSES

NOHSAC TECHNICAL REPORT 12

PROFESSOR STEPHEN LEGG
DR MARTINA BATTISTI
LEIGH-ANN HARRIS
DR IAN LAIRD
ASSOCIATE PROFESSOR FELICITY LAMM
PROFESSOR CLAIRE MASSEY
DR KIRSTEN OLSEN

AUTHORS

Professor Stephen Legg
Centre for Ergonomics, Occupational Safety and Health, Massey University

Dr Martina Battisti
New Zealand Centre for Small and Medium Enterprise Research, Massey University

Leigh-Ann Harris
Centre for Ergonomics, Occupational Safety and Health, Massey University

Dr Ian Laird
Centre for Ergonomics, Occupational Safety and Health, Massey University

Associate Professor Felicity Lamm
Centre for Work and Labour Market Studies, Auckland University of Technology

Professor Claire Massey
Zealand Centre for Small and Medium Enterprise Research, Massey University

Dr Kirsten Olsen
Centre for Ergonomics, Occupational Safety and Health, Massey University

NOHSAC MEMBERS

Neil Pearce *(Chair)*
Centre for Public Health Research, Massey University

Evan Dryson
Occupational Medical Specialists Ltd, Auckland
Centre for Public Health Research, Massey University

Philippa Gander
Sleep/Wake Research Centre, Massey University

Professor John Langley
Injury Prevention Research Unit, University of Otago

NOHSAC SECRETARIAT

Mark Wagstaffe *(Project Manager)*

ACKNOWLEDGEMENT

This work was funded by NOHSAC.

NOHSAC

Telephone: (04) 915 4463 Fax: (04) 915 4329
Email: info@nohsac.govt.nz
Website: www.nohsac.govt.nz
Postal address: PO Box 3705, Wellington

ISSN 1177-2239

ISBN-13 978-0-478-33341-1

This document is available on NOHSAC's website www.nohsac.govt.nz. It can be freely quoted, copied and circulated with appropriate acknowledgement. The suggested citation is: *Occupational Health and Safety in Small Businesses. NOHSAC Technical Report 12*, Wellington, 2009.

Table of contents

List of tables **6**

List of figures **6**

Abbreviations **7**

Executive summary **8**

1. Introduction **16**

1.1 Background *16*

1.2 Objectives *17*

1.3 Methodology *17*

1.4 Report structure *20*

2. Definition and descriptive characteristics of small businesses in New Zealand **21**

2.1 Introduction *21*

2.2 A small business defined *21*

2.3 Small business contextual factors relating to OHS *23*

2.4 Role and importance of small businesses in the New Zealand economy *25*

2.5 Characteristics of workers and employment relations practices in small businesses in new Zealand *28*

2.6 Summary *30*

3. Estimate of the percentage occupational health and safety burden from small businesses in New Zealand **31**

3.1 Introduction *31*

3.2 Workplace illness, injury and fatality in New Zealand *31*

3.3 Estimating the percentage OHS burden from small businesses *32*

3.3.1. New Zealand data for estimating the relative OHS burden for small businesses 35

3.4 Summary *37*

4. Review of New Zealand occupational health and safety practice, programmes and interventions in relation to small businesses **39**

4.1 Introduction *39*

4.2 A review of the literature *39*

4.2.1 OHS practices in small businesses 39

4.2.2 OHS studies and the New Zealand small business sector 41

4.3 New Zealand OHS programmes and interventions *44*

4.3.1 Evaluations of OHS programmes and interventions for small businesses 53

4.4 Stakeholder perceptions of OHS practice and efficacy of interventions in relation to OHS in small businesses *54*

4.4.1 Common themes from stakeholder interviews 55

4.4.2 Discussion of interview findings in context of the academic literature 57

4.5 Strategic issues for New Zealand OHS practice, programmes and interventions in relation to small businesses *59*

4.6 Summary *60*

5. Case studies illustrating OHS practice in New Zealand small businesses 62

5.1 Introduction 62

5.2 Case studies 63
5.2.1 Agriculture 63
5.2.2 Boat building 65
5.2.3 Civil aviation 67
5.2.4 Fishing 69
5.2.5 Forestry 71
5.2.6 Health care 74
5.2.7 Horticulture 75
5.2.8 Residential construction 77
5.2.9 Transportation 80

5.3 Summary – key themes from the case studies 82

6. Review of international occupational health and safety practice, programmes and interventions in relation to small businesses 85

6.1 Introduction 85

6.2 Review of occupational health and safety practices in small businesses 85
6.2.1 Workplace/work environment 86
6.2.2 Hazards, risks and exposure assessment 86
6.2.3 Injuries and ill health 87
6.2.4 Small business management practice: implications for OHS 88
6.2.4 Controls and interventions 91
6.2.5 Potential influencers 92

6.3 Catalogue of international occupational health and safety programmes 95

6.4 Summary 115

7. Implications for OHS in small businesses in New Zealand 118

7.1 Importance of small businesses to the New Zealand economy 118

7.2 Characteristics of small businesses 118

7.3 Managing OHS in small businesses 119

7.4 Extent of OHS burden in small businesses 120

7.5 Small business OHS intervention programmes 121

7.6 Small business OHS intervention programmes in New Zealand 122

7.7 Limitations of New Zealand small business OHS intervention programmes 123

7.8 Success factors for OHS programmes/interventions 124

7.9 Recommendations for OHS programme design and evaluation 125

8. Strategic issues 127

9. Appendices 129

Appendix A: Acknowledgement of key informants 129

Appendix B: ACC data for small and large employer earnings, levies and costs 131

Appendix C: Stakeholders interviewed 132

Appendix D: Industry case study – commercial fishing industry 136

Appendix E: Intervention effectiveness research 143

Appendix F: Terms of reference for the international literature review 149

Appendix G: Detailed review of international occupational health and safety programmes.....151

9. References.....170

List of tables

Table 1. Profit and sales by employee count.....26
Table 2. Number of firms and employees in New Zealand 26
Table 3. Percentage of enterprises by employee count size group and ANZIC classifications at February 27
Table 4. Firms with fewer than 20 employees by legal form.....27
Table 5. Firms with fewer than 50 employees by male and female employees.....29
Table 6. Firms with fewer than 50 employees by age of employees.....29
Table 7. Number of New Zealand Department of Labour recorded fatalities.....31
Table 8. Number of New Zealand Department of Labour recorded fatalities.....32
Table 9. Costs associated with six case studies of small businesses.....33
Table 10. ACC data for 2008, as at 31 March, for number of employers and employees, wages/salaries, net standard levy and ultimate claims costs for small (including self-employed) and large employers 37
Table 11. Summary of the government OHS interventions for or relevant to New Zealand small businesses.....49
Table 12. Method of selection for case studies.....63
Table 13. Catalogue of international OHS programmes for small businesses 96
Table 14. Australian OHS small business programmes.....97
Table 15. European Union OHS small business programmes 100
Table 16. United Kingdom OHS small business programmes.....108

List of figures

Figure 1. Framework model based on Hasle and Limborg.....19
Figure 2. Comparison of New Zealand's work-related injury fatality rate with the best performing countries.....32
Figure 3. Workplace health and safety framework for action.....45
Figure 4. Model of intervention 46
Figure 5. Inter-relationships and roles in OHS compliance.....47

Abbreviations

ACC	Accident Compensation Corporation
DoL	Department of Labour
EC	Employee Count
EMA	Employers and Manufacturers Association
EU	European Union
FTE	Full-time equivalent employee
HSE	Health and Safety Executive (United Kingdom)
HSE Act	Health and Safety in Employment Act 1992
HSNO Act	Hazardous Substances and New Organisms Act 1996
ILO	International Labour Organisation
IPRC Act	Injury Prevention, Rehabilitation, and Compensation Act 2001
NIOSH	National Institute for Occupational Safety and Health (United States of America)
NOHSAC	National Occupational Health and Safety Advisory Committee
NZ	New Zealand
NZCTU	New Zealand Council of Trade Unions
OECD	Organisation for Economic Co-operation and Development
OHS	Occupational health and safety
SB	Small business
WSE	Workplace Safety Evaluation
WSDS	Workplace Safety Discount Scheme

Executive summary

Introduction

The working environment in New Zealand and most western industrial societies has undergone massive change in the past few decades following the transition to performance-based regulation of occupational health and safety (OHS) as outlined in the Robens report,[1] the implementation of which was delayed to the early to mid 1980s in most jurisdictions. In New Zealand, it is driven by the Health and Safety in Employment Act 1992 (HSE Act) and associated legislation, regulations and codes of practice. Many of the settings upon which the transition was predicated, such as large organisations and high union density, have materially eroded. The shift from the hitherto more prescriptive style of regulation of OHS in New Zealand was not completed by the time the world of OHS became much more complicated by these changes in the workplace. The implication under this performance-based (self-regulatory) legislation is that businesses are expected to manage the risks that arise out of their business activity via internal risk management systems in order to create and maintain a safe and healthy work environment.

Importance of small businesses to the New Zealand economy

Over the last 30 years, small businesses have received growing recognition as a valid form of economic activity in all parts of the world – with the potential to contribute to economic prosperity as well as social development. These contribute both to the overall economy in a number of measurable ways (employment and gross domestic product) as well as through providing services to the local and regional communities where they are based. In recent decades, more attention has been directed at understanding the reasons for the existence of small firms – and understanding how they differ from large firms. Small businesses are not simply infantile large firms – they have a distinct and separate role to play in an economy.

Like most other modern economies, New Zealand is predominantly a nation of small businesses. About 97 percent of all businesses in New Zealand are small businesses (i.e. those that employ 20 or fewer people), whilst 89 percent employ five or fewer people and 68 percent have no employees (i.e. they are run by a single owner-manager or by one or more working proprietors). Small businesses contribute to employment in a significant way, particularly in small towns or rural locations. They account for 32 percent of total employment in New Zealand and have a share of about 33 percent of total national sales and income.

Characteristics of small businesses

There are a number of identifiable stages related to size in the development of a business, where management practices change from sole owner-managership, to beginning to employ staff, to chiefly employing friends and/or family, and then to a size where the 'span of control' is too large for the owner-manager and where a degree of formality becomes necessary, increasingly as the business becomes larger. These stages of growth demand different management practices. Management in small businesses differs from management in large organisations in that the lines of communication are shorter, the structure is simpler and commercial pressures are often felt more keenly and immediately.

In general, small businesses are characterised by management by the owner in a personalised (non-formal) manner, being independent (i.e. not a subsidiary of a larger company), having a limited market share, having high resource constraints, operating under extreme financial pressure (with high start-up costs and within tight profit margins) and having a high potential for failure (i.e. they may have a short lifecycle). They have limited access to external sources of advice and support (and, hence, are reliant on trusted relationships) and to business information/expertise. They also generally lack formal documentation (for OHS in particular) but have a high level of personal subject-specific technical knowledge and expertise. The management style suffers from lack of acumen, experience and training and tends to involve predominantly oral communication. They are generally at a relative disadvantage due to economies of scale, are relatively isolated and geographically scattered.

Small businesses commonly employ (unpaid and trusted) family/friends or seasonal, casual, mobile or part-time (migrant, female or youth and poorly skilled) non-unionised workers, often on individual contracts. They often suffer from skill shortages. Staff wages are often low (or sometimes zero in the case of family). Jobs are less secure. Working conditions are often poorer than in larger businesses, although job satisfaction and the psychosocial working environment may often be better.

Managing OHS in small businesses

Recent international research in small businesses suggests that relatively poor OHS management and outcomes in comparison to larger businesses could be attributed to characteristics typical of small businesses. Some of the characteristics of small businesses make it more difficult for them to create and maintain a safe and healthy work environment. Those working in small businesses in New Zealand and overseas are generally more frequently exposed to hazardous situations and suffer more work-related injuries and illnesses than those working in larger businesses. The magnitude of exposure to OHS risks amongst the small business workforce in New Zealand is unknown but is likely to be high and greater than that in larger enterprises.

It is impossible to separate OHS practices from other aspects of running a small business. The main characteristics of OHS management systems in small businesses are the use of oral and not written communications, dependency on suppliers for information, limited knowledge of OHS Acts, regulations and codes of practice, a tendency to place OHS and injury responsibility with workers, a belief that the chemicals being worked with are not dangerous, poor knowledge of health effects, better perception of acute rather than long-term health effects, hazard controls decided by custom and practice and not by risk assessment, and economic survival being paramount. Small business owners work very long hours and devote time to the most pressing issues. There is less time and energy for ‘non-core’ tasks, which OHS is often perceived to be.

Key factors affecting OHS in many small businesses may include their low level of management and training skills, a lack of resources, the burden of compliance with regulations and codes and so on, poor relationships with regulatory agencies, the cost of using OHS consultants, their dependency on large businesses and difficulties in employment and implementing and understanding good OHS practices. The relevance of participation of employees in OHS management practices in small businesses is not well understood.

Nine New Zealand case studies described in this report provide a useful corroborative description of many of the issues identified above (and in the international and New Zealand review sections of the report) and of practical issues faced by small businesses in managing OHS. In general, the owner-managers did not know much about OHS legislation. They found it difficult to integrate formal OHS management systems into their business practices. Their background, particularly their education and work experience, affected their capacity to develop OHS management systems. Those with a high level of knowledge about OHS management systems understood the benefits and were better able to manage OHS in practice and tended to more commonly adopt a preventive approach. Sometimes, this was encouraged by external pressures, such as from customers, so that OHS management systems were put in place, but this did not always translate to their actual use. Thus, OHS was mainly managed and communicated orally or with the use of simple and accessible tools, for example, an onsite whiteboard as a hazard register on a construction site. Otherwise, hazard management was mainly reactive; that is, controls were commonly put in place after an accident or incident. The cause of an injury or accident was mostly considered to be a personal failure by the victim. The control of hazards was mainly focused on behaviour change and the use of personal protective equipment, with safety systems reliant largely on participative trust between the owner and employee and decided by customary practice rather than by risk assessments.

The main drivers for the implementation of OHS management systems in the nine cases examined in the present report were demands from customers and clients, the owner-manager's prior experience with OHS (particularly if they considered it as cost-effective) and a desire to avoid receiving improvement notices from the Department of Labour inspectors. The main factors influencing the adoption of 'good' OHS practices were from large customers (which acted as an economic incentive, as it could influence whether or not they got a contract), industry certification schemes, their peers and family, and their own prior experience. The main barriers to preventing adoption of good practice were tight financial margins, high investment costs, conflict with production work and a lack of reliable employees. Most of the owner-managers knew about Accident Compensation Corporation's Workplace Safety Discount Scheme, but there was little incentive to participate as it was perceived as being too time-consuming and any savings marginal at best.

Extent of OHS burden in small businesses

In general, the number of work-related injuries, fatalities and illnesses in New Zealand is high compared to other Organisation for Economic Co-operation and Development countries. For example, similar jurisdictions, such as Victoria and Queensland, have half the number of occupational fatalities compared to New Zealand. However, there is growing evidence that those working in small businesses are more frequently exposed to hazardous situations and suffer more work-related injuries and illnesses than those working in large businesses. As New Zealand government OHS statistics are not analysed by size of firm, and different institutions use different classifications in compiling their descriptive statistics, it is difficult to make conclusive statements about the levels of injury and illness in small businesses. There is probably a high level of under-reporting for small businesses. In addition, there is a focus on injury and fatality, with less emphasis on ill health and diseases, for which data for small businesses are lacking. There is a need for a consistent and efficient way of gathering data for small businesses. A unified clear definition of small business size would help in this regard.

The relative national economic burden of OHS for small businesses in New Zealand is unknown. Moreover, it is very difficult to determine because of a lack of suitable data. The average cost per case of six illustrative small business cases in a report by the Department of Labour was $66,449. An estimate of the relative economic burden for small businesses may be derived by calculating the fraction of the overall economic cost estimates previously reported by Pezzullo and Crook[2] ($20.9 billion) as a percentage of the total number of employees in small businesses with an employee count of 20 or less (32 percent). This would give a very crude estimate of the relative economic burden for small businesses in New Zealand of $6.7 billion. Government agencies do not routinely collect data on the number of people in a business, but Accident Compensation Corporation estimates business size from liable earnings and estimated employee count (based on total company wages and salaries divided by the average annual wage rate). Using this approach, ACC data for 2008 suggest that small businesses account for about 50 percent of their levies ($3.3 billion per annum) and ultimate claim costs ($2.6 billion per annum). Application of this relative burden (50.3 percent) to the full economic cost burden estimated by Pezzullo and Crook[2] would provide an estimated relative economic burden for small businesses of $10.5 billion per annum. In view of the lack of suitable data in New Zealand, this is our current 'best estimate' of the economic burden on OHS in small businesses. In order to be able to better calculate the relative economic burden attributable to small businesses, Accident Compensation Corporation should develop a mechanism to identify small businesses based on employee count/number of full-time equivalent staff.

Small business OHS intervention programmes

OHS interventions may be active or passive. Active interventions typically require an individual to be 'persuaded' to refrain from unhealthy or unsafe actions. Passive interventions are generally regarded as ones that require no individual action from the potential victim but instead focus on implementing environmental modifications, for example, ensuring that all hazardous machinery has suitable guards. Passive interventions are more effective than active ones. Safety interventions that involve different aspects and levels of the organisation, such as production and planning, and key employees, are likely to be more effective.

Although local, national and international agencies have been established to promote the establishment and development of small businesses, adequate and effective OHS resources and support for small businesses have not generally been provided. A recurring theme in the literature seems to be the identification of problems and challenges faced by employers, employees, enforcement agencies and researchers in relation to controls and interventions. There is a general consensus that the OHS intervention models developed for larger companies are ineffective with small businesses and that difficulty contacting smaller firms, their geographical dispersal and their short life spans have all helped ensure that they have been left more or less to their own devices. However, attempts to address these issues have been made by the design and development of relatively simple low-cost solutions to control exposures, particularly in relation to chemical exposures.

A variety of models and preventive approaches have been developed at the international and national levels for use with small enterprises, the most common being the use of different types of checklists, implementation of OHS management systems and other preventive programmes. It has been suggested that the most successful methods appear to be action-oriented low-cost approaches, combining health and safety with other management goals, that are based on trust and dialogue. Other approaches include training and educational

interventions, engineering and industrial hygiene interventions, and a combination of industrial hygiene, health promotion and behavioural interventions. A very recent evidence-based review has provided moderately strong evidence that participative ergonomics interventions can reduce musculoskeletal symptoms, injuries, workers' compensation claims and lost days from work or sickness absence.

Small businesses are influenced by a range of stakeholders in both their internal and external environments. Key stakeholder groups that influence OHS management in small businesses include customer initiatives, enforcement agencies, health and safety professionals, insurance companies, key sector approaches, suppliers, trade associations and vocational training. Factors that encourage small business stakeholders to address OHS improvements via intervention programmes include recruitment and retention of good (experienced/skilled) staff, a diversified and older workforce, the need to respond to changes in the marketplace, and committed and competent top management who ensure that quality and OHS standards are continually improved.

In 2005, the New Zealand Labour Government recognised small businesses as a national priority in strategic health and safety efforts in the *Workplace Health and Safety Strategy for New Zealand to 2015*,[3] indicating that it is an area to which the government wished to direct considerable resources. It included a strategic framework to direct the activities of stakeholders, including central and local government, industry organisations, unions and employers. However, there appears to be no nationally co-ordinated approach to the development of OHS interventions for small businesses in New Zealand.

Although the present report provides a catalogue of most of the governmental OHS intervention programmes/schemes aimed at small businesses in New Zealand (see Table 11), the evidence base for rationales for their development and maintenance are largely unclear. The main driver for Accident Compensation Corporation-initiated programmes is generally based on claims data. However, the other main catalysts for their introduction seem to be either public and/or political pressure (for example, submissions in response to government select committee hearings) or as a result of trends perceived to be socially unacceptable (for example, a rise in a particular chemical-induced illness associated with a small business-dominated industry). This is consonant with the typical catalysts and drivers that spur employers to introduce and maintain OHS improvements, identified as the consequences of traumatic incidents, a significant business juncture, management's desire to change and improve, often for financial reasons, and competition and the lack of economies of scale.

Limitations of New Zealand small business OHS intervention programmes

Developing and implementing OHS interventions for heterogeneous and geographically scattered small businesses in New Zealand is difficult for a number of reasons. Small businesses are often hard to reach and not easily motivated if the intervention has few extrinsic benefits. Small businesses often have limited internal and external communication mechanisms as a result of poor management and a low level of participation in business and trade associations. It is rare for most New Zealand small businesses to have regular contact with an inspector from the Department of Labour. Proactive visits to all workplaces by the Department of Labour's health and safety inspectors have decreased from 26,405 in 1994/95[4] to less than 5,000 currently.[5]

Overall, there are generally a number of difficulties associated with previous attempts to determine whether or not specific OHS programmes or interventions designed for small

businesses in New Zealand have been successful. There has been a dearth of rigorous objective independent evaluations, bias including vested interest in the success of the OHS intervention or programme and limited public release of studies. Most of the New Zealand OHS programmes and interventions have been designed around industry-specific workplace hazards, and thus the focus of the resultant evaluation has been on the success or failure of injury and illness reduction rather than the uptake of the initiative by the small business community. Most of the published data for small businesses in New Zealand deals with injury rather than health hazard exposures. Injury data that could provide some indication of the merits of an OHS initiative are either out of date, inconsistent or inappropriate.

Recommendations for success factors for OHS programmes/interventions

It is difficult to reach small businesses and even more difficult to get them to act. It is recommended that, for an OHS programme/intervention to be successful for small businesses, it should:

- focus on a particular sector or risk
- be uncomplicated
- offer support free of charge or at a low cost
- combine health and safety with other management goals
- help to create an OHS prevention culture
- combine active interventions with practical documentation and tools
- be action-oriented
- be based on trust and dialogue
- include co-operation, collaboration and harmonisation between industry organisations, the business sector, government agencies and the intermediary role played by OHS advisors and other intermediary actors
- have the active involvement of different partners (employers, employer associations, workers, trade unions) in its planning and implementation
- measure its adequacy by assessing the needs before the action and by carrying out a systematic evaluation of its effects afterwards.

Based on the stakeholder interviews and case studies in the present report, it is recommended that, for OHS interventions/programmes/initiatives to be successful in New Zealand small businesses, the following important factors should be considered:

- Grassroots/community commitment could be fostered by government agencies, industry associations, a collaborative approach or by involving employers and employees as well as other interested parties, such as family members.
- The use of mentors could involve engaging respected industry stalwarts who have both industry experience and knowledge, and commitment to health and safety. Mentors would best be used alongside both employers and employees.
- Unless there is a succession plan to replace key people, it is likely that any OHS initiative will stall.
- There should be a focus on the supply chain involving the suppliers and customers.

In more general terms, it is also recommended that the strategic principles identified by Eakin et al.[6] (and reproduced in section 7.9 of the present report) should be included in the development of OHS intervention programmes for small businesses in New Zealand.

Strategic issues

The strategic issues identified in this report are as follows:

Lack of data on OHS in small businesses

There is currently a lack of reliable OHS data about New Zealand small businesses. This is partly due to a lack of a unified definition of a small business, difficulty with identifying and contacting small businesses and in obtaining data on injury and occupational disease, and limited co-ordination between agencies. The crude financial estimates of the burden of injury and disease attributed to small businesses in the present report appear to be very significant. However, the data upon which this is based are primarily related to fatal and non-fatal injuries and likely underestimate the extent of the burden. Thus, the overall burden of occupational disease attributable to hazardous exposures in small businesses is unknown.

A coherent national policy on OHS in small businesses

Small businesses have been identified as a national priority in the *Workplace Health and Safety Strategy for New Zealand to 2015*.[3] The need for a coherent national policy on occupational health and safety has been recognised by New Zealand's recent ratification of the International Labour Organisation Convention 155 on occupational health and safety and the working environment. The convention signals New Zealand's commitment to the ongoing promotion of improved health and safety in workplaces, including small businesses. However, to date, there is little reported evidence of the progress achieved in relation to OHS and small businesses in New Zealand. The outcomes in relation to achieving the strategy for small businesses reported in the *Workplace Health and Safety Strategy for New Zealand to 2015: Snapshot of progress 2006/2007*[7] appear to be ad hoc and not linked to any overarching strategy. Thus, there is a need for an integrated cohesive approach between government agencies, including the Department of Labour, Accident Compensation Corporation and Ministry of Economic Development, to improving OHS management in small businesses. Co-operation with stakeholders, such as industry organisations and other influencers in the small business environment, particularly the community, suppliers and customers, is also essential.

Support for OHS in small businesses

The Robens philosophy, upon which the New Zealand legislative framework for OHS is based, requires government agencies administering the framework to provide support and assistance to businesses, particularly small businesses. There is little evidence that small businesses are supported in this way. In addition, this also questions the efficacy of the performance-based framework of the current OHS legislation. Although a commonly used strategy, it is unclear if and to what extent the economic model of motivation for small businesses (for example, the Workplace Safety Discount Scheme) is effective. This issue needs greater consideration in relation to determining the strategies that are best suited to improving working conditions in small businesses.

Addressing the changing nature of employment in small businesses

Government agencies need to take into account the changing nature of work, in planning and delivering services to small businesses. This involves consideration of precarious and informal employment and other forms of contract work. Vulnerable workers (such as casualised labour, older workers, new migrants, people with low literacy – many of whom are employed in small businesses) require special attention and protection in terms of their health

and safety. A major challenge for OHS in small businesses is how to reconcile contradictory demands: the need for ongoing, individualised, personalised (and time-consuming) service to a large and dispersed sector of the workforce, with limited resources. Consideration should be given to using non-OHS professionals or intermediaries in the supply chain to deliver OHS advice and information to small businesses. A core strategic device in the provision and management of limited OHS resources to small businesses is that of 'partnership' in the form of joint funding schemes or 'piggy-backing' OHS interventions onto existing distribution or communication systems. There is a need to enhance and broaden the expertise in key relevant discipline areas relating to OHS management in small businesses, intervention effectiveness and evaluation research in government departments.

Research priorities

Research priorities on OHS practice for small businesses in New Zealand include gaining an understanding of how small businesses manage OHS, the extent and importance of employer/employee participation and of psychosocial issues. Specific studies that could be useful are the determination of why some small businesses have more proactive OHS management than others and how actors in the supply chain can contribute to improving and influencing how small businesses manage OHS, as well as how government agencies can initiate and facilitate this process. This could include a targeted industry case study of the implementation of known success factors for improving OHS management in small businesses.

1. Introduction

1.1 Background

The working environment in New Zealand has undergone massive change in the past few decades, in keeping with the experiences of most western industrial societies. These changes have occurred relatively shortly after the transition to performance-based regulation of occupational health and safety (OHS) as outlined in the Robens report,[1] the implementation of which was delayed to the early to mid 1980s in most jurisdictions. Many of the settings upon which the transition was predicated, such as large organisations and high union density, have materially eroded. The shift from the hitherto more prescriptive style of regulation of OHS in New Zealand was not completed by the time the world of OHS became much more complicated by these changes in the workplace.[8]

Occupational health and safety in New Zealand is driven by the Health and Safety in Employment Act 1992 (HSE Act) and associated legislation, regulations and codes of practice. The implication under this performance-based (self-regulatory) legislation is that businesses are expected to manage the risks that arise out of their business activity via internal risk management systems in order to create and maintain a safe and healthy work environment.[9]

New Zealand and international literature suggest the physical (though not necessarily the psychosocial[10]) work environment in small businesses employing fewer than 20 staff is worse than in large businesses and implies that some of the characteristics of small businesses make it more difficult for them to create and maintain a safe and healthy work environment. There is growing evidence that those working in small businesses in New Zealand and overseas are more frequently exposed to dangerous situations and suffer more work-related injuries and illnesses than those working in larger businesses.[11–21]

The magnitude of exposure to OHS risks amongst the small business workforce is unknown but is likely to be high and greater than that in larger enterprises. For example, Sorensen et al.[10] suggest that the workplace, physical and chemical work environment in small businesses is particularly poor compared to larger organisations.

Recent international research in small businesses suggests that relatively poor OHS management and outcomes in comparison to larger businesses could be attributed to characteristics typical of small businesses. Small businesses are less likely to have formalised management structures, an evolved or structured approach to OHS management, internal health and safety expertise or access to external sources of assistance.[22–27] These issues are further exacerbated in that small businesses are difficult to regulate due to their heterogeneous nature, geographical dispersion, lack of cohesive representation and relatively short life spans.[6,28–31]

This is of great concern and warrants consideration because small businesses commonly comprise a high proportion of national enterprises and employ a relatively large fraction of the workforce. This is especially true in New Zealand, where 97 percent of all enterprises employing fewer that 20 people account for 32 percent of all employees.[32] Occupational health and safety in the context of the small business is therefore an important issue for New

Zealand to address. It is therefore appropriate that that the National Occupational Health and Safety Advisory Committee (NOHSAC), responsible for providing independent advice to the Minister of Labour on OHS issues, commissioned an examination of the issues around OHS practices amongst small businesses and the efficacy of programmes designed to improve practice.

1.2 Objectives

The overall objective of this technical report is to identify the strategic issues associated with efforts to improve occupational health and safety practices in small businesses in New Zealand. To address this, the research team, in consultation with NOHSAC, agreed to focus on a number of objectives to highlight knowledge gaps as well as what is known about health and safety practices and programmes in relation to small businesses in New Zealand and internationally.

The specific objectives were to:

- describe the role and importance of small businesses in the New Zealand economy, particularly the characteristics of small businesses – as well as the people that are typically employed in such entities – by industry, occupation, age, gender, ethnicity and hours of work
- estimate the percentage of overall occupational health and safety burden generated by small businesses in New Zealand
- review New Zealand's occupational health and safety practice and programmes for small businesses, including business owners' perceptions of occupational health and safety issues and their responses, identification of barriers to occupational health and safety practice, and assessment of the efficacy of the OHS programmes, including analysis of advice provided, implementation plans, budgets and any evaluations
- present individual case studies of occupational health and safety practice in small businesses in nine industry sectors – agriculture, boat building, civil aviation, fishing, forestry, health care, horticulture, residential construction and transport – to highlight the drivers that encourage businesses to attend to OHS, how health and safety is integrated into daily business activity and managed, and the effect that occupational disease and injury may have caused
- review international occupational health and safety practice and programmes in relation to small businesses with a particular focus on the efficacy of prevention programmes and advice provided by relevant agencies, including implementation plans, evaluations and budgets.

1.3 Methodology

This technical report was prepared for NOHSAC during 2008 by a team of researchers from a number of New Zealand university research centres with expertise in occupational health and safety and small businesses. The researchers consisted of a group from Massey University – Professor Stephen Legg, Dr Ian Laird, Dr Kirsten Olsen and Leigh-Ann Harris from the Centre for Ergonomics, Occupational Safety and Health; and Professor Claire Massey and Dr Martina Battisti from the New Zealand Centre for Small and Medium Enterprise Research – and Associate Professor Felicity Lamm from the Centre for Work and Labour Market Studies, Auckland University of Technology.

The overall methodological approach adopted was to draw on the expertise of the project team to address each of the objectives within budgetary constraints. A single leader was appointed to address each of the outlined objectives, which are addressed in separate sections of this report. This technical report therefore represents a collection of quasi-independent perspectives on small business occupational health and safety practice and programmes that are consolidated in the final section by a drawing together of the common themes. The methodologies used to address each of the objectives are outlined below.

The methodology for each objective was as follows:

- The information on small businesses' role and importance to the New Zealand economy and characteristics were based on analysis of existing data held by the New Zealand Centre for Small and Medium Enterprise Research and publicly available data, chiefly provided by Statistics New Zealand. This section of the report was led by Professor Claire Massey.
- The percentage of overall occupational health and safety burden from small businesses was initially crudely estimated as proportional fractions of the national burden previously reported, based on the fraction of small businesses in relation to the total number of New Zealand businesses and the fraction of small businesses in relation to the total number of workers in New Zealand. An estimate was also made using data from a Department of Labour report on the social and economic consequences of workplace injuries and illness. Advice from the Accident Compensation Corporation (ACC), the Department of Labour, Statistics New Zealand and WorkCover (Victoria, Australia) was also sought in an attempt to determine if the crude estimates could be refined. This section of the report was led by Professor Stephen Legg.
- The review of New Zealand's occupational health and safety practice and programmes for small businesses was undertaken by an evaluation of academic literature published in international and New Zealand journals, government-commissioned reports and via interviews with key industry stakeholders from government agencies, industry organisations and interest groups. This section of the report was led by Associate Professor Felicity Lamm.
- The case studies of occupational health and safety practice were undertaken by semi-structured interview with the owner-managers of small businesses in each of the nine different industries. The information gathered was determined and interpreted using a framework model (shown in Figure 1, after Hasle and Limborg[20]) to provide illustrative examples of key issues for small businesses in relation to OHS in New Zealand. This section of the report was led by Dr Kirsten Olsen.
- The review of international occupational health and safety practice and programmes for small businesses was conducted by reviewing academic literature published in the scientific literature, review of selected international government reports and consultation with the international peer review panel. This section of the report was led by Dr Ian Laird.

The authors wish to acknowledge the contribution of many key informants, who assisted and provided information in various ways and who are identified in Appendix A.

Overall, the objectives of the report were approached with guidance from a framework model, based on that of Hasle and Limborg[20] (see Figure 1). The model illustrates the process of intervention, which should result in improved OHS 'effects'. Figure 1 shows three kinds of organisations or actors in the intervention process: the governmental authorities (for example, Department of Labour), the intermediaries (for example, OHS consultants, industry

associations, training organisations) and the small enterprise/business. To improve OHS, government authorities develop requirements [1] from OHS management to the specific control of hazards. These requirements need to be implemented in the small business. The model emphasises the processes to achieve this goal. To reach the small business, it is necessary to use intermediaries, and it is important that particular interventions become embedded in the intermediaries' service to the small businesses [2]. Furthermore, it is important that the process used to interact and communicate the intervention to the small business [3] works. Finally, it is important that the intervention (for example, hazard management tool, grade of equipment or personal protective equipment) has the desired effect [5] and becomes embedded [6] in the business; that is, it continues to be used in the long term. This should be supplemented by review and evaluation.

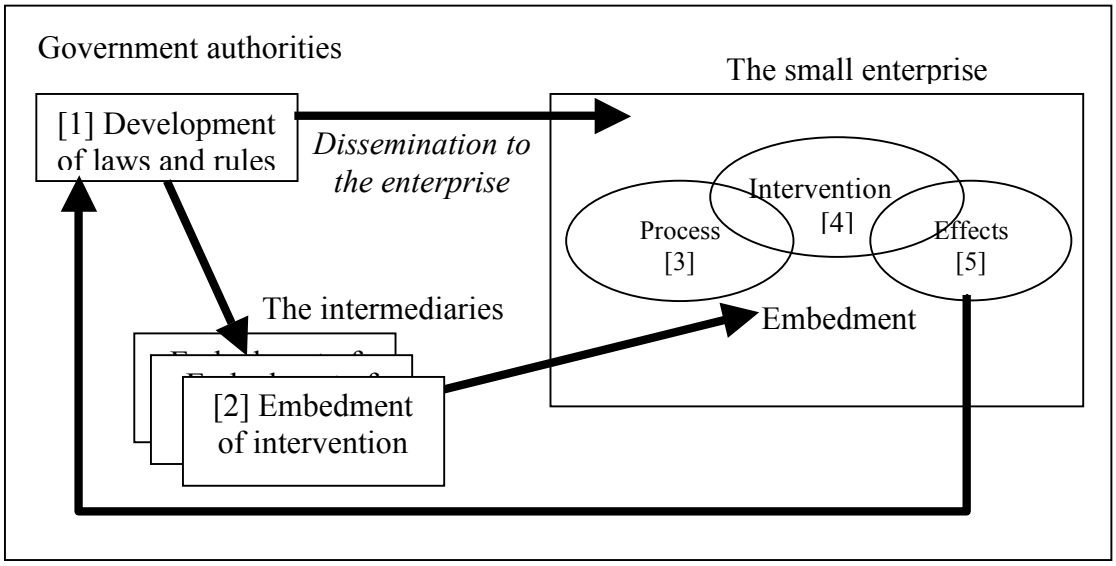


Figure 1. Framework model based on Hasle and Limborg

Quality assurance of the work was provided by the use of various data sources and peer review. Data for the various parts of the project were obtained and triangulated from different sources, including interviews, observation and secondary sources. This helped to ensure construct validity. Further quality assurance was provided through cross-project team member triangulation and assessment of the work conducted by an international peer review panel.

The international peer review panel consisted of a number of experts in the fields of OHS and small businesses, including: Professor David Walters, Director of the Centre for the Work Environment, Cardiff University, United Kingdom; Dr Peter Hasle, Director of DAVID, Centre for Research in Production, Management, and Work Environment in Small Enterprises, National Research Centre for the Working Environment, Copenhagen, Denmark; Dr Ann-Beth Antonsson, Swedish Environmental Research Institute, Stockholm, Sweden; Associate Professor Melissa Perry, Harvard School of Public Health, Boston, USA; Professor Joan Eakin, Toronto University, Canada; Professor Michael Quinlan, School of Organisation and Management, University of New South Wales, Australia; and Associate Professor Dino Pisaniello, School for Public Health, Adelaide University, Australia.

The project was conducted in accordance with procedures approved by the Massey University Human Ethics Committee and in accordance with the Massey University policy on cultural issues, equity and its obligations under the Treaty of Waitangi. The project team had no

conflicts of interest in undertaking this project. The Human Ethics Committee require that the following statement be included in any public document:

> This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researchers named above are responsible for the ethical conduct of this research. If anyone has any concerns about the conduct of this research that they wish to raise with someone other than the researchers, please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Research Ethics), telephone: 06 350 5249, email: humanethics@massey.ac.nz.

1.4 Report structure

The report is structured in sections according to each of the objectives outlined in Section 1.2 above.

- Section 1 provides the background, objectives and methodology used to generate this technical report.
- Section 2 provides a definition of a small business. It describes the characteristics of small businesses and contextual factors relating to OHS practices. It outlines the role and importance of small businesses to the New Zealand economy and describes the characteristics of the workers typically employed in small businesses in New Zealand and related employment practices.
- Section 3 starts by providing data on workplace illness, injury and fatality in New Zealand and then attempts to provide an 'estimation' of the percentage of overall occupational health and safety burden generated by small businesses in New Zealand and considers the difficulties associated with determining this.
- Section 4 presents a review of New Zealand's occupational health and safety practice and the efficacy of programmes for small businesses, ending with a summation of key issues.
- Section 5 presents nine illustrative case studies of occupational health and safety practice in small New Zealand businesses, ending with a collation of key points.
- Section 6 presents a review of international occupational small business health and safety practices and programmes, ending with a summation of key issues.
- Section 7 summarises the key issues from the different perspectives presented in each of the previous sections by identifying common themes and their implications for strategic activities associated with efforts to improve occupational health and safety practices in small businesses in New Zealand.
- Section 8 identifies strategic issues.

2. Definition and descriptive characteristics of small businesses in New Zealand

2.1 Introduction

This section provides a definition of a small business. It describes the characteristics of small businesses and contextual factors relating to OHS practices. It outlines the role and importance of small businesses to the New Zealand economy and describes the characteristics of the workers typically employed in small businesses in New Zealand and related employment practices.

2.2 A small business defined

This report is primarily concerned with small businesses, but the terms 'small firms' and 'small enterprises' are used synonymously in various parts of the report for variety. This section of the report defines what is meant by a small business.

Currently, there is no universally accepted definition of a small business, although some countries have adopted definitions (which can even be enshrined in legislation) that assist them to quantify the size of the small firm sector. This lack of consensus arises for a number of reasons. Small firms can be found across almost the entire spectrum of business activity so cannot be defined by industry sector, such as manufacturing, retail or service, nor can they be differentiated by legal format, such as sole trader, partnership or company, as they can adopt any of these structures. However, as noted in the landmark and seminal work of the Great Britain Committee of Inquiry on Small Firms,[33] there is one distinguishing characteristic: small firms are usually managed by the owners. Thus, the concept of 'owner-management' forms the core of most definitions of a small business. An associated concept is that, in a firm that is owner-managed, there is little potential for specialist advice – the owner(s) provide most of the expertise in all areas, not just the operational areas. The exception to both of these notions (i.e. the concept of owner-management and the lack of specialist advice) is where the small business is, in fact, a franchise. In this case (and it is an increasingly common form of business in New Zealand and internationally), the owner-manager may have access to expert advice and/or systems that may include guidance about management practices in general and on health and safety in particular.

The challenge of this loose definition is that it is difficult to identify which firms are owner-managed. An alternative approach – using the level of sales or turnover as a measure of firm size – is also problematic because of the need to adjust the figure over time and the challenge of adopting levels that are meaningful internationally.

The result is that, in most countries, a highly pragmatic approach to defining a small firm has been taken, based on the number of people employed within the firm, usually in terms of the total number of full-time equivalent staff (FTEs). For example, in Australia, a small firm is one that employs fewer than 20 FTEs.[34] However, there is currently no official definition of a small business in New Zealand, although, formerly, the legislation governing the New Zealand Small Business Agency (SBA) explicitly defined a small firm as one that employs fewer than 50 FTEs in the manufacturing sector, fewer than 25 people in the wholesale and retail sector and fewer than 10 people in the service sector. However, this definition fell into disuse with the closure of the New Zealand SBA in 1987. After this, there was no need for a definition of small firms, as successive governments failed to establish any specific policies for the small firm sector.

This situation changed in the late 1990s when those interested in small firms internationally coined the term 'small and medium enterprises' and the acronym SME entered common parlance. The term SME also became common in New Zealand – sometimes used (incorrectly) as a synonym for 'small business' – and in 1999, the Ministry of Economic Development released the first edition of a report, *SMEs in New Zealand: Structure and dynamics*,[32] that is now published annually and is drawn from the data collected annually by Statistics New Zealand. In this report, the Ministry uses the term 'SME' and defines it as one that employs 20 or fewer employees.[i] The report also refers to 'small enterprises' (defined as those employing five or fewer employees – though, according to Massey,[35] a micro enterprise employs fewer than 5 FTEs) and medium enterprises (those employing 6–19 FTEs). There is no rationale for the cut-off points in these categories. They have not been consistently applied, even within the Ministry, and they are significantly different to those in use in other similar countries with analogous business populations – most significantly Australia, which does have a formal definition of a small business.

Defining a small business according to the number of staff employed is considered the best proxy for the differences that occur in the way firms of different sizes operate.[35] This is because of the substantial literature (for example, Knuckey et al.[36]) that indicates that size is related to the formality of the way in which a firm is managed. For example, once an organisation employs more than 20 staff, many researchers have observed that it begins to operate under a more formalised management structure as opposed to the informal owner-management that is typical of smaller businesses.[37,38]

This situation is particularly pertinent to the way OHS is managed in small businesses. If the management structure in a business with over 20 employees becomes more formalised, this will permeate all the different areas of a firm's practice – the way in which the firm deals with its operations, its staff and its customers – and this will include the management of occupational safety and health.[23,25]

The literature that relates specifically to this specialised area of management practices indicates that businesses employing fewer than 20 staff:

- are less likely to access external sources of advice and support for health and safety matters[25]
- are less likely to provide health and safety information or expertise[22]
- are unlikely to have access to internal health and safety expertise[27]
- have significantly lower levels of documentation and knowledge about hazardous chemicals[24]
- are less likely to substitute hazardous chemicals in comparison with larger businesses[24]
- have a higher proportion of employees exposed to hazardous chemicals weekly or monthly than larger companies. [21]

In summary, there is currently no formal definition of a small business in New Zealand. However, a number of commentators observe that there are a number of identifiable cut-off

[i] While once New Zealand used FTEs as the basis for this publication, since 2003, employment within firms has been based an employee count (EC) as opposed to an FTE count. The EC is a head count of salary and wage earners and is primarily sourced from taxation data – the IRD's employer monthly schedule (EMS) that is completed monthly by employers. In contrast, the FTE measure covers paid employees and includes working proprietors who do not pay themselves a salary or wage.

points in the size of a firm – where management practices change – which may also parallel the firm's development and progression through a series of stages of maturity. The first of these is when the firm begins to employ staff. The second is when the size of the firm moves beyond the point where the staff is made up chiefly of friends and/or family and may be described as 'small' rather than 'micro' in size. A third point is when the firm grows to a size where the 'span of control' is too large for the owner-manager and where a degree of formality becomes necessary. This occurs at any point beyond 10–12 staff. On the basis of this last factor, the authors of this report have focused on businesses that employ fewer than 20 staff (i.e. that have an employee count (EC) of <20) and are owner-managed.

2.3 Small business contextual factors relating to OHS

Most of the published literature on OHS relates to large organisations. This is understandable, as it is these firms that have traditionally been the most obvious target of agencies wishing to improve the level of health and safety in the workplace. However, the way OHS is implemented in large firms is generally different for small firms because there are significant structural differences between small and large organisations that will have an impact on the design and implementation of OHS practices.

Despite the recognition of the differences between small and large firms, there is a dearth of research in small firm contexts. As a consequence, much of the published research in the broad area of 'organisational studies' continues to rely on observations of what occurs within large firms. The findings, in effect, provide a benchmark (the large firms) against which the small firm is compared. The result is that small firm practices (in a whole series of areas) have generally been assessed as being informal, short-term and non-strategic (as compared to large firm practices, which are seen as formal, long-term and strategic).[39] Looking at small firms in this way implies that small firms are merely immature large firms; they will 'grow out' of the small firm mode of operating when they become more established.

However, this is not the case; all small firms will not necessarily grow into large firms. Some will not be able to (because of the lack of skills of the owner-manager or unforeseen changes in the marketplace) while others will not wish to. This is important when viewing small firms from the perspective of what constitutes best practice overall: small firms need to be considered on their own terms if we are to improve our understanding of how best to influence their owners in making their employees safer. In the context of this discussion, it is important to note that there are a number of characteristics of the small firm that influence how well good OHS practices are implemented. The first three of these characteristics were noted in the seminal piece of work on this area[33] and developed by other key writers in the area (for example, Storey[29]). The characteristics are identified below as seven factors:

Factor 1: The influence of the small firm owner-manager

As already noted, small firms are usually managed by the owners, whereas in larger businesses, shareholding and management are generally separated. This means that the business is managed in a personalised way, not through a formal, specialised management structure. It also means that it is common for one or two people to make all the critical decisions without the aid of internal specialists in such areas as marketing, production, accounting, finance or human resources. The implication is that the owner will have knowledge in one or two areas only of the functional areas that are required for running the firm (for example, production) and may not be able to implement good OHS practices without outside help.

Factor 2: The independence of the small firm
The small business is independent, in the sense that it is not a subsidiary of a larger enterprise and the owner is free of outside control in making decisions. The exceptions to this rule are those firms that operate as franchises. The implication is that there are generally limited opportunities for practices developed elsewhere to be introduced to the firm, as would commonly be the case in the branch of a corporate operation.

Factor 3: The small firm and its limited market share
The small business has a relatively small market share, serving a local or regional – rather than national – market. The exception is firms that take advantage of technology and the increasing ease of accessing global markets, but even in this case, the market share is likely to be small, relative to the entire market within the industry. The implication is that the firm (and its owner or manager) may not be exposed to large firm practices in the way that a larger firm would be and may not be required to adopt formalised practices by a large client.

Factor 4: The small firm and its limited resource base
Underpinning many of the differences between large and small firms is the generalisation that large firms tend to have more resources – both in financial terms and in respect of the expertise and knowledge embedded in their staff. While noted by the Great Britain Inquiry,[33] the notion of 'resource constraints' is usually attributed to Jay Barney.[40] In relation to adopting good OHS practice, the presence of greater resources can provide large firms with greater opportunities to implement appropriate policies and practices.

Factor 5: The small firm and failure
There is a perception that the failure rate for small firms is high – which owes much to a well-known piece of research undertaken in the US in the late 1980s.[41] Despite the more recent studies that demonstrate that this is not entirely true, it is clear that there is a high 'turbulence' rate in the small firm sector. The implication of this is that, every year, there are a large number of 'new' firms in the New Zealand business population, with some of them being managed by owners who are experiencing self-employment for the first time.

Factor 6: The prevalence of family involvement
In the small firm, particularly those with only one or two employees, it is typical for family to be directly involved in the firm – either as employees or as unpaid workers.[42] In New Zealand, the majority of small firms would be classified as family businesses. (Although there is no single definition of this term, it is usually taken to refer to an enterprise in which family members influence the direction of the business through the exercise of kinship ties, ownership rights or management roles.) The implication of this involvement is potentially complex. On the one hand, high levels of trust between the family members, strong sense of responsibility and a high degree of loyalty between employer and employee may make the implementation of good OHS practice more prevalent, but at the same time, the close personal relationship that usually exists between family members may lead the owner-manager to be less attentive to ensuring that appropriate OHS practices are in place.

Factor 7: The prevalence of seasonal workers
Seasonal workers are crucial to some of New Zealand's industries, such as horticulture or viticulture, and with the shortage of New Zealand workers, an increasing number of seasonal workers come from overseas, with a high proportion of backpackers or people on temporary work permits being employed. In the OHS context, seasonal workers are an important

employment group that is characterised by being very diverse, with a need to work long hours on repetitive tasks in difficult conditions. Furthermore, it may be difficult to encourage them to become involved in workplace programmes or training because of the temporary nature of their employment. From a small firm perspective, seasonal workers challenge the management capability of the owner-manager as well as the operational structures and practices that are in place.

2.4 Role and importance of small businesses in the New Zealand economy

Over the last 30 years, the small business sector has received growing recognition as a valid form of economic activity in all parts of the world, with the potential to contribute to economic prosperity as well as social development. These firms contribute to the overall economy in a number of measurable ways (employment and GDP) as well as through providing services to the local and regional communities where they are based. This contribution is now well recognised, and in recent decades, more attention has been directed at understanding the reasons for the existence of small firms and understanding how they differ from large firms. As the study of small firms became established following the widely read report of the enquiry into small firms in the UK,[33] it was quickly appreciated that small firms are not simply infantile large firms – they have a distinct and separate role to play in an economy. However, whilst many researchers and policy-makers were quick to appreciate the practical contribution that small firms can make to an economy, it was also apparent that there was a downside: in particular, there was concern over the apparently high failure rate of small businesses.

Small firms are often referred to as the 'coronary cases' of the business world because of apparently high failure rates. However, it is often very difficult to determine the exact proportions for firms that cease to trade or to determine the reasons that this situation may arise – genuine business failure or a personal choice by the owner to disestablish the firm. As a result, most research studies on business failure use the definition of simple discontinuance because it is the easiest to apply to statistical databases.

The latest release by Statistics New Zealand in March 2008 showed that, of the 43,000 new businesses that first started operation in 2001, 79 percent were still operating in 2002, 57 percent in 2004, and 40 percent were still operating in 2007. Non-employing new businesses from 2001 had a significantly lower proportion that survived the six years, compared with businesses that had paid employees. Despite these apparently clear figures, it must be noted that not all of the 60 percent of firms not operating in 2007 may have ceased to exist because of genuine business failure.

Data from Statistics New Zealand[43] provide an indication of the profit made per employee. While the data need to be treated with some caution, it shows that enterprises with 1–5 employees have the highest average real profit per employee of all SME size groups: $29,194 (see Table 1). Further, enterprises in this size bracket account for almost 40 percent of all profits for the sector overall. This equals a total profit of about $10.05 billion. Enterprises employing fewer than 20 staff have a share of about 33 percent of total sales and income, while enterprises with 100–499 staff have the highest average real sales per employee: $229,575.

Employee count	Average real profit per employee ($)	Average real sales and other income per employee ($)
1–5	29,194	181,702
6–9	15,601	140,119
10–19	10,160	133,446
20–49	10,708	149,294
50–99	11,445	162,718
100–499	16,069	229,575

Table 1. Profit and sales by employee count
(Source: Statistics New Zealand[43])

Like most other modern economies, New Zealand is predominantly a nation of small businesses – 68 percent of all businesses have no employees (i.e. they are run by a single owner-manager or by one or more working proprietors), 89 percent employ five or fewer people, and 97 percent employ 20 or fewer people (Table 2). The average number of employees per enterprise is five. When non-employing firms are removed, the average number of employees per enterprise is 14.

Employee count	Number of enterprises	%	Number of employees (EC)	%
0	315,049	68	0	0
1–5	98,087	21	227,790	12
6–9	20,269	4	146,310	8
10–19	16,430	4	220,310	12
Subtotal	***449,853***	***97***	***594,310***	***32***
20–49	8,903	2	264,300	14
50–99	2,517	1	172,830	9
100+	2,125	1	891,640	46
Total	***463,380***	***100***	***1,923,190***	***100***

Table 2. Number of firms and employees in New Zealand
(Source: Statistics New Zealand[43])

Note: These data exclude agricultural enterprises, which comprise approximately 70,000 enterprises.

Enterprises with fewer than 20 employees constitute over 90 percent of enterprises in most industries. This is most significant in the property and business services sectors where small firms account for 99 percent of all enterprises. Other industries where enterprises with fewer

than 20 employees are dominant are finance and insurance, construction, personal and other services, and communication services (see Table 3).

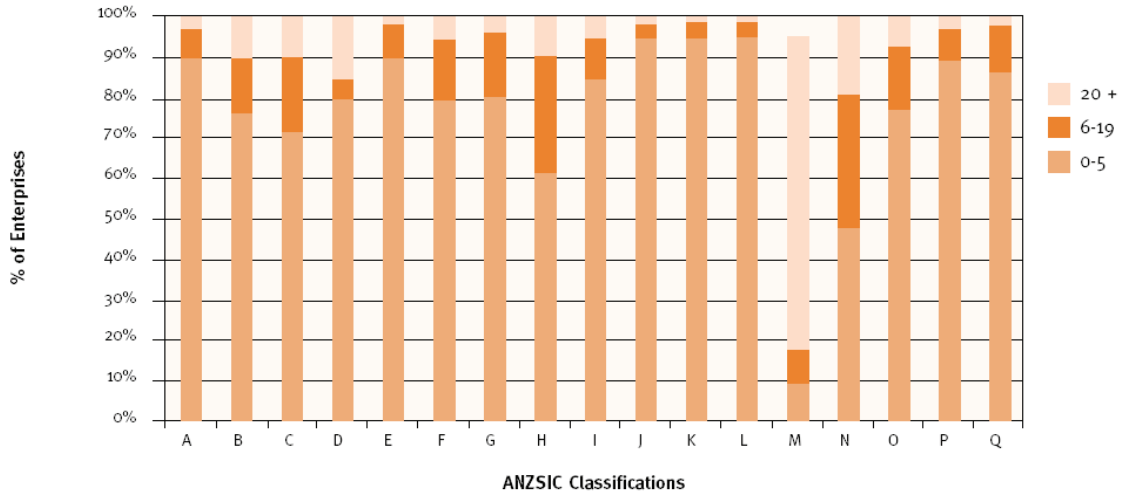


Table 3. Percentage of enterprises by employee count size group and ANZIC classifications at February
(Source: Ministry of Economic Development[32])

The ANZSIC industry classifications used are: A – Agriculture, forestry and fishing; B – Mining; C – Manufacturing; D – Electricity, gas and water supply; E – Construction; F – Wholesale trade; G – Retail trade; H – Accommodation, cafés and restaurants; I – Transport and storage; J – Communication services; K – Finance and insurance; L – Property and business services; M – Government administration and defence; N – Education; O – Health and community services; P – Culture and recreational services; Q – Personal and other services.

Small businesses take different legal forms (see Table 4) – 64 percent of all enterprises employing fewer than 20 staff operate as limited liability companies, 28 percent as sole traders and 26 percent as partnerships. A further 8 percent are trusts or estates.

	Sole trader	Sole trader (%)	Partnership	Partnership (%)	Limited liability company (LLC)	LLC (%)
0	62,008	24	3,3103	13	92,844	35
1–5	11,289	4	8,825	3	53,267	20
6–9	790	0	1,296	0	13,879	5
10–19	301	0	822	0	11,816	4

Table 4. Firms with fewer than 20 employees by legal form
(Source: Statistics New Zealand[43])

Small firms contribute to employment in a significant way, particularly in small towns or rural locations. In February 2007, enterprises with fewer than 20 employees accounted for 32 percent of total employment, with this number increasing slightly over the previous couple of years. At the same time, these small (or micro) firms – many of which were also new firms – created jobs: between February 2001 and 2006, enterprises with 1–5 employees created the

greatest number of new jobs in the economy, and with 95,320 new jobs, enterprises employing up to 10 employees accounted for 59 percent of all new jobs in the economy.

2.5 Characteristics of workers and employment relations practices in small businesses in new Zealand

Studies show that New Zealand small businesses are less likely to adopt formalised employment or OHS procedures.[44–46] Researchers have been critical about the quality of employment in small businesses in New Zealand.[47] Within the New Zealand and overseas small business sector, wage rates are often lower, jobs less secure and working conditions poorer, although job satisfaction is frequently higher than in large companies.[48] New Zealand small business employers rarely hire unionised labour and are more likely to employ staff on individual employment agreements.[46] Although the majority of employees across all business sizes are full-time, businesses employing fewer than 20 staff are generally more likely to have part-time employees than larger businesses.[49] Moreover, businesses with 1–5 employees employ the greatest proportion of part-time staff.[49] While New Zealanders are also working longer and harder across all industry sectors, workers located in the agriculture and road transport industries – industries with a high proportion of small businesses – work some of the longest hours in New Zealand.[50]

There is also growing recognition in the literature of the importance of making linkages between small business employment practices, workforce composition and OHS practices. Indeed, the argument put forward here is that OHS in small businesses cannot be addressed without considering other critical factors such as the employment relationship between the employer and employee. It is also acknowledged that not all employment relationships in small businesses are the same. Small business affiliations can range from harmonious to disagreeable and something in between.[44] Unlike large businesses, OHS in the small business sector is further complicated by the predominant use of family and friends as paid and unpaid labour. OHS practice can be either compromised or enhanced by the presence of close associates.

Overseas statistics and research from comparable countries, such as Australia, indicate that migrants make up a high proportion of the small business labour force.[51] While similar New Zealand statistics are not available, anecdotally it appears that migrants are over-represented in the small business sector. There is widespread under-reporting of workplace injuries and illnesses amongst new migrants in Australia[51] and also in precarious employment in call centres in Auckland, New Zealand.[47] Furthermore, New Zealand case studies highlighted the use of precarious employment strategies that gave the worker less power to remedy poor working conditions.[48]

The Linked Employer-Employee Database (LEED) gives some insight into the labour market that relates to firm size, although there are some gaps in the data. LEED statistics are only available in the following size brackets: 0 employees, 1–9 employees, 10–49 employees and 50+ employees. LEED also offers important information about the male/female balance within the labour force, with 55 percent of jobs in firms with fewer than 50 employees being filled by women. Interestingly, worker turnover rate is about the same for men and women and is independent of the size of the firm in which they work (see Table 5). Moreover, LEED statistics indicate that 33 percent of all jobs in enterprises with fewer than 50 employees are filled by staff aged between 15 and 29. A further 44 percent of employees are aged 30 to 49 and 23 percent are aged 50 and over. Worker turnover rate is highest in the age group 15–34

years and decreases with age (see Table 6). While there are some statistics on youth working within the New Zealand small business sector, there are few or no data on the extent of child labour within this sector. Nonetheless, child labour typically is concentrated in industries with a high number of small businesses, such as farming and retail (for example, convenience stores).[52,53]

Employee count	Male	Male (%)	Worker turnover rate	Female	Female (%)	Worker turnover rate
1–9	197,550	24	17	226,120	28	18
10–49	174,340	21	16	219,930	27	17
Total	***371,890***	***45***	***33***	***446,050***	***55***	***35***

Table 5. Firms with fewer than 50 employees by male and female employees
(Source: Linked-Employer-Employee Database (LEED), Statistics New Zealand, 2008)

Age range (years)	Employee count (EC) 1–9	EC (%) 1–9	Worker turnover rate (%)	Employee count (EC) 10–49	EC (%) 10–49	Worker turnover rate (%)
15–24	79,010	10	28	96,350	12	28
25–29	39,980	5	21	48,280	6	20
30–34	40,130	5	17	47,990	6	16
35–39	43,190	5	15	51,040	6	14
40–44	43,540	5	14	51,420	6	12
45–49	39,470	5	13	48,350	6	11
50–54	32,060	4	12	39,380	5	10
55–59	26,010	3	12	31,920	4	10
60+	28,500	3	13	31,330	4	11

Table 6. Firms with fewer than 50 employees by age of employees
(Source: Linked-Employer-Employee Database (LEED), Statistics New Zealand, 2008)

Government agencies compile fewer statistics on employment in small and micro businesses compared to larger organisations. In particular, Statistics New Zealand[54] highlights a number of limitations with the coverage of business demographic data, including:

- non-coverage of small enterprises that fall below the $30,000 turnover threshold (based on the previous compulsory threshold for GST registration)
- the exclusion of agriculture production from the industry coverage
- industry and business classifications and the numbers of working proprietors are currently not updated for smaller non-employing firms – there are approximately 100,000 smaller enterprises in the business demography statistics in this category
- lags in recording businesses that have ceased trading or whose activity has dropped below the $30,000 threshold – accordingly, some enterprises that have actually ceased trading are measured in business demographic statistics.

In spite of these limitations, what statistics there are indicate that employment relations in the small business sector do differ, to some extent, from medium and large businesses in terms of how employment relationships are practised. It can also be concluded that OHS in small businesses, in the context of employment relations, is a complex web of social relations between employer and employee, men and women, and migrant and non-migrant labour.

2.6 Summary

There is currently no formal definition of a small business in New Zealand but there are a number of identifiable cut-off points in the size of a firm where management practices change, from beginning to employ staff, to chiefly employing friends and/or family, to a size where the 'span of control' is too large for the owner-manager and where a degree of formality becomes necessary. This usually occurs at any point beyond 10–12 staff. Although the term 'small to medium enterprises' (SMEs) is commonly used in this context, the present report defines small businesses as those that employ fewer than 20 staff (i.e. that have an employee count (EC) of <20) and are owner-managed.

Like most other modern economies, New Zealand is predominantly a nation of small businesses. About 68 percent of all businesses have no employees (i.e. they are run by a single owner-manager or by one or more working proprietors), 89 percent employ five or fewer people and 97 percent employ 20 or fewer people. Small firms contribute to employment in a significant way, particularly in small towns or rural locations. They account for 32 percent of total employment and have a share of about 33 percent of total national sales and income.

In general, a small business is managed by the owner in a personalised (non-formal) manner, often involving (unpaid) family/friends and employing seasonal/casual/part-time (commonly migrant, female or youth) workers, is independent (not a subsidiary of a larger company), has a limited market share and resource base and has a high potential for failure. Small business management practices for OHS are characterised by less access to external sources of advice and support (relying on trusted relationships), less provision of OHS information/expertise and lack of documentation and knowledge about hazardous chemicals (including substitution).

3. Estimate of the percentage occupational health and safety burden from small businesses in New Zealand

3.1 Introduction

This section starts by providing data on workplace illness, injury and fatality in New Zealand and then attempts to provide an 'estimation' of the percentage of overall occupational health and safety burden generated by small businesses in New Zealand and considers the difficulties associated with determining this.

3.2 Workplace illness, injury and fatality in New Zealand

There is growing evidence that those working in the small business sector are more frequently exposed to hazardous situations and suffer more work-related injuries and illnesses than those working in large businesses.[48,55] However, as New Zealand government OHS statistics are not analysed by size of firm and different institutions use different classifications in compiling their descriptive statistics, it is difficult to make conclusive statements about the levels of small business injury and illness. Nonetheless, Table 7 suggests that there are good grounds for arguing that small businesses have a higher proportion of injury fatalities, as farming and construction are made up of a high proportion of small businesses. Note that the number of fatalities investigated by the Department of Labour is not an accurate or reasonable indicator of trends over time, nor are they an accurate guide to levels of safety in the workplace. The Department of Labour figures do not include fatalities from long latency diseases caused by exposure to hazardous substances. Note also that this is a verbatim transcription of the legend – the authors of this report indicate that not all long latency diseases are caused by exposure to hazardous substances. This is of particular concern, as Mayhew[11] indicates that micro businesses have more difficulties complying with the OHS legislation and providing safe and healthy working environments compared to larger businesses.

Industry	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Forestry	9	9	4	7	2	7	9	1	7	5
Construction	17	13	17	8	12	14	6	5	14	13
Industrial/ commercial	15	9	16	7	29	29	30	16	26	15
Agriculture/ horticulture	15	12	17	17	25	22	15	24	17	21
Fishing	-	-	-	8	6	4	7	9	14	2
Extractive industries	-	-	2	0	5	1	2	1	1	1
Total	***56***	***43***	***56***	***39***	***73***	***73***	***62***	***47***	***65***	***55***

Table 7. Number of New Zealand Department of Labour recorded fatalities
(Source: Department of Labour[56])

The number of work-related injuries and fatalities in New Zealand continues to be high compared to other advanced market economies (see Figure 2), and the rate of fatalities has remained relatively static (see Table 8). It should be noted, however, that the number of fatalities investigated by the Department of Labour may not necessarily be an accurate or reasonable indicator of trends over time, nor are they an accurate guide to levels of safety in the workplace. In addition, the Department of Labour figures do not include fatalities from

long latency diseases caused by exposure to hazardous substances. Similar jurisdictions, such as Victoria and Queensland, have half the number of occupational fatalities compared to New Zealand's rate of fatalities.[57,58]

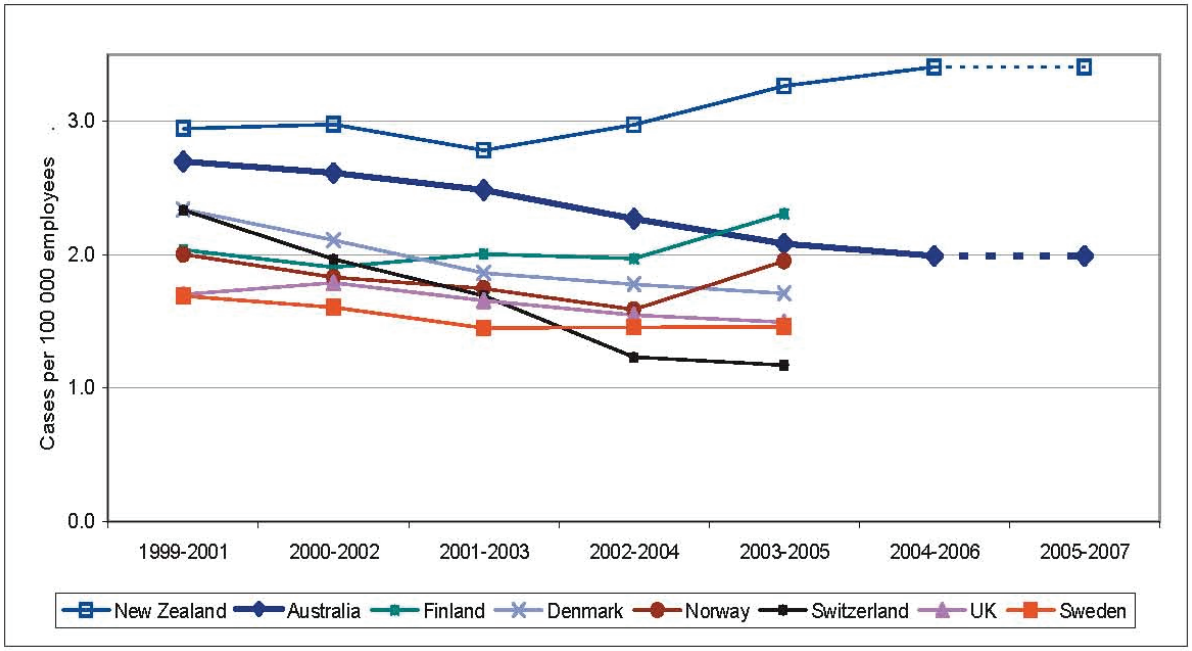


Figure 2. Comparison of New Zealand's work-related injury fatality rate with the best performing countries
(Source: Commonwealth of Australia, Department of Education, Employment and Workplace[59])

Industry	2000 Fatal/ FTE	2001 Fatal/ FTE	2002 Fatal/ FTE	2003 Fatal/ FTE	2004 Fatal/ FTE	2005 Fatal/ FTE	2006 Fatal/ FTE
Forestry	7	2	7	9	1	7	5
Construction	8	12	14	6	5	14	13
Industrial/ commercial	7	29	29	30	16	26	15
Agriculture/ horticulture	17	25	22	15	24	17	21
Fishing	8	6	4	7	9	14	2
Extractive industries	0	5	1	2	1	1	1
Total	***39***	***73***	***73***	***62***	***47***	***65***	***55***

Table 8. Number of New Zealand Department of Labour recorded fatalities
(Source: Department of Labour[56])

3.3 Estimating the percentage OHS burden from small businesses

Driscoll et al.[60] estimated the overall annual burden of occupational ill health in New Zealand as 700–1,000 deaths from occupational disease, 100 deaths from occupational injury, about 17,000–20,000 new cases of work-related disease and about 200,000 occupational accidents resulting in ACC claims, but did not provide any economic estimates. According to the

Commonwealth of Australia Department of Education, Employment and Workplace,[59] the incidence rates of compensated claims for New Zealand in 2006–07 were 21.7, 13.5, 15.1 and 15.4 per 1,000 employees for employee size groups of 1–4, 5–19, 20–99 and 100 or more employees, respectively, but neither do these data provide any economics cost estimate.

Adams et al.[61] examined the national economic burden of OHS in New Zealand. They reported a total documented cost of $1,167,471.84 for 15 detailed economic and social cost case studies. They concluded that the actual costs for these cases would far exceed this figure because it did not include the costs associated with Department of Labour inspectors, ACC case managers, workplaces, individuals and their families, nor the loss of income borne by individuals and their families as a result of their injury or illness, and the costs of emergency medical treatment were estimated. They suggest that an economic cost, based on a percentage of the gross domestic product, of between $4.3–8.7 billion for work-related disease and injury for the year ending 31 March 2002, is possibly conservative. Their report also provides very valuable information about the qualitative aspects of the social consequences, which are unquantified in monetary terms.

Although not explicitly stated, six out of the 15 cases in the Adams et al. report[61] were small businesses. The total estimated documented cost for these six cases was $398,694 (see Table 9), giving an average of $66,449 per case.

Case		**Costs**				
Business	**Injury/ disease**	**Individual $**	**Business $**	**ACC $**	**DOL (OSH) hours and $**	**Total $**
Dyer	Occupational asthma	290	200	6,557	47.5, $1,482	8,530
Boat spraying	Solvent neurotoxicity	9,860	Not quantified	24,509 (a)	12	34,369
Life raft repair	Solvent neurotoxicity	3,460	2 weeks lost time	96,090 (b)	21	99,550
Boat spraying	40 percent burns after paint explosion	25,870	23,130	113,653 (c)	106.5	162,654
Dairy farmer	Fractures, ATV accident	337	10,740	11,638	11	22,715
Panel beater	Noise-induced hearing loss	1,516	60,000	9,360 (d)	2	70,876
Totals		***41,333***	***94,070***	***261,807***	***200, $1,482***	***398,694***

Table 9. Costs associated with six case studies of small businesses
(Source: Adams et al.[61])

Note: The data are for documented costs only over 1–3 year periods. Opportunity costs, costs of ACC case management and costs to individuals incurred through loss of income were also not included in the table but, in some cases, were calculated and are included in the original report. Costs to ACC incurred through the bulk

funding of acute medical services were estimated. Company and individual costs are subject to personal recall and cannot be considered complete. Thus, in this table, the totals sometimes exceed the sum of the components. In addition, additional projected future costs were estimated and are indicated as follows: (a) $460,993, (b) $297,047, (c) $42,483, (d) $19,579. The average cost per case for the small businesses ($398,694/6) is $66,449.

A recent report from the Department of Labour[62] describes the rationale for a Workplace Safety Discount Scheme (WSDS) for small businesses and an indication of its relative economic burden. Its introductory rationale states:

> ACC injury claims data indicates that small employers with up to $380,000 per annum liable earnings (a proxy for 10 full-time equivalent staff) and self-employed people on average have a higher incidence per hundred employees and higher cost of ACC claims each year, compared to medium and large businesses. Claim incidence per hundred employees for small employers was 35 percent higher and for self-employed 45 percent higher, than medium to large employers.
>
> International literature and anecdotal evidence from site visits by ACC injury prevention consultants and Department of Labour inspectors suggest that the higher claims rate is in part due to some small businesses having lower levels of health and safety awareness and hazard management practices. It is also due to a greater proportion of small businesses operating in higher risk industries. In 2003, six industry sectors – agriculture, forestry, construction, road freight, motor trades, and inshore fishing – accounted for 33 percent of the total number of small businesses, but 53 percent of the number and 61 percent of the costs of all claims for work-related injuries from small businesses.

Allen and Clarke[63] report that an ACC programme called Workplace Safety Evaluation (WSE) is primarily for small businesses and costs ACC $220,000 per annum to operate:

> 'Workplace Safety Evaluation is an ACC programme that targets employers who have higher than average claims rates and attempts to improve their workplace health and safety practices. Candidates for this programme are identified through ACC claims data. The threshold for selection varies depending on the industry. ACC injury prevention consultants work with identified businesses to improve health and safety practices. An audit of the workplace can be undertaken if the collaborative process does not succeed in reducing the rate of injury or if adequate steps are not taken within a given timeframe. If the employer fails this audit, ACC has a statutory responsibility to increase the ACC levy payable.
>
> Approximately 200 employers participate in Workplace Safety Evaluation at any one time. For example, in 2004/05, 226 employers participated, while as at February 2006, the number for the 2005/06 financial year was 230. ACC advises that most participants in the Workplace Safety Evaluation programme are small employers with liable earnings of more than $375,000 with between 10 and 30 FTE. In the past, the Workplace Safety Evaluation programme has focused on smaller employers because these organisations were often the worst performing organisations in a sector….
>
> The Workplace Safety Evaluation programme costs ACC $220,000 per annum to operate. This includes administration costs, one FTE, auditing costs, and the costs of operating an adjudication panel. ACC has invoiced a total of $9,000 in 2005/06 for

> upwards adjustments to levies paid by two participants who failed the audit process. No upwards adjustments have been made in previous years. (p.78)

The two schemes described above (WSDS and WSE) exemplify how each agency has targeted different sized small businesses (about 10 and 10–30 full-time equivalent staff, respectively) and that each agency has a different underlying rationale for the focus of each scheme.

More recently, Pezzullo and Crook[2] provided a detailed quantitative analysis of the many factors influencing the overall scale of the national economic and social costs of occupational disease and injury in New Zealand. They estimated that the financial costs of occupational disease and injury were $4.9 billion per annum and that the costs of suffering and premature death were $16 billion per annum. Their estimate of the full costs was $20.9 billion (in 2004–05).

An estimate of the relative economic burden for small businesses may be derived by calculating the fraction of the overall economic cost estimates of Pezzullo and Crook[2] ($20.9 billion) as a percentage of the total number of employees in small businesses with an employee count of 20 or less (32 percent). This would give a very crude estimate of the relative economic burden for small businesses in New Zealand of $6.7 billion.

3.3.1. New Zealand data for estimating the relative OHS burden for small businesses

Other than the estimates made in the previous section, a realistic estimate of the percentage of the overall OHS burden from small businesses in New Zealand has never been made. Such an estimate is very difficult to determine because of a lack of suitable data. Thus, in the present study, information that could help provide some indication of the percentage burden of OHS for small businesses in New Zealand was sought from Statistics New Zealand, the Department of Labour and ACC. It was also sought from WorkSafe Victoria, Australia, as it was thought that the latter may have recently undertaken work of this nature that could be used in an indicative manner.

Statistics New Zealand reported that it used ACC data, so was unable to help further (personal communication, I. Jaegers, 9 July 2008). The Department of Labour did not provide any data, but two of its recent reports[61,62] have been used in the present technical report as described above. WorkSafe Victoria provided references for the overall economic burden of workplace injury and illness in Australian states[66–68] and for Northern Ireland[69] but indicated that it had not previously estimated the small business share of the burden and was not aware of any studies that had (personal communication, K. Jones, 16 July 2008).

ACC provided data for the years 2002–08 (see Appendix B) that have allowed an estimation of the percent economic burden for small businesses (in relation to large businesses). Business size was estimated from liable earnings and estimated employee count (based on total company wages and salaries divided by the average annual wage rate). Small business data included self-employed businesses. The data were for net standard levies (estimated from wages/salaries multiplied by the employer count, in each levy year, less workplace safety discounts) and ultimate claim costs (the expected lifetime claim cost, for claims incurred in each levy year, inflated and discounted to present value). This approach is limited as it is only an industry average of liable earnings.

For 2008 (see Table 10), small businesses accounted for 49.5 percent of ACC's net standard levy and 50.3 percent of ultimate claim costs, and for 99 percent of total employers but a lower proportion (41.3 percent) of employees. Thus, the net standard levy and ultimate claim cost per employee in small businesses (58 percent and 59 percent respectively) were much greater than they were per employer (1 percent for both net levy and ultimate cost). The findings were similar for 2002–07 (see Appendix B).

ACC data for 2008, as at 31 March	Self-employed and small employers	Total (%)	Large employers	Total (%)	Total
Number of employers	984,912	99.0	9,806	1.0	994,718
Employees (estimate)	898,094	41.3	1,275,870	58.7	2,173,964
Wages/salaries	$29,935,739,571	36.9	$51,192,893,857	64.1	$81,128,633,428
Net standard levy	$327,468,817	49.5	$334,249,872	50.5	$661,718,689
Ultimate claim cost	$264,336,120	50.3	$260,855,682	49.7	$525,191,803

Table 10. ACC data for 2008, as at 31 March, for number of employers and employees, wages/salaries, net standard levy and ultimate claims costs for small (including self-employed) and large employers

Note: The original data supplied by ACC included small employers and self-employed separately. With concurrence from ACC, they have been presented as summed data in this table. Since ACC do not collect data on the number of employees per employer, employer size was estimated from liable earnings and estimated employee count (based on total company wages and salaries divided by the average annual wage rate).

Application of this relative burden (50.3 percent) to the full economic cost burden estimated by Pezzullo and Crook[2] would provide an estimated relative economic burden for small businesses of $10.5 billion per annum. In view of the lack of suitable data in New Zealand, this is our current 'best estimate' of the economic burden on OHS in small businesses. In order to be able to be better able to calculate the relative economic burden attributable to small businesses, ACC should develop a mechanism to identify small businesses based on employee count/number of full-time equivalent staff.

3.4 Summary

The average cost per case of six illustrative small business cases in a report by the Department of Labour was $66,449.[61] An estimate of the relative economic burden for small businesses may be derived by calculating the fraction of the overall economic cost estimates of Pezzullo and Crook[2] ($20.9 billion) as a percentage of the total number of employees in small businesses with an employee count of 20 or less (32 percent). This would give a very crude estimate of the relative economic burden for small businesses in New Zealand of $6.7 billion. Government agencies do not routinely collect data on the number of people in a business, but ACC estimates business size from liable earnings and estimated employee count (based on total company wages and salaries divided by the average annual wage rate). Using this approach, ACC data for 2008 suggest that small businesses account for about 50 percent of their levies ($3.3 billion per annum) and ultimate claim costs ($2.6 billion per annum). Application of this relative burden (50.3 percent) to the full economic cost burden estimated by Pezzullo and Crook[2] would provide an estimated relative economic burden for small businesses of $10.5 billion per annum. In view of the lack of suitable data in New Zealand, this is our current 'best estimate' of the economic burden on OHS in small businesses. In order to be able to be better able to calculate the relative economic burden attributable to small businesses, ACC should develop a mechanism to identify small businesses based on

employee count/number of full-time equivalent staff. In summary, the relative national economic burden of OHS for small businesses in New Zealand is unknown. Moreover, it is very difficult to determine because of a lack of suitable data.

4. Review of New Zealand occupational health and safety practice, programmes and interventions in relation to small businesses

4.1 Introduction

This section reviews New Zealand occupational health and safety practice, programmes and interventions targeting small businesses. The objectives of the review were to identify any evidence-based rationale behind the development of the OHS programmes or interventions and ascertain if there are any embedded evaluations. As stated earlier, the model underpinning this review was inspired by Hasle and Limborg[20] (see Figure 1), which was a useful framework for identifying where there may be strengths and weaknesses in the planning and implementation process for different programmes and interventions.

A two-pronged approach was used. In the first part, a literature review was completed on the New Zealand and international academic literature published within the past decade that was relevant to OHS in New Zealand small businesses and, in particular, OHS programmes and interventions aimed at small businesses. A review of government commissioned reports (for example, by NOHSAC, ACC and the Department of Labour) was also undertaken.

In the second part of the approach, qualitative data and opinions were gathered from interviews with stakeholders and from those working in the small business sector regarding how small businesses practised OHS and the main issues and the efficacy of OHS interventions or programmes. Expert knowledge on national and industry small business-specific programmes and interventions was also mined from the project team, NOHSAC (via the project officer), representatives from central and local government bodies, representatives from industry associations and representatives from other key agencies such as the Employers and Manufacturers Association (EMA) and the New Zealand Council of Trade Unions (NZCTU). An industry case study for the commercial fishing industry is also included as an appendix.

4.2 A review of the literature

4.2.1 OHS practices in small businesses

Several New Zealand and overseas studies over the past decade have identified crucial factors that influence the level of OHS compliance and practice in the small business sector.[11,12,45,70–75] Factors such as access to resources, training and industry experience, influence of large businesses, influence of quality management systems, the regulatory environment and the relationship with the OHS regulatory agency and small business advisors are inter-linked and operate in tandem. Work environment issues also need to be seen not as specific problems in relation to health and safety, but as part of the much wider social and economic context in which the small business operates.

Research also shows that the high rate of workplace injury and illness in the small business sector is not solely the result of undertaking more hazardous work but primarily because arrangements for preventive health and safety in small businesses are unsatisfactory.[6,31,76] The general and multi-faceted lack of resources or 'structures of vulnerability'[77] that characterise the experience of small businesses for both employers and workers mean that effective management of health and safety performance in these businesses faces considerable

challenges. They arise for example, from:

- the economic precariousness of the business (i.e. tight economic margins)
- the organisation and culture of work in the sector
- low levels of compliance and enforcement.

Employment arrangements in small businesses mean that most are unlikely to adopt formalised employment or OHS procedures.[31,75,78–81] Often, wage rates are lower, jobs are less secure and working conditions are poorer, although job satisfaction is frequently higher compared to larger companies.[78,82–87] In New Zealand, small business employees are often female and/or many are non-English speaking, unskilled/semi-skilled, predominantly non-unionised and often employed on a casual basis.[48] The cultural and social norms of the individual small business employer are also significant determinants of the way OHS is viewed and practised and the way that employees are treated. In their recent New Zealand study, Massey and Ingley[45] note:

> Many firms discussed their health and safety practices in term of a moral obligation to their staff. This was especially evident in firms where the managers took an approach to management that could be described as holistic (for example, demonstrated by reports of caring for the well-being of staff beyond the work environment). (p.66)

There are a variety of other factors that can impact on OHS practices in small businesses. Health and safety practices of many small businesses can be driven by external factors such as 'international parentage', partnering with other large companies, pressure from trade associations or by the need to meet export and/or quality standards.[31] These factors can provide small businesses with a structural rationale for undertaking certain practices (for example, when an international group of firms adopted a set of common standards[45]).

More recently in New Zealand, there have been a number of studies linking OHS practices with productivity in which small businesses have featured. This increased interest in labour productivity has been driven, to a large extent, by central government, in particular the Department of Labour. In one such study, Massey and Ingley[45] noted that, in a number of the smaller firms, although not all, health and safety initiatives were primarily seen as a cost to the firm, which, in turn, prevented the managers from conceptualising health and safety more broadly; that is, in relation to improved firm performance or productivity. They add:

> In some of the small firms, there was a lack of observable health and safety practices. However, this was rarely because health and safety was regarded as unimportant; in fact, it appeared that, at times, it was simply a lack of formal business-related systems of all types – a situation that was at odds with the personal commitment on the part of the owner or manager to a 'healthy and safe' workforce. In these cases (where the interviewee typically commented that "the person comes before the system"), it appeared that, if people were not unwell (and/or not having accidents), then it was assumed that health and safety was adequate. (p.68)

In summary, the extant view in the literature is that previous assumptions regarding the factors that influence OHS practice and compliance may not be entirely correct when applied to the small business sector. Using limited variables, such as the size and age of the business, without considering other factors, such as the employer's ability to access resources, can limit research findings.

It is also argued that the condition of the individual is more important in a small business setting than is the case in larger organisations; that is, there are fewer constraints on the small business employer in terms of the organisational layers of responsibility, such as shareholders, directors, managers and employees. Control over the business is more direct than diffuse in a small business, whereas large organisations tend to operate over multiple sites. Hence, the investigation of OHS in the small business sector dictates that the characteristics of the small business employer – and his or her relationship with employees and the OHS regulatory agency – be magnified and scrutinised in order to identify the factors that enhance or impede good OHS compliance and practice in a small business.

4.2.2 OHS studies and the New Zealand small business sector

New Zealand OHS research, including OHS in small businesses, is dominated by industry-specific and/or illness and injury-specific studies, with an emphasis on perceived high risk for small businesses.[88–94] Inter-industry and intra-industry comparisons within New Zealand have been used to expose OHS policy deficiencies as well as to identify hazardous industries that, in turn, can be targeted by OHS agencies for prevention and enforcement measures.[90,93,95–97] While many of these studies do not focus specifically on the small business sector, the chosen industries and occupations in these studies, such as farming,[93,97,98] forestry,[91] hairdressing,[94] tourism,[89] electrical,[90] and exposure to chemicals in small businesses,[76] by default capture some of the essential OHS issues facing those working in the small business sector.

There are, nonetheless, a few industry studies that have a New Zealand small business focus.[22,55,99] Most of these studies examine the issues facing those working in this sector. For example, Dryson's[22] survey of workers in small engineering businesses indicated that 15 percent of those surveyed considered their working conditions were poor, and 8 percent (most of whom were manual workers) considered that their health had been affected by work. Almost 60 percent of those surveyed had needed OHS information but noted that the information had not been forthcoming. The question arising from this study is: Has the situation improved in the past 15 years? Hence, there is a need for comparative analysis.

There are benefits of comparative industry studies, as outlined in the NIOSH report entitled *Identifying high-risk small business industries*: *The basis for preventing occupational injury, illness, and fatality:*[100]

> Given the limited Federal, State and local resources available in the United States for occupational health and safety, public and occupational health practitioners must focus prevention activities on industries that have the greatest need. Identifying and understanding the risks associated with such industries will also prove useful to employers, employees and insurers involved in small business. (p.3)

Industry-specific research in New Zealand has been popular for several reasons. First, industries such as farming, manufacturing and construction have more registered work-related fatalities than other industries, and therefore, it is understandable that researchers have been keen to examine ways of making the working environment safer. Second, as these industries account for the bulk of compensation claims, there are great economic and social incentives to target these industries with a view to lowering the compensation claims. Third, because such hazardous industries have a high profile, research funding to investigate these industries is often more available and more lucrative than is the case for less hazardous industries. Thus it is seldom that industry studies focus on size of business.

There have also been a number of New Zealand studies on specific occupational illnesses and injuries that have some relevance to the small business sector. These studies can be crudely divided into two groups. The first group concerns those studies that focus specifically on a particular disease or injury. For example, Firth et al.'s study[101] of the incidence of male cancer in New Zealand between 1972 and 1984 indicates disturbing trends of laryngeal cancer in firefighters, lung cancer in jewellery and precious metal workers, bricklayers and carpenters, and digestive cancers in woodworkers. Most of the industries associated with these occupations have a substantial number of small businesses. The second group of studies concentrate on mining injury and illness data. Many of the studies are comparative;[102–104] still other studies have contributed to the discourse on the methodological issues when using secondary data.[105–109]

4.2.2.1 Limitations of New Zealand studies on OHS practices in small businesses

However, there are major limitations with the research on OHS in the New Zealand small business sector. First, studies that concentrate on hazardous industries have a number of drawbacks. Although high-risk industries have a considerable small business presence, it is often the case that such industries contain some of the world's largest multinational companies, which have little in common with small businesses. Therefore, as most industry studies have a large business bias, there is a strong likelihood that their conclusions need to be treated with caution when applied to the small business sector. Another problem is that, where there is a growth in certain industries, particularly in the service sector such as tourism and hospitality, small businesses not only flourish but risks are less well-known and OHS control measures are less developed.[16,74,89,110,111]

There is general consensus in the literature that using the New Zealand government or semi-government databases to investigate OHS, and more specifically OHS in the small business sector, is problematic in that such databases are typically inconsistent, lack standardisation and are conservative, and thus should be treated with caution.[ii] The categorisation of injuries, workers' compensation claims, industry descriptors and so on have continually changed over the years, thus making comparisons over time difficult. The other significant problem using New Zealand databases is that the official ANZISC definition of a 'small business' is not applied universally throughout the government agencies, unlike other countries, such as Australia, the UK and most of the European countries. As a result, including New Zealand in international comparisons of OHS in small businesses is challenging to do and interpret.

Using occupational injury and fatality indices**,** including workers' compensation claims, can present an illusion of completeness. Thomas[112] argues that, in order to provide indepth explanations for disparities in the injury and illness rates among different types of small businesses, researchers cannot rely on government data alone, but should incorporate a range of data sources. Mayhew and Quinlan's study[113] of workers in the clothing, textile and footwear industry clearly highlights the pitfalls of using government injury and illness statistics as a basis for definitive conclusions. Their study shows that workers in industries with a high incidence of precarious/non-standard/casual employment are likely to be under-represented in the workers' compensation claims and injury or illness data, even though they may be experiencing similarly high levels of injury and illness as so-called 'high-risk'

[ii] See Otago University's IPRU reports, for example Cryer et al.[106] and Stephenson et al.,[107] as well as NOHSAC's reports (www.nohsac.govt.nz), for a more detailed discussion on weaknesses of New Zealand's injury and illness statistics.

industries. Quinlan[114] also notes that, from 1995 to 2002, the OECD has failed to publish statistics on the extent of precarious work, and as a result, those workers employed in precarious work (and, ipso facto, predominantly located in the small business sector) are rarely included in official OHS data.

In New Zealand, there is a lack of research on the health and safety of workers in precarious/non-standard/casualised employment, which overseas research has shown is prevalent in the small business sector.[115] With a few exceptions,[47,75,116] there is scant New Zealand research on the topic. Ironically, there has been more academic attention on the plight of child labour than has been the case with adult workers employed in precarious situations.[53,117–119] There is, however, some state recognition that vulnerable workers (such as casualised labour, older workers, new migrants and people with low literacy), many of whom are employed in small businesses, require special attention and protection in terms of their health and safety (see the Department of Labour's W*orkplace Health And Safety Strategy for New Zealand to 2015*[3]).

Another overlooked area of investigation is the question of how the supply chain impacts on New Zealand small businesses and, in particular, how it influences OHS in the small business sector. In Lamm's study,[17] there is evidence that large businesses through the supply chain can have either a positive impact (for example, providing OHS training for small business) or a negative impact (for example, insisting that vulnerable workers, such as illegal migrants or children are employed) on the health and safety practices in small businesses. Arend and Wisner[120] note the dilemma facing the small business employer:

> Conflict exists over how supply chain management (SCM) affects small- and medium-sized enterprises (SMEs). On one hand, SCM can provide quality, cost, customer service, leverage and even risk-reduction benefits for the SME. On the other hand, SCM exposes the SME to greater management and control hazards while reducing its private differentiation advantages. We test hypotheses relevant to the performance effects of SCM on SMEs using data collected from a recent survey of senior production managers. We find that SCM is negatively associated with SME performance after controlling for self-selection bias. We discuss several explanations for the result. (p.403)

The other major deficit of New Zealand OHS research is that most studies are located in regional or rural areas, such as Otago, Canterbury or Wellington, rather than in Auckland. There are significant differences in employment practices in Auckland compared with other regions in New Zealand. For example, Auckland cities have a more diverse population compared to other New Zealand cities. There is also evidence to show that over a third of 160 small workplaces investigated in Auckland employed illegal migrant labour in hazardous conditions.[75,121] The bias towards regional or rural-based studies, therefore, has enormous implications on the validity and generalisability of the results and distorts what is actually occurring in many Auckland small workplaces. It also has major implications for the quality of government policies and enforcement strategies.

In summary, there are few New Zealand OHS studies that have the small business sector as the primary unit of analysis, and the paucity of extant research is typically dominated by industry-specific and/or illness and injury-specific studies, with an emphasis on high-risk industries. The New Zealand preference for industry or injury/illness-specific research has meant that most studies fail to recognise that health and safety in the small business sector

does not take place in a vacuum; that is, it is more complex than the prevalence of a specific illness or injury amongst workers operating in an industry with a high percentage of small businesses. It is a broad multi-disciplinary subject that covers all aspects of working in a small business. Variables such as access to resources, training and experience of employers and employees, the influence of large businesses, the relationship with the OHS regulatory agency and other small business advisors and so on are recognised as having an influence on the processes and outcomes of OHS practice and compliance. Emerging research also shows that the increasing influence of the changing world of work on occupational illness and injury must be taken into consideration when analysing what is occurring within the small business and why.[122] Instead, all too often, OHS researchers adopt a singular methodological approach to investigate one problem situated in a hazardous industry and frequently in regional and rural settings. The resultant solutions and theories are flawed by the fact that there has been little or no recognition of the inter-relatedness of management, employment and regulatory factors and that the small business operates within a changing political, economic, and social and culturally diverse environment.

4.3 New Zealand OHS programmes and interventions

In the *Guide to evaluating the effectiveness of strategies for preventing work injuries*,[123] Robson et al. define an OHS intervention as "…an attempt to change how things are done in order to improve safety. Within the workplace it could be any new program, practice, or initiative intended to improve safety (for example, engineering intervention, training program, administrative procedure)" (p.1). Whilst this definition addresses workplace interventions, they may also occur at the societal level of policy/legislation.

One of the catalysts for targeted interventions for small businesses has been outlined in the *Workplace Health and Safety Strategy for New Zealand to 2015*[3] (see Figure 3). This signalled the Labour Government's recognition of small businesses as a national priority, indicating that it is an area to which the government wished to direct considerable resources. It included a strategic framework to direct the activities of stakeholders, including central and local government, industry organisations, unions and employers. The need for a coherent national policy on occupational health and safety has been recognised by New Zealand's recent ratification of the International Labour Organisation Convention 155 on occupational health and safety and the working environment.[7]

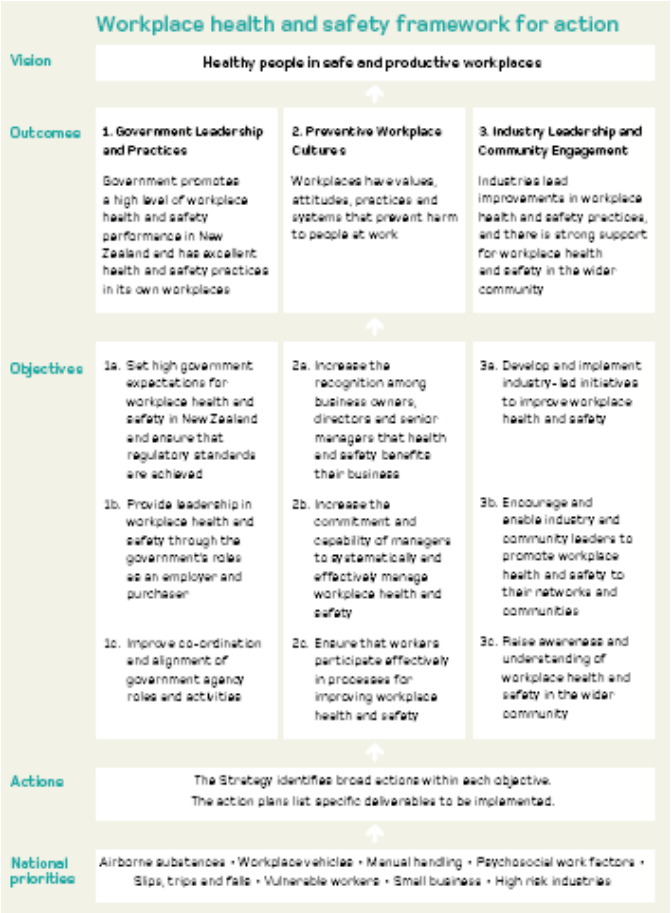


Figure 3. Workplace health and safety framework for action

(Source: New Zealand Government[3])

The evidence base for the rationale for the development and maintenance of New Zealand OHS programmes is largely unclear. The main driver for ACC-initiated programmes is generally based on the cost of ACC compensation claims for targeting certain 'hazardous' industries with relevant interventions, for example, FishSAFE and FarmSafe. However, the other main catalysts for their introduction seem to be either public and/or political pressure (for example, submissions in response to government select committee hearings) or as a result of trends perceived to be socially unacceptable (for example, a rise in a particular chemical-induced illness associated with a small business-dominated industry). According to Lamm et al.,[124] these catalysts and drivers can be grouped around the following headings:

- Traumatic incident, for example, a serious injury/illness/fatality, plummeting profits.
- A significant business juncture, for example a merger, a growth plateau.
- Management's desire to change and improve, often for financial reasons, such as better business practices, desire for more work-life balance, and so on.
- Competition and the lack of economies of scale negatively impacts on small operations and, as such, OHS – together with quality systems – was seen as alleviating these impediments.

A summary of the drivers that encourage employers to address OHS improvements in the workplace across societal levels is as follows:

- Recruitment and retention of staff is an important driver in all small businesses investigated.

- Their workforce was becoming more diverse and older.
- Managing the changes in the marketplace, for example, the exchange rate, the rise in oil prices and regulatory reforms.
- Committed and competent top management who ensure that quality and OHS standards are continually improved.

OHS interventions in New Zealand that target either the small business sector or have some relevance to small businesses are outlined in Table 11, and range from Accident Compensation Corporation's WSDS 10 percent discount on levies for small businesses to information tailored to the small business sector produced by the Department of Labour.

New Zealand interventions can be classified into two groups: active and passive measures. Active interventions typically require an individual to be 'persuaded' to refrain from unhealthy or unsafe actions.[125] Such an approach is consistent with Heinrich's domino theory model and Haddon's matrix model of accident and illness causation[165] – models that have had a great deal of currency amongst ACC managers in the 1980s and 1990s. Passive interventions are generally regarded as ones that require no individual action from the potential victim but instead focus on implementing environmental modifications, for example, ensuring that all hazardous machinery has suitable guards. There is also sufficient evidence that passive interventions are more effective than active ones.[125] Furthermore, safety interventions should involve different aspects and levels of the organisation, such as production and planning and key employees, as illustrated in Robson et al.'s model[123] (see Figure 4). According to the model, the top level pertains to the laws, regulations, standards and programmes put in place by governments, industries, professional bodies, and others. (Also refer to Maré and Papps.[127]).

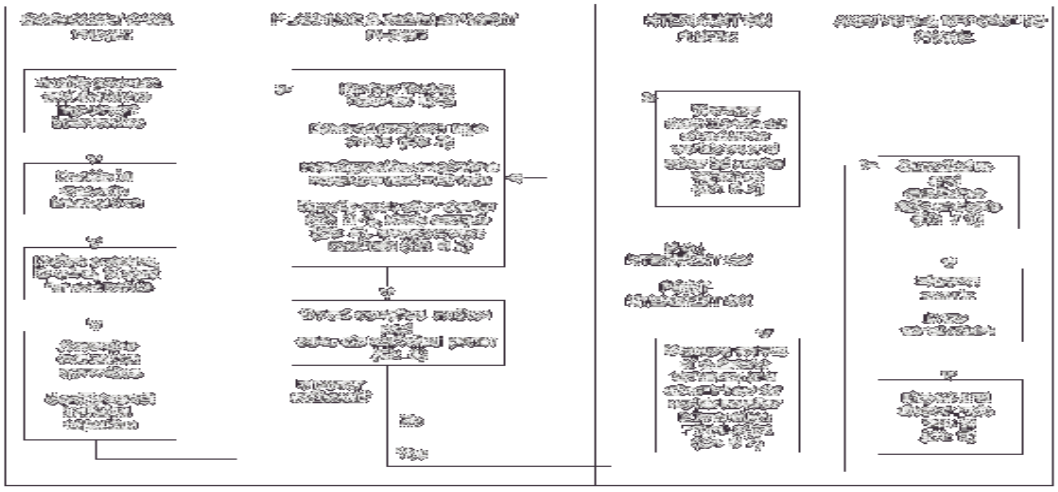


Figure 4. Model of intervention
(Source: Robson, Shannon, Goldenhar and Hale,[123] p.5)

There is also recognition that, in order for useful OHS interventions to be successful, they need to be integrated with behavioural efforts and include the co-operation and collaboration within the organisation and between industry organisations and government agencies.[128] Studies on OHS advisory and information interventions highlight the inter-relationships between the business sector, the government agency and the intermediary role played by OHS advisors and so on.[44] There is a symbiotic relationship between the OHS advisor and the business, as both

appear to benefit from each other. On one hand, the OHS advisor either augments their consultancy or association by including advice on OHS matters, or their business is entirely devoted to supplying OHS advice and information to the business sector. On the other hand, the employer or employee obtains advice and services relevant to his/her particular workplace. These sets of inter-relationships play a pivotal role in the practice and compliance of OHS and have the potential to shape the activities of each of the players, as illustrated in Figure 5.

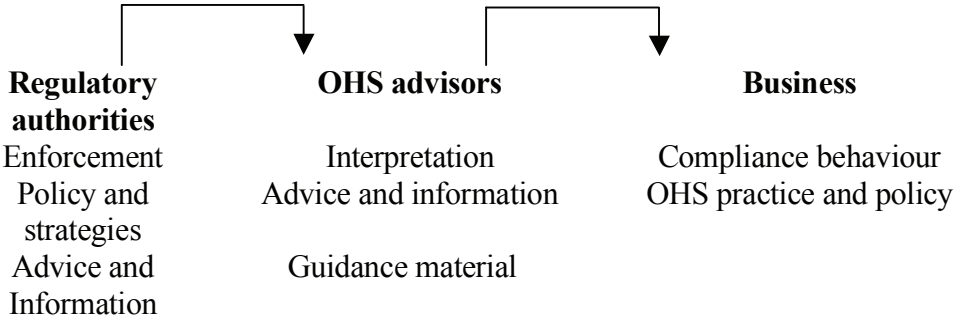


Figure 5. Inter-relationships and roles in OHS compliance
(Source: Lamm[75])

However, developing and implementing OHS interventions for businesses, particularly for the heterogeneous and geographically scattered small business sector, is difficult for a number of reasons. First, small businesses are often hard to reach and not easily motivated if the intervention has few extrinsic benefits.[45,129–131] Moreover, as stated earlier, many small businesses often have limited internal and external communication mechanisms as a result of poor management and a low level of participation in business and trade associations.[21] Also, unlike their Australian counterparts, it is rare for most New Zealand small businesses to have regular contact with an inspector from the Department of Labour.[6,75] Proactive visits to workplaces by the Department of Labour's health and safety inspectors have decreased from 26,405 in 1994/95[4] to around 5,000 currently.[5] This is of great concern, as most New Zealanders are employed in the small business sector.[43]

Yet in spite of these difficulties, there is a plethora of OHS interventions, including OHS information, for example, the Department of Labour's and ACC Improving Workplace Health and Safety series of publications for targeted groups and industries. Smallman and John[132] also note that OHS articles (both popular and scientific) spanning decades have been almost entirely concerned with inventing and promulgating OHS prevention and intervention programmes, with little scrutiny of the efficacy of such programmes. As Shannon et al.[133] note, "…many interventions in occupational safety are implemented with the sincere hope that they will work, but with a lack of solid evidence of their effectiveness [and] can sometimes make the situation worse" (p.161).

Below (in Table 11) is a list of government-sponsored and/or supported OHS programmes or interventions. It should be noted that this is not an exhaustive list and that there may be other interventions in existence that the authors are not aware of or that are not publicly available. In addition, there are a number of industry and trade association health and safety programmes and interventions, such as GROWSAFE, Site Safe and Safety@WasteMINZ, that have been omitted from this list but are mentioned in the subsequent interview data. It

should be noted that, although not listed in the table, some of the government departments, such as the Inland Revenue Department and the Department of Labour, have formed small business units as a way of recognising the interests of small businesses. Other joint central and local government initiatives, such as business.govt.nz, provide those operating in a small business with mentoring and advice on a range of topics, including OHS.

Table 11. Summary of the government OHS interventions for or relevant to New Zealand small businesses

Agency and programme title	Description
Accident Compensation Corporation	
Workplace Safety Discount Scheme	Self-employed and SMEs in high-risk industries may be eligible to receive a 10 percent discount on the work portions of their levies by recognising and controlling the main hazards in and around their workplaces. However, the Department of Labour recognises that "for businesses with employee liable earnings of less than $300,000 per annum (approximately 8 full-time equivalent staff or FTE), take-up rates are below 2 percent, and between $300,000 and $600,000 per annum (approximately between 8 and 15 FTEs), take-up rates are between 2 percent and 4 percent". The emphasis on formal management systems makes the scheme inaccessible for most small businesses because they characteristically operate an informal system of OHS management.[134]
Incentives to all workplace sectors to encourage safer working environments	One programme targets poor-performing employers while the other recognises good safety management for small employers and the self-employed.
Workplace Safety Programme	ACC has identified key high-risk industry sectors and sectors with supportive industry associations for the joint implementation or development and implementation of programmes to reduce the likelihood of work-related injuries. The focus has been also on small businesses in these sectors. Examples are FishSAFE, FarmSafe and the Cleaner Production Boat Building Project (CPBBP).
Workplace Safety Evaluation	This programme identifies employers that have a higher than average claims rate via ACC claims data and assigns them an injury prevention consultant to assist with the improvement of health and safety practices. According to Allen and Clarke,[63] most of the employers who participate in the scheme are from small businesses with an FTE count of between 10 and 30. If the employer fails to improve over a specified period of time, their ACC levies increase.
Tripartite initiatives to create and maintain workplace safety initiatives	ACC supports and co-resources tripartite incentive programmes that create and maintain safer working environments, particularly small workplaces (for example, providing guidance material such as *Improving workplace safety and health for small businesses*).
Civil Aviation Authority	
Often in conjunction with the Department of Labour, workplace initiatives concentrate primarily on stress and fatigue in which information and training are targeted at the small operator. CAA has also developed guidance material, for example, *Safety guideline: Farm airstrips and associated fertiliser cartage, storage and application* aimed at the small operator.	
Department of Labour	

Agency and programme title	Description
Approved codes of practice and other guidance material	The Department of Labour is responsible for assisting duty holders, including small businesses, to comply with the performance-based standards contained in the HSE Act. This is primarily facilitated via the provision of information and education, including approved codes of practice and guidance material to support best practice, which are accessible electronically mainly through the Department of Labour's website. However, the most recent NOHSAC technical report by Gunningham and Associates[135] questions the efficacy of the codes, given that 17 of the 29 documents are more than 10 years old and, therefore, unlikely to reflect current expectations of best practice.
Support for small business	The Department of Labour provides information and assistance to small and medium-sized enterprises (SMEs) and the SME sector on workplace issues and opportunities. The Small Business Information Unit provides SME-targeted workplace practice information with and through Business NZ networks, for example Productivity Tool Kit workshops with Chambers of Commerce.
Workplace Productivity Agenda	The Workplace Productivity Agenda is a tripartite initiative that aims to lift productivity. Commissioned research into linking OHS and productivity in which small businesses were part of the sample.
Workplace Health and Safety Strategy for New Zealand to 2015	The Workplace Health and Safety Strategy is a framework for action that sets goals to improve OHS and productivity. Outcomes of this strategy have been partnerships with other central and local government organisations as well as industry and employer associations, and trade unions, for example, the Cleaner Production Boat Building Project.
Better Work Working Better (BWWB)	BWWB sets out the government's aspirations for high-quality employment in productive and innovative industries, regions and businesses that drives sustainable economic growth. Links with WHSS.
HSE/HSNO/IPRC Acts Interface Project	This was a multi-government agency review of the interface between three pieces of legislation – the Health and Safety in Employment Act, the Hazardous Substances and New Organisms (HSNO) Act and the Injury Prevention, Rehabilitation, and Compensation (IPRC) Act. The project team sought feedback from various businesses and industry organisations about compliance with health and safety legislation. There was a particular emphasis on the small business sector.
ILO Convention 155	New Zealand has recently ratified International Labour Organisation Convention 155 on occupational health and safety and the working environment. This positive action signalled New Zealand's commitment to improving health and safety in the workplaces. The Convention calls for a coherent national policy on occupational health and safety compatible with New Zealand's domestic law, policy and practice.[7]
Hazard Handler	According to the Department of Labour website,[136] "The Hazard Handler is designed to help small businesses kick-start their hazard management system. It provides practical information on how to

Agency and programme title	Description
	identify and handle both generic and industry-specific health and safety issues."
Environmental Risk Management Authority (ERMA)	
HSNO information	Information on chemical handling and emergency evaluation has been designed for industries with a high concentration of small businesses, for example, and emergency response plan for service stations, HSNO compliance guides for the printing industry and guidance material on OHS in the surface coating industry.
Land Transport New Zealand	
Operator Safety Rating Rule	The Operator Safety Rating Rule sets out categories of safety performance for transport service operators and approved taxi organisations (ATOs). Information and training are targeted at the small operator.
Stress and fatigue	Often in conjunction with ACC, LTNZ workplace initiatives concentrate primarily on stress and fatigue (for example, *Health and fatigue: An introduction programme for drivers of heavy vehicles.* LTNZ has also been working more closely with industry associations, particularly the NZ Road Transport Association. Information and training are targeted at the small operator.
Local authorities	
Regional and territorial local authorities also play a role in developing and driving health, safety and environmental initiatives. An illustration of these initiatives can be seen in Waitakere City Council's Cleaner Production projects focusing on printing and boat building.	
Maritime New Zealand	
Fishing Industry Safety and Health Advisory Group (FishSAFE)	FishSAFE is an industry-led partnership between Maritime New Zealand, ACC and the commercial fishing industry. It acts as a 'clearing house' for a wide variety of issues relating to health and safety in the commercial fishing industry. There has been an emphasis on small businesses in this industry.
Development of an industry-led website for fishing industry safety and health matters	The FishSAFE website has been established to communicate the work of FishSAFE and ensure that resource material is available to the wider industry.
Industry-based solutions to health and maritime safety issues	Groups made up of employer/employer/researcher interests are convened for different sectors and act as a focus for OHS awareness and to develop industry-based solutions to key risks. For example, fatigue and stress have been identified as an issue.
Development of activity-specific codes of safe working practice on board ships and associated injury	Maritime New Zealand, in partnership with ACC, the Seafood Industry Training Organisation and the commercial fishing industry, has developed guidelines for health and safety on board small commercial fishing vessels and associated specific health and safety training, which is recognised by the NZQA.

Agency and programme title	Description
prevention training	These are used as the basis for the development of guidelines for the domestic passenger and non-passenger fleet, and similar guidelines have been developed for the international fleet.
Development of a range of targeted educational and support material for maritime health and safety	Guidance material is developed based on identified needs and target audiences. This will form part of a wider safety communications strategy currently being developed.
Ministry for Economic Development	
Small Business Advisory Group	This group provides ongoing advice to the Ministerial Group on Small Business on any issues affecting small and medium-sized enterprises. It identifies issues, suggests priorities, explores solutions and provides assistance and advice to government departments on dealing with SMEs and provides suggestions on ways for enhancing SME and government agency performance. Have worked with LTNZ in small business campaigns.
New Zealand Fire Service	
Fire safety for small businesses	Regular information, advice and enforcement campaigns aimed at the small business sector, for example, *Fire safety in small tourist accommodation businesses.*[99]

4.3.1 Evaluations of OHS programmes and interventions for small businesses

Most of New Zealand's OHS research and preventive initiatives are funded by ACC, the Health Research Council, the Department of Labour and NOHSAC. While, anecdotally, a handful of evaluations have been completed on specific OHS programmes and interventions, to date, very few are publicly available, and even fewer are available from ACC. The most recent evaluation/review (and one of the few examples) to be undertaken was on Land Transport NZ's fatigue management systems trial.[137] There are even fewer (if any) evaluations on OHS interventions for small businesses. Nonetheless, it is possible to gain an insight into the efficacy of the OHS programmes or interventions for small businesses. For example, although the ACC has yet to publicly release Otago University's IPRU's evaluation report on the FarmSafe programme, there is a journal article on stage one of the evaluation.[138] The Transport Accident Investigation Commission reports provide regular, extensive critiques of the Safe Ship Management programmes, in which the lack of regulatory integrity and enforcement are recurring themes. Overall, there are generally a number of difficulties associated with attempts to ascertain whether or not specific OHS programmes or interventions designed for small businesses have been successful.

First, there is a lack of rigorous evaluations on New Zealand OHS programmes and interventions, primarily because, when the initiative is developed, there is little or no provision for any evaluation to be undertaken. Instead, there is a reliance on subsequent trends in injury and illness data specific to the hazard or industry to become the de facto measure of the success or failure of the OHS initiative.

Second, as stated earlier, most of the OHS programmes and interventions were designed around industry-specific workplace hazards and thus the focus of the resultant evaluation (if indeed there ever was one) will be on the success or failure of injury and illness reduction rather than the uptake of the initiative by the small business community. While it could be argued that reduced hazard-specific injury and illness rates have some relevance to the small business sector given their dominant presence in New Zealand business, research clearly indicates that capturing reliable injury and illness data from small businesses is extremely difficult.[45,114] Nonetheless, there is indication that some industry-specific initiatives have done well, as Morgaine et al.[138] stated:

> This process evaluation indicates the [FarmSafe] programme was successful in achieving widespread participation in a safety training programme within an industry that is predominantly one of self-employment or small businesses, and that is renowned for its independence and geographical isolation. (p.359)

The third problem is that the information regarding OHS programmes and interventions is gathered, assembled and controlled by those with a vested interest in their success. If an evaluation has been completed on a particular OHS initiative, the reports are held by the respective agencies or associations, and few, if any, have been released publicly. More disturbingly, injury data that could provide some indication of the merits of an OHS initiative are either very dated (typically five years old), inconsistent or meaningless, or all three. In addition, it is difficult to identify from the information available what was the criteria of success and how it was to be measured; that is, are the success criteria based on a reduction of injuries and illnesses, or a higher level of compliance, or increased participation in a training programme, as was the case with the FarmSafe programme?

The fourth problem concerns the inherent biases in this study, which have manifested themselves in two ways. The first bias that occurs whereby the interviewee is keen to give answers that he or she believes will be palatable to the interviewer. The second inherent bias is that, as the stakeholders invariably had a vested interest in the success of the OHS initiative, critical comments were difficult, if not impossible, to obtain. It is for this reason that a triangulated approach to data collection was adopted in the present study. In particular, data from surveys and interviews were collected from the different parties involved in or with knowledge of the OHS initiative. Government annual reports and Transport Accident Investigation Commission's accident reports were also used to identify issues with the OHS programmes and interventions (see Section 4.4).

The final problem in determining the success or failure of small business OHS programmes and interventions is the frequent absence of intervention research principles outlined in Appendix E of this report. As stated earlier, while there are distinct phases in the process of implementing an OHS intervention and its evaluation, it is crucial that an intervention and its evaluation be planned simultaneously and that the evaluation design and its methods be decided before the intervention is introduced (see Robson et al.[123] p.6). Moreover, the evaluation must take place in tandem with the implementation of the initiative in order to inform the development of the initiative; that is, there must be an integrated approach to evaluations/effectiveness research.

In summary, what is often overlooked are the reasons why OHS programmes and interventions are developed, implemented and maintained. Although there is still a need for more research in the area, it is suggested that government agencies and small businesses can have different catalysts and drivers for introducing OHS programmes and interventions although they may share the same end goal. Furthermore, while there are a number of OHS programmes and interventions relevant to the New Zealand small business sector, it appears that there are inherent problems ranging from the subjectivity of the evaluators to a focus on the industry as opposed to the small business. There have also been few rigorous evaluations undertaken, in spite of the fact that the literature clearly outlines the form the evaluations should take and the necessary process to be followed. Finally, the OHS programmes and interventions aimed at the small business are overwhelming concerned about providing electronically accessible, comprehensible, guidance material. The question is: Do small businesses know where to access the information and how useful is this information?

4.4 Stakeholder perceptions of OHS practice and efficacy of interventions in relation to OHS in small businesses

Given the lack of evaluation of small business OHS interventions in New Zealand, the purpose of this section is to gauge stakeholder perceptions of how small businesses manage OHS, and the efficacy of OHS interventions or programmes. The stakeholders that were consulted included government agencies, interest group representative bodies and industry organisations (for a list, see Appendix C). It should be noted that the industry organisations were selected to achieve consistency with the sectors that NOHSAC's request for proposals for the present report identified for the illustrative small business case studies that are described in Section 5.

The primary data for this study were gathered via semi-structured face-to-face and telephone interviews and an emailed questionnaire. The content of the questionnaires was informed by secondary data, such as reports, manuals and government statistics. The common themes from the interviews are presented below. Appendix D presents an example of a thorough case study on the commercial fishing industry. It is presented as a way of highlighting, firstly, the different and complex layers of New Zealand OHS programmes and interventions and, secondly, the problems associated with locating the evidence-based rationale and efficacy of such programmes and interventions.

4.4.1 Common themes from stakeholder interviews

A number of common themes emerged from the interviews with the stakeholders. These are broadly discussed below in terms of the stakeholders' general perception of the key issues for small businesses in relation to health and safety, how these differed from large organisations and the success factors necessary for OHS programmes for small businesses. Where appropriate, the literature that supports the key themes is also presented.

Key issues for small business management

- *Financial pressures*, *including tight margins*. Examples of rising costs were fuel and labour costs. Over the past few years, the rise in the value of the New Zealand currency has put an added financial pressure on exporters. According to the interviewees, the recent dramatic rise in fuel costs has hit their small business members harder compared to those operating larger firms, as they find it more difficult to absorb such costs. Stakeholders noted that the downturn in the economy would also impact more on certain industries than others, such as the marine/boat building industry, which supply luxury goods.

- *Barriers to starting up a business.* Stakeholders stated that it was increasingly difficult to enter their industries because of the increasing set-up costs involved. Interviewees argued that this, in turn, has had an impact on the ability of the fledgling businesses to provide a safe and healthy workplace.

- *Compliance and enforcement.* There was general acceptance that regulations were essential in order to provide a benchmark of minimum standards and to ensure that businesses were operating on a 'level playing field'. While most of the interviewees identified regulatory inconsistencies and the lack of enforcement as a major problem, others noted that, even though there was the "myth of arbitrariness of OSH inspectorate", few of the small business owners had ever experienced a visit from a Department of Labour (OSH) inspector.

  While all interviewees agreed that there were costs associated with complying with health, safety and environment regulations, few were able to quantify it. Nonetheless, in the marine industry, it is estimated that it costs at least $1,000 to kit-out each employee with the basic protective gear. Other interviewees estimated that installing health and safety measures (for example, ventilation) could range from $15,000 to $30,000.

- *Skill shortages*. All interviewees, including those from the Employers and Manufacturers Association (EMA) and the Engineering, Printing and Manufacturing

Union (EPMU), expressed concern about the severe skill shortages and how these shortages have negatively impacted on workplace health and safety. Modern Apprenticeships were also criticised for not providing the tacit knowledge – as one interviewee noted: "Many of the young people who are coming into the industry just don't have the basic skills; the basic skills are just missing and that includes health and safety skills."

- *Controlling mobile workers.* The industries included in this study all employed mobile workers. The stakeholder interviewees stated that controlling the activities of mobile workers as well as the hazards that these workers encountered were major and perennial issues.

Differences between the characteristics of large and small businesses

- *Lack of management acumen*. Small business employers typically have a skill in a particular trade or service but have little knowledge of the rudiments of running a business. As earlier research shows, employers must not only develop a range of managerial skills that encompass all aspects of the entire business but also must perpetually seek a balance between administration, overseeing production and the delivery of services as well as attracting more customers.[99] Stakeholder interviewees argued that the ability to manage all these functions, including OHS, is critical for the survival of the business.

- *Absence of health and safety systems.* There was general agreement amongst stakeholder interviewees that small businesses typically have informal systems rather than formal systems, including health and safety. The main reasons given for the absence of formal systems was that the costs involved precluded many small businesses and a lack of both expertise and time, given that implementing health and safety performance-based systems underpins not only the Health and Safety in Employment Act but also other safety regulations, such as the Land Transport NZ operator safety rating. However, it was noted that many of the quality systems adopted by small businesses (for example, ISO) commonly had a health and safety component.

- *Economies of scale*. Because of their size, it was thought that small businesses were at an economic disadvantage compared with larger firms. This meant that their ability to implement health and safety measures, such as expensive extractor fans, was hampered. While there is some research supporting this view,[139] others have refuted this argument as being too simplistic.[140]

- *Lack of training*. It was thought that small businesses find providing formal training difficult, as it is often costly and will initially reduce organisational performance while people are on the training courses. Interviewees commented that it is more than likely that small business employers will rely on supervision and established apprenticeship schemes to train their staff. There was also disquiet regarding the proliferation, variation of quality and lack of standardisation of OHS courses. Several interviewees noted that there are some unscrupulous health and safety consultants who play on the fears of small business owners in order to obtain expensive training contracts.

However, the more established and/or accredited industry-based training programmes, such as those offered through FishSAFE, FarmSafe and GrowSafe, as well as EMA and trade union

health and safety representative training, were seen by all interviewees as extremely valuable for a number of reasons. First, such programmes were seen as having a beneficial impact on lowering the level of work-related injuries and illnesses. Second, interviewees commented that these training programmes generally raised the skill levels and confidence of the participants. Third, the courses provided a platform for establishing networks and a forum for discussing workplace health, safety and environmental issues within a non-competitive environment.

Success factors of OHS initiatives

In spite of the difficulties in obtaining objective evidence of the efficacy and veracity of the OHS programmes and interventions, the findings revealed a number of common factors that were perceived to contribute to the success of the OHS initiative:

- *Grassroots/community commitment*. Interviewees noted that, in order for the OHS initiative to have an impact on the target group, grassroots commitment is required. This finding is supported by the literature.[141–143] Such commitment can be fostered in a number of ways – by government agencies (for example, Cleaner Production Project) or industry association (for example, GROWSAFE), or a collaborative approach (FarmSafe). There is anecdotal evidence that involving the employers and employees as well as other interested parties, such as their family members, can have a powerful impact on the health and safety within the industry. This approach has been credited in part for successfully reducing the level of injury and illness in the Queensland farming and construction industries.[144]

- *Mentoring*. One of the recurring themes to emerge from interviews with the marine industry stakeholders was the positive effect of mentoring, which was a crucial feature of the FishSAFE programme. The use of mentors in OHS initiatives is well documented in the literature. Respected industry stalwarts who have both industry experience and knowledge and commitment to health and safety were engaged to act as mentors within the industry, working alongside both employers and employees to improve their workplace health and safety. While mentoring is resource-intensive, interviewees noted that, in industries in which the dominant management style is command and control, and where the work is mainly mobile, such as the commercial fishing industry, this approach works well.

- *Succession.* Many of the New Zealand OHS initiatives were reliant on one or more protagonists who worked either within the public sector or industry. It was clear that the continuation of the initiative was reliant, in part, on their support and drive. However, unless there is a succession plan to replace key people, it is likely that any OHS initiative will stall, as illustrated by the Waitakere City Council's Cleaner Production Boat Building Project.

4.4.2 Discussion of interview findings in context of the academic literature

OHS programmes and interventions for small businesses

The findings from the literature review and the interview data show that, instead of targeting small businesses per se, most of the OHS programmes and interventions in New Zealand have an industry focus and are driven by a specific hazard, for example, solvent exposure in the printing industry or tractor safety in the farming industry. However, the OHS programmes and

interventions identified in this study that had relevance to the small business sector can be categorised as:

- government-led initiatives – for example, Maritime New Zealand's Safe Ship Management and Waitakere City Council's Cleaner Production
- joint partnership initiatives – for example, FarmSafe
- industry-led initiatives – for example, GROWSAFE.

These categories, however, do not depict the changes that constantly occur as the OHS programmes or interventions evolve and as their protagonists leave and are replaced. Also, what is often overlooked is that many of the initiatives progress through the three categories, from being a government-led initiative to one that is driven primarily by the industry.

How OHS initiatives progress from a government-led initiative, to a joint partnership and then to an industry-led initiative can be best illustrated by the Waitakere City Council's Cleaner Production programme, in particular, their Boat Building Project, which is described below.

The Council's Cleaner Production programme originally started in 1996 as a long-term strategy to reduce the level of waste and hazards within high-risk industries. Using the same format as the Printing Project, those involved in this local government-led programme went on to develop the Boat Building Project in 2000. The aim of the project was to target the boating industry, which was seen as being a hazardous industry comprising of mostly small and medium-sized businesses, many of which were 'poor performing' in the area of health and safety. The boating industry also had a substantial presence in the Waitakere area. According to Waitakere City Council interviewees, the overarching aim of the project is to promote safer workplaces and healthier environments in the boat building industry by promoting health, safety and environmental best practice. Although compliance is encouraged, the project focuses more simply on promoting best practice to protect both employees and the environment.

While this programme was originally initiated by Waitakere City Council (and, to date, the council is still driving it), ACC and the Department of Labour also became involved in the project in 2002, together with the Marine Industry Association and a selection of boat building businesses. This partnership gave those involved in the project the impetus to provide forums for discussion, develop a set of guidelines and create an industry-based resource manual.

However, central and local government funding for the project was finite, and it was always the intension of the Waitakere City Council, ACC and the Department of Labour to pass the responsibility of maintaining and developing the project back onto the industry – namely the Marine Industry Association. Unfortunately, progress on the project has stalled. Central and local government staff who were involved in progressing the project have subsequently moved on, and the industry association has yet to take responsibility for it.

The role of the stakeholders/protagonists in OHS initiatives

While there are some exceptions,[145] generally, the literature is ambivalent regarding the role stakeholders/protagonists play in developing and implementing OHS programmes or interventions in small businesses. As noted above, stakeholders in this study comprised central and local government agencies and industry associations. However, it was evident from the interviews that government agencies, industry associations and, more precisely, key

protagonists within these bodies have a critical part in the success or failure of the OHS initiatives. However, the findings reveal that the role stakeholders play in developing and implementing OHS initiatives in small businesses is more complex than simply their enthusiasm for a particular initiative. Interviewees stated that their involvement in an OHS initiative was reliant on:

- senior management support
- good collaboration with interested parties
- the allocation of adequate resources, such as adequate financial support and time allocated specifically to the project
- the expert knowledge of the industry and OHS.

Although the research in this area is under-developed, the interview data indicates that the absence of any one of the above factors has a detrimental impact on the OHS initiative.

When asked about the advisory services they provide small businesses, the stakeholders believed that mentoring, site visits and information posted on the web were found to be most useful. Small business interviewees also added that information posted on the Department of Labour website was particularly useful as it acted in general as an efficient 'one-stop shop'. The ACC website, however, was singled out by employer and trade union interviewees as not providing adequate or useful information.

4.5 Strategic issues for New Zealand OHS practice, programmes and interventions in relation to small businesses

On review of the literature and key themes from the stakeholder interviews, there are several issues that have strategic implications for efforts to improve OHS practices in small businesses in New Zealand. Key underlying issues include the following:

- *The lack of reliable OHS data*. We still have no idea of the extent of the injuries, illnesses and fatalities within the New Zealand small business sector. There is no coherent data collection strategy for this sector, nor is there any compulsion to standardise the data and apply the ANZISC definition of 'a small business' to government statistics. Lumping different industries together (for example agriculture, forestry and fishing), some of which have the highest occupational fatality rates in New Zealand and include a large proportion of small businesses, makes industry analysis problematic.

- *Lack of rigorous evidence ipso facto a lack of transparency.* Compared to other countries, there is a dearth of publicly available government information, such as research reports, evaluations or discussion documents, on the topic. While some government agencies have endeavoured to make available information on a range of OHS topics, other agencies have released few reports. Therefore, it is difficult to ascertain the rationale for developing an OHS programme or intervention or its efficacy. Moreover, the paucity of OHS information available from government agencies is unlikely to be current and is typically at least 3–5 years old.

- *The lack of sustainability of OHS programmes and interventions aimed at the small business sector.* One of the major concerns resulting from the stakeholder interviews was that, while there was an initial activity to establish an OHS programme or

intervention, in some cases, this was difficult to sustain. One of the main reasons for an OHS programme or initiative to falter was that, once key protagonists were no longer involved and suitable replacements were not found, it became difficult to sustain, as seen in the Cleaner Boat Production Project. Regular reviews of the OHS programme or initiative and ways of ensuring that there is continual commitment from all parties are essential ingredients.

- *Fit for purpose?* What was never clear from the findings in this segment of the project was whether or not the OHS programme or intervention actually fitted the purpose for which it was designed and, in particular, whether national and regional differences were taken into consideration. The antecedents of many of the New Zealand OHS programmes or interventions can be traced back to overseas. However, what is not clear is whether an overseas OHS programme or intervention applied to the New Zealand small business sector is an appropriate fit. The differences between FarmSafe and FishSAFE were primarily around engagement, and some thought had been given to this aspect of these programmes. However, there is no evidence that any consideration was given to regional differences when rolling out these or any other programmes or interventions.

- *Limited content knowledge and integration in government departments*. Occupational health and safety is a complex and multi-disciplinary discipline. Prior to the early 2000 restructuring of Department of Labour, it was a discrete division – the OSH Service. The interviewees, with years of OHS experience, were perturbed at the limited content knowledge of OHS amongst civil servants responsible for this area. One of the major reasons offered by the interviewees was the high staff turnover. The more experienced interviewees also noted that such limited knowledge of both OHS and the small business sector are likely to have a profound effect on the viability, quality and sustainability of OHS programmes or interventions aimed at this sector. Furthermore, industry representatives repeatedly commented that there is a need for better integration between the various government agencies when tackling OHS in small businesses. It was noted that, typically, the successful programmes or interventions were ones where all the parties (government agencies, industry associations, employers and employees) worked in tandem to reduce the level of injury, illness and fatality rates in small workplaces.

4.6 Summary

In summary, this review of New Zealand's OHS practice, programmes and interventions in relation to the small business sector has highlighted several benefits, such as raising the level of OHS awareness in this often impenetrable sector. However, it has also exposed a number of significant issues, in particular, the lack of evidence about some fundamental questions:

- What is the extent of work-related injuries and illnesses in the New Zealand small business sector?
- What was the rationale for developing particular OHS programmes or interventions?
- What worked well in the OHS programmes or interventions and what did not?

The health and safety characteristics and key issues facing small businesses identified by the stakeholders are already well represented and documented in the literature. What is not covered in the literature is any indepth critique of New Zealand's OHS programmes and interventions for small businesses. The present report indicates, nonetheless, that New

Zealand's OHS programmes and interventions can be grouped under three headings – government-led initiatives, joint partnership initiatives and industry-led initiatives. Typically, these initiatives will change and progress from government-led initiatives through to industry-led initiatives. There also appear to be a number of factors that may influence the success of the OHS programmes or interventions – grassroots/community commitment and/or mentoring and a succession strategy to ensure the continuation of the programme/initiative. However, there is an underlying assumption that a cohesive community wanting to be involved in an OHS initiative already exists, which may not be the case. Although mentoring can be beneficial, it still requires a great deal of resources and commitment, which may not be possible.

Another key factor in the success or otherwise of the OHS programmes or interventions is the stakeholders/protagonists' commitment and expertise. However, in order to develop, implement and drive the OHS programmes or interventions, these critical players are reliant on the support of management, good collaboration with interested parties and allocation of adequate resources.

What is not clear, however, from the interview data is whether there are problems when applying overseas OHS initiatives or OHS initiatives designed for large businesses to the New Zealand small business sector. What is also not fully explained from the findings is which is more appropriate for the small business sector – government-led initiatives, joint partnership initiatives, or industry-led initiatives. Therefore, it is evident that more research in this area is required.

5. Case studies illustrating OHS practice in New Zealand small businesses

5.1 Introduction

This section describes nine illustrative case studies of small businesses from the following industry sectors: agriculture, boat building, civil aviation, fishing, forestry, health care, horticulture, residential construction, and transport. The purpose of the case studies is to illustrate:

- the drivers for the establishment of health and safety
- how health and safety is integrated into the business and daily activity
- the businesses' formal plans for the management of health and safety
- the effect of any occupational disease and injury
- an indication of what the businesses know about OHS legislation and programmes.

The aim was to select a small business from each industry sector that had given some consideration to occupational health and safety; that is, to select a business that knew about health and safety and that had integrated some form of health and safety management into their daily business. Initially, the industry associations or other stakeholders in the nine industry sectors were contacted by telephone or by email and asked if they could provide contacts to small businesses in their industry sector. Industry associations from four of the industry sectors (residential construction, horticulture, boat building and health care) provided us with small businesses to contact. Out of these contacts, three agreed to participate in the project. The ones from health care declined. To obtain the remainder of the nine case studies, we contacted businesses recommended by ACC or by professional colleagues and randomly selected some from the Yellow Pages business directory. Table 12 shows how the nine case studies were selected.

The cases are based on semi-structured interviews conducted with the owner-manager of each small business. The data obtained during each visit were summarised and sent back to each owner-manager interviewee for comment and verification of accuracy before the final case study report was prepared. The case study descriptions are the researcher's representation of the information obtained during the interview.

The main issues related to health and safety from each case study are summarised at the end of each case. These issues are purely based on the information we have gained from the interview. Unlike some other studies (for example, Hasle et al.[146]), we have not generally been able to assess or evaluate the veracity of the interviewees' assertions, for example, whether or not the owner underestimates the risks related to the activities in the business. It is also acknowledged that employees are likely to have different perceptions on the key health and safety issues for the business and how they are managed.

The case study reports interpret the information obtained during the visits using the framework model of Hasle and Limborg[20] in order to provide a consistent structure for analysis and to help in identifying useful industry-specific drivers, barriers and strategies for successful implementation of good OHS practices (see Figure 1).

Industry sector	Method for selection
Agriculture	Friends – the business was considered to have given occupational health and safety some consideration.
Boat building	Boating Industry Training Organisation – the business was considered to have given some thoughts to health and safety.
Civil aviation	Yellow Pages – no information about the business's health and safety.
Fishing	NZ Fishing Industry Guild and key experts on the fishing industry.
Forestry	ACC – the business was considered to have given some thoughts to health and safety.
Health care	Yellow Pages – no information about the business's health and safety.
Horticulture	Industry association (Hawke's Bay Fruit Growers Association) – the business was considered to have given some consideration to health and safety.
Residential construction	Industry OHS training provider (Work Safe) – the business was considered to have good health and safety management.
Transport	Yellow Pages – no information about the business's health and safety.

Table 12. Method of selection for case studies

5.2 Case studies

5.2.1 Agriculture

Description of the business and its environment

This small business produces dairy milk for Fonterra. Numerous activities are performed daily on the farm to achieve this goal, including milking the cattle twice a day, loading and distributing silage by tractor, moving stock by quad bike or foot, repairing gates and fences, and maintaining the operation and hygiene of the milking shed. Tasks that are conducted less frequently mainly involve moving the irrigator dispenser and controlling weeds and pastoral growth via spraying and removing the tops off the grass.

The business is owned and operated by a husband and wife who have farmed the property for 10 years and owned it for five. The husband (who we have referred to as the farmer) is responsible for the manual tasks on the farm while the wife takes care of the administration. They are supported by one full-time employee who milks the cows and assists with manual tasks and a part-time relief milker. They are considering employing one more permanent staff member, but have no desire to significantly expand the operation, which would require more workers. This would vastly increase the amount of administration required and make OHS issues difficult to deal with. Keeping the business small and manageable allows the farmer to

spend time on the farm and with his family, which are the most positive aspects associated with working in the industry.

The farmer suggested that there were a number of issues that negatively affect the business. The increased cost of fuel and electricity were cited as the most significant, as they erode profit margins, even though dairy farmers were currently receiving a sizeable pay-out for milk. Adverse weather conditions, especially wet seasons and droughts, were stressful events because they compromised his ability to feed and ensure the health of the cattle.

Integration of health and safety in the business

The farmer asserted that the main hazards he and his workers are exposed to include: riding the all-terrain vehicle (ATV); cattle in the yards, particularly the heifers when they are first introduced to the milking shed; lifting and moving calves, as he has a sore back after 20 years of lifting heavy objects on the farm; and contracting zoonoses. Chemicals are not considered a hazard because potential harm is perceived to be mitigated by use of personal protective equipment.

The farmer uses a number of measures to minimise the likelihood of harm occurring to people working on the farm, particularly via selection of employees, staff training and maintaining or purchasing new farming machinery. When the farmer hires new employees, health and safety is a major consideration, and he chooses those who he perceives to have an ability to learn and listen to instructions, are not 'cocky' and have some farming experience. The farmer spends a lot of time teaching new staff about health and safety via on-the-job training and experience. Employees are only permitted to do certain tasks once the farmer is confident that they are sufficiently trained. For example, the relief milker is not allowed to ride the ATV or the tractors, and it has taken the farmer three years to train his full-time milker to a point where he is able to run the farm without supervision. In addition, OHS improvements are made periodically, such as cleaning and maintenance of the milking shed and the purchase of two new tractors, as the old ones were becoming unsafe and unreliable.

However, OHS and hazard management is reactive and mainly initiated by near misses and injuries. For example, the milker was nearly pinned between a pole and the tractor after the vehicle started to roll forward on a gentle incline because the handbrake had not been applied. Following this incident, it is now a rule that the handbrake must be applied when the tractor is stationary. They have only had one other significant injury over the last 10 years, involving a knock to the head, which required hospital treatment. The only minor injury that was noted was a deep cut to a finger. None of the accidents or near misses were recorded in an accident register or reported to authorities.

The business does not have a formal written OHS management system, and the owner-managers are not aware of the HSE Act or what their obligations entail. They have a Fonterra manual that also contains OHS aspects, but it is mainly focused on hygiene and product quality. The farmer is responsible for updating the Fonterra manual, which is stored in the milking shed. His wife looks after administrative tasks concerned with health and safety, such as gaining an approved handler certificate.

Drivers and influencers

The farmer is motivated to attend to health and safety to prevent undue harm to workers and to minimise the likelihood of lost time injuries. Family and peers are important influencers and are consulted when issues arise. Generally, it seems that health and safety knowledge and

experience is handed down via the more experienced peers in the industry. They would also consult Fonterra if it concerned the milking shed. They are aware that they can contact the ACC or the Department of Labour; however, they have never felt they needed to, but would try to contact a person recommended by others.

Knowledge about health and safety legislation and OHS programmes
The legislation and regulations that have significant impact on the business include: the requirements stipulated by Fonterra, which audits the business once a year to ensure the manual is updated, the shed is clean and that chemicals are stored securely; the Resource Management Act, which the regional council audits the farm on every three years; and approval from the veterinarian to administer drugs to cattle. The farmer and his wife were also aware of the ACC and Hazardous Substances and New Organisms Act, because she has an approved handler certificate. Although, not aware of the HSE Act as such, the wife had vague awareness of some of their obligations under the Act, because of her employment at a large pharmaceutical company.

They were aware of FarmSafe, but the wife has not been able to attend the course yet because of work commitments. However, she plans to attend the next course in order to qualify for a reduction in their ACC levy, which they think is too high for their business. They also want to know what regulations their business must comply with, particularly with a booklet containing simple information on the requirements; what documents should look like; and a person to contact for further help.

Summary of the main issues

Integration of health and safety in the business
- No formal paper-based OHS management system.
- Owner-employer relationship is crucial in OHS management.
- OHS management is oral and experienced-based.
- Uncontrollable and unpredictable 'hazards' are considered hazards, for example, cattle, as opposed to controllable hazards like chemicals (use PPE)
- Hazard control is reactive.

Drivers and influencers
- Stock health, requiring tasks to be carried out every day, any time.

Knowledge about health and safety legislation and OHS programmes
- Little awareness of health and safety legislation.
- Family and peers are the preferred advisor.

5.2.2 Boat building

Description of the business and its environment
This small business primarily assembles inflatable boats. It involves the assembly of eight different types of boat of various sizes, made of two different materials, including aluminium and fibreglass. The component parts are manufactured by subcontractors. The business also imports and sells safety equipment, such as lifejackets.

The owner, who has a background in accounting, only purchased the business a year ago and employs 13 staff. The business was established in the 1990s and has only recently moved to

new premises, which allowed for improvements in the production process. However, they could not afford to mechanise the process and provide a safer working environment due to tight profit margins.

Integration of health and safety in the business
The owner suggested that the main health and safety hazards in the business included lifting and moving heavy and awkward objects, and solvent exposure. Injuries sustained as a result of using tools have decreased since the manufacture of components was subcontracted out.

The owner sees good health, safety and environment systems as a way to reduce waste and prevent damage, injuries and illnesses, which therefore saved money. He sees ISO 9000 as a way of integrating health and safety in a small business.

One of his main tasks is to facilitate the improvement of the health and safety culture at the business. This is related to his perception that long-serving employees pass on bad safety habits to newer staff. In order to help improve the situation, the supervisor was sent on a Site Safe training course, and one of the agenda items at their weekly meetings is OHS. Moving premises also gave him the opportunity to work with the employees at improving the working environment. They analysed tasks, redesigned and adjusted work stations to a more appropriate height and purchased superior personal protective equipment

Drivers and influencers
As an organisation promoting the use of and selling safety equipment, the owner wants the business to be exemplary in all health and safety areas, suggesting that, "We take health and safety seriously, as it not only makes economic sense, but it also is our business."

The owner said that the Employers and Manufactures Association was a good source of information. However, its high membership fees have precluded him from being a member and attending their seminars, even though he thinks they could be useful.

Knowledge about health and safety legislation and OHS programmes
The owner sees the OHS regulations as commonsense. He uses the Department of Labour website to retrieve OHS information. The business has not been inspected by the Department of Labour or contacted the Department directly.

The owner finds it difficult to deal with ACC because of the high turn-over of ACC administrators and case managers. It creates a perennial tension between the employer, the employee and ACC.

The owner was not aware of any government OHS initiatives for small businesses, apart from the regional council's attempts to implement a recycle system. However, he perceived the problem was the lack of consistency with such programmes and lack of linkages between the different agencies and their programmes. The business is not directly involved in the above programmes.

Summary of the main issues

Integration of health and safety in the business

- Bad safety culture is passed on from the more experienced employees to new employees.

- Quality management systems can be used to integrate health and safety.

Drivers and influencers

- Tight margins were a barrier for mechanisation and improvement of OHS.

Knowledge about health and safety legislation and OHS programmes

- Communication consistency between the various authorities influencing OHS is crucial.
- No awareness of OHS programmes targeted at small business.

5.2.3 Civil aviation

Description of the business and its environment

This small civil aviation business sprays agricultural chemicals over farmland and crops by helicopter. The aircraft repeatedly flies at low levels over the land to dispense agrichemicals held in under-slung tanks. The helicopter can dispense chemicals for between 5–10 minutes before it has to briefly land for the tanks to be refilled by the ground crew (loader-drivers) whilst the rotors are still turning.

The business was established three years ago by the owner-manager, who pilots the helicopter. He has 13 years' flying experience and has been in the industry much longer than this, having worked his way up in the hierarchy from a loader-driver through to a certified helicopter pilot. He is supported by three employees, including two ground crew and one part-time administrator. The business has around 350 customers; mainly farmers but also a few large institutions, such as a city council.

It is a very costly business. The helicopter is a significant investment and is expensive to maintain and operate; fuel, in particular, is a major cost. Thus, using the equipment effectively and efficiently is paramount. Increased productivity can only be achieved by minimising the helicopter's time on the ground as opposed to flying faster. Time is therefore a major factor.

Integration of health and safety in the business

Helicopter agrichemical spraying is a high-risk industry. The owner is aware of and focused on the main hazards that can cause fatal injuries, particularly crashing and the risk of the ground crew being hit by the helicopter. Therefore, maintaining the helicopter is crucial. The Civil Aviation Authority audits the business and inspects the helicopter yearly. Hazards are not systematically identified, and hazards related to, for example, agrichemicals, are considered as minor.

Health and safety is integrated into the business in that employees are selected and trained. The owner checks that prospective employees are respectable and trustworthy. New employees receive instruction from the owner and more experienced staff through practice and oral communication. The content is shaped by lessons learned through the experience of past near misses and accidents. He keeps in constant contact with less experienced employees via radio while he is flying and will do this until he is satisfied with their behaviour and performance. He even suggested that he gets to know his employees so well that he can "tell what they think and how they behave on the ground". Ultimately he perceives that "Safety is very much team work!"

Some of the protective measures used to control hazards, like personal protective equipment, are negotiated between the owner-manager and the employees. For example, when the owner-manager became aware of the risks associated with agrichemicals, he found that rubber leggings were a practical protective measure. He tried to make the ground crew wear the leggings to protect themselves against contact with agrichemicals being carried in open buckets to refill the helicopter tanks. However, the ground crew preferred to just wear overalls as they considered the leggings to be too warm.

The owner-manager mainly attempts to control hazards via minimisation, such as the use of personal protective equipment, for example, to control the mechanical hazard posed by the helicopter, high-visibility vests are offered. However, such measures are considered impractical and a potential hazard, as high-visibility vests blow around and faceshields can be pushed off by the wind created by the helicopter rotors.

Hazard management is mainly reactive. For example, after the helicopter hit a wire, the owner started to do site inspections with the customer so that he became aware of any potential hazards and could then offer to assist with their removal. Only incidents that resulted in more serious injuries are recorded in the accident register.

The business introduced a health and safety manual after a customer required to see the manual prior to contracting the business for work. The manual is merely a copy of another spraying business manual with minor changes. It has no practical implications for health and safety management and does not necessarily reflect what happens in the field.

Drivers and influencers

The internal drivers behind health and safety management are controlling the main hazards, which include crashing the helicopter, the risk of staff being hit and experience of incidents and accidents. Factors that make the owner compromise on safety are tight margins and the pressure to minimise the helicopter's time on the ground.

Experienced colleagues in the industry are used as advisors in general and in relation to health and safety. Department of Labour and ACC are not considered advisors because they do not have experience in the industry and their advice is unlikely to be practical. The owner listens to people that know the industry and can give specific advice. He has experienced personal contact with the authorities and felt that the advice was practicable and useful, but found it was difficult to translate in practice.

Knowledge about health and safety legislation and OHS programmes

The owner did not know about the HSE Act or the regulations. He was aware of the Civil Aviation Authority's programmes AvKiwi and AvSafety. He has considered attending some of the meetings because he thinks they would be useful, but was not aware of other programmes targeted at small businesses.

Summary of the main issues

Integration of health and safety in the business

- Hazard control is reactive.
- Formal paper-based OHS management systems are in place, but not used.
- Main hazards (potentially fatal) are controlled.
- Owner-employee relations are crucial in OHS management.

- OHS management is oral and experience-based.
- Control measures of hazards considered as ‘minor’ are negotiated between owner and employees.

Drivers and influencers
- Tight margins and high investments are factors that drive the operation of the business.

Knowledge about health and safety legislation and OHS programmes
- No awareness of health and safety legislation.
- Department of Labour and ACC are not perceived as useful advisors on OHS.
- Peers in the industry are used as advisors in general and in relation to OHS.

5.2.4 Fishing

Description of the business and its environment
This small business supplies fish to processing facilities for distribution to local and export markets. Fish supplied to the processing plants is sourced from inshore and offshore fishing operations. The business operates two purpose-built vessels performing a variety of fishing activities. Inshore fishing activities are performed throughout different times of the year, with close proximity to the New Zealand coastline. Offshore fishing operations are generally performed during the tuna season (December–March), no more than 100 miles off-shore.

The business has been in operating since 1992. The operator of this business is also a co-owner who has been in the fishing and maritime industry since 1967 and has had over 20 years’ experience skippering both inshore trawlers and offshore tuna operations. Key responsibilities include the daily management of the business and the two vessels, administration, quota management, staffing (both fishing and unloading staff), safety, maintenance and skippering one of the company boats. The business employs ten full-time staff and an additional eight part-time employees. Staff are employed to perform a variety of tasks and are made up of eight fishing crew, two processing staff and eight unloading staff. Four of the processing and unloading staff are female.

The owner of the business has extensive industry-specific qualifications – a net-making apprenticeship, deckhand certificate. skipper’s ticket, Diploma in Fishing Technology and a scholarship to attend a European maritime institute. The owner considers continued training and education an essential part of being a responsible skipper. Furthermore, the operator has a committed focus on safety and quota management-related issues. It is the operator’s belief that increasing operational expenses (specifically fuel) are eroding profit margins, and this has an impact on safety-related issues. Indeed, the owner cites “a love of the ocean” as the most positive feature of working in the fishing industry, but feels that the pressure of “personal liability” for human error is the greatest limitation and becoming increasing stressful.

Integration of health and safety in the business
The owner stated that there are numerous health and safety hazards connected with the fishing industry, in which fatalities and injuries range from drownings, lacerations as a result of breaking cables, injuries as a result of crushing between boats, and cuts and abrasions, all of which are considered part of the '“risks of the job”. The owner is very aware of the health and safety issues and potential hazards and consequently sees boat maintenance and staff training as key considerations.

Health and safety starts when recruiting potential employees and crew for the vessels. It is essential to the owner that employees are reliable and trustworthy. Recruitment is generally through word of mouth within the industry. When a new crew member is hired, they receive specific instructions on health and safety from experienced staff (generally the skipper). This includes instructions on boat rules safety and emergency procedures (for example, what to do if a person goes overboard, there is a fire or the boat capsizes) and where to stand when carrying out specific boat duties. The content of the staff training is supported not only by written information on maritime safety but also backed-up by the skipper's experience of near misses and past accidents. Although the skipper conducts regular inspections and generally keeps a close eye on all crew in order to maintain safety standards and "a tight ship", teamwork is important and is used to aid the integration of health and safety measures.

While there are hazards specific to the vessel, there are a number of universal maritime safety procedures that are integral to the welfare of the crew, for example, two crew members must be on deck at all times, and each vessel is fitted with lights for safety. Personal protective equipment is typically supplied by the company, although many crew members like to use their own equipment (waterproof boots, gloves and so on).

As a result of accident investigations, safety and hazard control measures have also been implemented. In this particular business, two work-related injuries have been reported in the past five years. The first incident occurred when a crew member jammed his toe between two vessels during a fishing operation. The accident was formally recorded and reported to Maritime New Zealand. The only other injury was a cut hand, which required hospital treatment. Both these injuries resulted in changes to the way certain operations were performed, and new safety measures were developed. A formal safety register is kept and regularly updated according to changes to regulations or new information received from maritime organisations.

Drivers and influencers

Preventing harm to the crew, minimising the risk of the skipper being personally liable and reducing lost time through injury are some of the key drivers for the owner to manage health and safety. The owner stressed, however, that there are financial costs associated with maintaining high safety standards in an industry that is experiencing increasingly tight operating margins. The way the maritime safety authorities manage the mentioned incidents place pressure and stress on the young skipper and his family, and have made him reconsider new career options.

Experienced colleagues and industry experts are used to provide general advice and advice relating to health and safety. Information and advice is also sought from government fisheries officials and the company vessel inspection provider. The owner noted that information from the maritime safety authorities is sometime inconsistent, and often, small businesses are unaware of changes to inspection guidelines and standards, resulting in unnecessary and expensive maintenance being performed. There are notified inspections as well as spot inspections carried out by maritime officials, especially when unloading at different ports. Nonetheless, the advice relating to health and safety received from government departments has been, in general, very useful.

Knowledge about health and safety legislation and OHS programmes

Various legislation and regulations have an impact on the operation of the business: first, the quota management requirements; second, the guidelines relating to boat standards and manufacturing requirements provided by maritime authorities; third, Maritime New Zealand's Safe Ship Management programme; and finally, administrating ACC legislation and levy payments entails a great deal of resources, including time. It should be noted that, while the owner was aware of the FishSAFE programme and has read documents about the ACC initiative, he had not participated in any of the training programmes.

Summary of the main issues

Integrating health and safety in the business

- An OHS manual is in place to lead health and safety, and the system is continuously reviewed. Regular inspections help this process.
- Hazards are both managed through preventive and reactive approaches to health and safety.
- Flaws in the management of workplace health and safety are only exposed when there is an incident (the reactive approach).
- Incidents are a constant concern for skippers as they can have a detrimental impact on personal "liability" and the company's ACC levies.
- The main health and safety measures are training and supervision and written OHS manuals as well as ensuring that new staff are reliable and trustworthy.

Drivers and influencers

- The industry is characterised by tight operating margins generated by increasing fuel, compliance and wages costs, as well as diminishing fishing stocks.
- Inconsistent communication and standards from the various maritime safety authorities and their inspectorate make it difficult to know what to do and when.
- A perception that the maritime safety authorities are more concerned with attributing blame when an accident occurs than investigating what occurred and how the situation can be improved.
- A sense of responsibility towards the crew (a so-called 'pastoral care' approach) that made the skipper personally liable for his staff.

Knowledge about health and safety legislation, and OHS programmes

- As a result of the employer's years of training and industry expertise, he was cognisant of the numerous health and safety regulations pursuant under the different statutes.
- The skipper utilised industry experts, colleagues and government agencies to obtain additional OHS information and advice.
- The skipper was unaware of the FishSAFE programme.

5.2.5 Forestry

Description of the business and its environment

This small business offers silviculture and timber harvesting services. However, this case study focuses on the harvesting aspect of the business. Before commencing work at a forest block, the foreperson visits the site and does an initial inspection. The inspection is then repeated by the forestry crew to assess the tasks and the hazards they are likely to be exposed to on the site. The tasks are then delegated to the employees and primarily include felling

trees, and moving and loading the logs on to trucks to be processed. Hazardous machinery is utilised throughout the process.

The owner-manager worked as a forestry manager prior to establishing the business nine years ago. He has a Diploma in Forestry Management, which included practical forestry and management skills, including OHS compliance issues. The business employs 17 employees and 10–14 subcontractors. The employees are organised in five teams that operate independently as self-managing teams.

One of the difficulties in the industry is securing the full tenure of contracts, for example, a three-year contract can be terminated after six months because the contractor becomes insolvent. According to the owner-manager, they also experience significant difficulties with employment, particularly attracting reliable skilled employees, the high minimum wage and the high costs associated with training new employees.

Integration of health and safety in the business

The main hazards in the business arise from the operation of large machinery and falling trees, but there are hazards nearly everywhere on a site. The main concern of the owner is keeping the individual safe. The owner perceives that 95 percent of the hazardous situations arise because of the actions of individuals and that the hazards cannot be eliminated or isolated. Therefore, he focuses on ensuring that individuals are aware of the hazards present.

New staff are trained for a month and supervised by one of the experienced workers. A professional trainer is on site one day a week. Before felling commences on a site, a site inspection checklist is completed with the foreperson. The checklist highlights potential risks and hazards, for example, if there is a public walking track through the forest block. Before work begins on a site, the site foreperson sits down with the crew and goes over the hazards, what could happen and what to do if something goes wrong. At ‘smoko’ break, the crew will raise hazards, for example, ‘wind throw’ in areas of the forest block that was not detected via the site inspection checklist. The lockers and the machine operators are constantly in contact with each other on site.

A formal safety meeting is held once a month. At this meeting, they go over what happened on each block. To improve their processes and increase awareness, they also talk about accidents or fatalities that occurred in the forestry industry, which are registered in a national database and communicated to the forestry businesses. The business has a formal occupational health and safety management system, which was implemented because the owner perceived it to be necessary. The large customers also require a formal system that it is audited.

The business has had six incidents during the nine years of operations. Only one was a serious harm injury where a crew member required four months off work because of a twisted knee. The injuries experienced in this business have not influenced the way work is carried out. The employer considered most of these incidents as unavoidable. The causes are perceived to be due to natural conditions in the forest, like the uneven surface of the ground. However, a significant injury that occurred during the owner-manager’s previous employment influenced the way work is carried out and the way safety is integrated in the business.

Drivers and influencers

The large customers in the industry require their subcontractors to have OHS management systems and prefer them to be part of some form of audit scheme. One of the business's largest customers audits the business once a year.

The owner has developed a management system that fulfils the requirements of the ACC WSDS, but has not had time to fill in all the paperwork required to actually receive the discount, which would be around NZ$6,600. The discount and the requirement from large customers are drivers that facilitate the improvement of safety. However, the main driver is ensuring the safety of staff, especially because it is difficult to recruit reliable and skilled workers.

The owner perceives the regular (once or twice a year) inspections from the Department of Labour as a way of ensuring that safety standards are maintained. He uses the inspector as a consultant on issues where he does not have the expertise himself, for example, when they purchased two new machines, the OSH inspector checked that the machines were compliant with ISO standards.

Knowledge about health and safety legislation and OHS programmes
The owner knows about the health and safety legislation and regulations related to his business. It is mainly through large customers that he keeps up to date, but he also uses the industry organisation and the inspector from the Department of Labour. The owner was not aware of other programmes targeted at small businesses or forestry businesses than the ACC WSDS.

Summary of the main issues

Integration of health and safety in the business

- OHS is primarily managed and communicated orally but is also documented in a written system.
- OHS is managed both through formal (monthly meetings) and informal ('smoko' breaks) organisation.
- A high commitment to OHS from the owner penetrates the business.
- A proactive approach to OHS is illustrated through learning from accidents in the industry in general and assessing new equipment before it is implemented.
- Elimination and isolation are not considered as control methods that can be applied in the business.
- Hazardous situations are perceived as being created by individuals actions.

Drivers and influencers

- Large customers require their subcontractors to have OHS management systems and audit them regularly.
- Large customers' OHS knowledge is used to improve OHS and OHS management systems.
- Difficulties getting good reliable employees.
- Reduction in ACC levy.
- Lack of time for administrative tasks, for example, filling in the required documentation to obtain a reduction in the ACC levy.
- The owner's commitment to OHS.

Knowledge about health and safety legislation and OHS programmes

- The owner's educational background is the basis of the high knowledge about OHS in this small business.
- High knowledge about the OHS Acts and regulations.
- Sees OSH inspectors as resources for improvements.

5.2.6 Health care

Description of the business and its environment
The business is operated by a self-employed occupational health nurse who offers health screening services, including the review of medical histories, physical body measurements and blood tests. The customers are insurance companies, including ACC. The insurance company sends an email to the nurse with information about the patient. She then telephones the patient and arranges a meeting in their home or at their workplace.

The business was established 13 years ago and is operated on a part-time basis. The nurse is also employed part-time in a large company where she is also a health and safety representative. The owner has 32 years' experience in the area, holds a degree in nursing and a Master of Ergonomics.

The business does not have any employees at the moment, but had one employee three years ago. The employee was mainly employed to work when the business was subcontracted for services by ACC.

The owner's main concern is to provide a quality service to the insurance companies and to meet the needs of the client. The owner is not concerned about ensuring the availability of work because the contracts that the business has with insurance companies cover a large geographic area.

Integration of health and safety in the business
According to the nurse, the main hazards she is exposed to include working alone in patient's homes, driving for hours at a time, fatigue and contact with body fluids. The owner has established a protocol to minimise these hazards. For example, to minimise the risks associated with working alone, she pre-arranges the visit, tries to build rapport with the client on the telephone before the visit to gauge their disposition or if they are likely to pose a threat, instructs patients to lock dogs away, texts her husband when arriving and leaving an appointment, always carries a charged cellphone, parks her car in an accessible position, ensures that it is easy to get out of a patient's home and positions herself so that the patient does not block the exits from their home.

The business has a formal OHS management system. The nurse adopted the system, which she designed for one of her previous employers – a rest home. The system was developed after the rest home was audited by ACC. The owner uses the system, but some of the elements require updating. The system is both 'in her head' and recorded on paper. The last time she improved the system was after attending the WorkSafe health and safety representative training courses.

The business has had one accident in its 13 years of operation – a needle stick injury. There have been two incidences where the owner felt threatened while visiting a patient. This incident made her more cautious when visiting patients' homes.

Drivers and influencers
The main driver for health and safety in the business is securing the safety of the owner and the staff (when employed). The OHS management system was established because it was a requirement of her largest customer, the ACC. She suggested that the knowledge gained from tertiary education and her role as a health and safety representative has helped to facilitate this.

Knowledge about health and safety legislation and OHS programmes
The owner finds OHS legislation, regulations and codes of practice easy to understand, but recognises that other small health care business owners might have difficulty understanding and implementing them in practice. The owner perceives that the Health Professional Competency Act affects her business the most, as it requires the maintenance of a nurse practitioner's certificate via frequent training. The most complex act is the Privacy Act.

The owner was aware of ACC's Lighten Up programme for manual handling in the health sector, DPI programme and Workplace Safety Discount Scheme. She found information about the programmes on ACC's website. The owner did not consider participating in ACC's WSDS because her levy is already low.

When the owner searches for information on OHS, she usually visits the ACC and Department of Labour websites. She particularly looks for codes of practice and has found the Department of Labour helpful when she has been in contact with them. The owner suggested that the Department of Labour could improve their services to small businesses by making their advice more accessible, for example, having a personal contact that you could phone for advice or information.

Summary of the main issues
Integration of health and safety in the business
- Hazards are assessed before each job.
- Hazards are minimised via personal contact and work procedures.
- A written formal OHS management system exists, and information is also stored 'in her head'.

Drivers and influencers
- A large customer required an OHS management system and it was then implemented.
- The owner gets inspiration for OHS from part-time employment in a larger company.
- Knowledge acquired from tertiary education.

Knowledge about health and safety legislation and OHS programmes
- The owner is well informed about OHS legislation and programmes.

5.2.7 Horticulture

Description of the business and its environment
This small horticultural business primarily produces apples for export and some pears for the domestic market. The activities that take place at the orchard vary considerably according to the season. In early winter, the trees are pruned; during winter, spring and summer, the orchard is sprayed to control weeds and pests; the grass is mowed regularly; and the apples are picked in autumn. During the picking season, bins for the apples are transported in the orchard by tractor.

The grower has owned the orchard for nearly 30 years; before that, he leased his father's orchard. He does not have permanent staff but employs casual labour during the picking season. During the peak season, eight people are employed at once; if he could get good pickers, he would only employ four. Generally, he has up to 25 different employees over the picking season. It is difficult to get good and reliable workers. The owner thinks it is partly because he cannot afford to provide accommodation, as pickers prefer to work where they can live.

Market pressures have a significant impact on the business. The business is annually audited by Global GAP (Good Agriculture Practice) standards and has to meet the prescribed standards in order for the apples to be exported to Europe and the United Kingdom. The price of apples is dictated by the market, and the profit margin is low. This causes considerable stress because the grower is often uncertain if he can break even. Any profit is essentially his wage. Often the workers get paid more than he earns, and his family are dependent on his wife's income to survive. He works around 70 hours a week during the peak season, and production is dependent on the weather conditions. He remains in the industry because the orchard is an investment that is difficult to give up or to know when it is best to get out of the seasonal cycle in the hope that the next season will be more profitable.

Integration of health and safety in the business

The orchardist suggested that the hazards he and his employees are exposed to are different because he tries to do most of the hazardous activities in the orchard. The main hazards that the workers are exposed to include falling off a ladder and being hit by a tractor. The hazards that the grower suggested he is exposed to are generally more significant, such as chainsaws, operating machinery and spraying chemicals. The grower has sustained significant injury while undertaking each of these activities. However, he is prepared to continue conducting these tasks because he does not want to harm staff and is afraid of being fined if an accident should occur. He takes a number of precautions when dealing with chemicals, such as personal protective equipment and spraying early in the mornings to avoid spray drift. Safety around machinery and tractors is, at times, compromised due to lack of maintenance, which is attributable to a lack of time and financial resources.

He tries to create a positive work environment for his staff. Clean toilets are provided, and he helps the workers fill their apple bins, which improves their income. At the same time, he can ensure that they are doing the job properly. Safety is communicated orally and by demonstration. However, the grower finds it difficult to maintain high safety standards as he cannot always observe what workers are doing or ascertain whether they understand his instructions. For example, a Samoan worker with little comprehension of English nearly had an accident when he was operating a hydro ladder. He was asked to "take his foot off the pedal" to stop the machine, but he could not understand what "foot" or "pedal" meant.

Overall, the grower displayed a paternalistic attitude towards employees who were willing to work in the orchard. He tried to teach the Samoan worker English words by encouraging him to mention the name of the day and different body parts when he arrived for work every morning. He also tried to help an employee with alcohol issues because he knew he would have bigger problems if he did not have a job.

Global GAP audits the orchard's OHS system, especially in relation to the storage and use of agrichemicals. Therefore, the orchard has an OHS management system in place, and all the

OHS documents (OHS policy, job descriptions, hazard register, chemical inventory, accident register) are kept in the Global GAP folder. However, this does not necessarily mean that actual practice follows the procedures outlined in the manual. Only procedures performed in relation to the spraying of agrichemicals strictly abide by the manual.

Drivers and influencers

The demands made on the business by Global GAP and staff safety are the main drivers of OHS. In order to export apples to more lucrative markets, the grower has to comply with the standards set by Global GAP, which encompass OHS requirements, particularly in relation to the use and storage of chemicals. The grower maintained that the standards upon which the business is audited annually have improved chemical safety, as the spray house and the equipment is inspected. In addition, staff safety is a driver that ensures the grower maintains the equipment they use to pick apples. However, he often compromises his own safety as a result of tight margins, as unmaintained machinery has created hazardous situations.

The grower belongs to a packhouse co-operative, which provides a great deal of industry-specific information and would be the first port of call if he required advice on OHS. Innovative industry peers are another major influencer.

Knowledge about health and safety legislation and OHS programmes

His knowledge about OHS comes from Global GAP, approved handler training and experience. He is not aware of any OHS programmes targeting the apple industry, but is aware of the ACC Workplace Safety Discount Scheme. He has no inclination to join the scheme because it would add extra administration, and the 10 percent discount on his ACC levy fee ($900) is what he described as "peanuts". He did not find legislation difficult to understand, but thought it a necessity for larger businesses employing lots of staff. He perceived that his business was compliant with the relevant laws.

Summary of the main issues

Integration of health and safety in the business

- The written OHS system is not implemented fully in practice.
- OHS is managed orally or by showing staff how to conduct work safely.
- Personal relationship between owner and employees; owner takes a social care role.
- Hazard management is mostly reactive.

Drivers and influencers

- Tight margins (compromise safety via minimal maintenance and use of old equipment).
- Lack of reliable employees (safety becomes negotiable but also important).
- OHS known and improved through market-driven audit scheme.

Knowledge about health and safety legislation and OHS programmes

- ACC's WSDS is not considered an incentive.
- Close relations to the packhouse (customer) and peers are important influencers.

5.2.8 Residential construction

Description of the business and its environment

This small business primarily constructs residential buildings, but also does some light commercial work. It mainly undertakes the structural aspects of the construction process, including laying concrete foundations, erecting timber framing and laying roofing. Subcontractors are employed for specialist tasks, such as electrical installations and plumbing.

The business was established in the early 2000s and is managed by the owner, who has a background in the construction industry and OHS. The owner was originally a carpenter but has had considerable experience as an OHS professional in a variety of capacities.

The business has two employees; a carpenter and an apprentice. If the business is contracted to undertake a large construction project, the owner prefers to hire contractors as opposed to permanent staff because of compliance costs associated with PAYE and cash flow issues.

Residential construction is an extremely competitive sector. The main difficulty is managing the subcontractors because they are only at the building site for a few days. Thus, as a means of control, the owner tries to build good relationships with only a few subcontractors that operate to his standards.

Integration of health and safety in the business

The owner identifies one key health and safety issue for the business; hazard identification. This is the most important because hazards constantly change on a construction site. However, some of the main hazards the owner mentioned include heights, ladders, handling equipment, heavy and awkward items and noise.

The business has a formal written OHS management system, and OHS is integrated into all aspects of the business, from employing staff, hiring subcontractors, preparation of quotes and planning the building process. In the planning stage, the owner carries out a task analysis and includes any OHS expenses in quotes. However, he did not perceive that this made the business uncompetitive. Investment in OHS, such as the temporary internal staircase he purchased recently, helps the builders and tradespeople work more efficiently. This reduces the likelihood of harm, which is an investment in the long term.

The hazard register is a whiteboard placed at the entrance to the worksite containing a list of present hazards, location and controls. All visitors, including contractors, are informed about the hazards. The carpenter conducts a weekly safety inspection, notes any safety issues in a Site Safe inspection template and makes sure that the owner is alerted and takes appropriate action. The carpenter is the safety supervisor, the owner's 'eyes and ears' on site, and is responsible for the safety inspection, monitoring the contractors and ensuring that the site is safe in general.

When the owner hires new staff, he talks to them about the business's OHS policy and emphasises the importance of self-preservation. New staff are issued with a safety kit containing protective equipment such as earmuffs, safety glasses and wet weather gear. All staff must complete Site Safe courses. It is also a requirement for the subcontractors. In order to facilitate a high safety culture, the owner tries to set a good example by fixing faulty equipment immediately and having an 'open door' policy so that problems can be raised and remedied. OHS is the first item on the agenda of the fortnightly 'toolbox' meeting to emphasise its importance. He also tries to establish personal relationships with his employees' families by arranging dinners.

Drivers and influencers

The main drivers that compel the owner to address OHS issues include staff safety, operating the business in a cost-effective manner and the desire to be "one and a half steps ahead" of the OSH inspector. The owner's background in OHS is a major factor that ensures OHS is a priority for the business.

The owner asserted that small residential construction businesses have an advantage over large businesses because they are often more aware of what is going on at the worksite. However, he suggested that OHS issues arise because they have a lack of information and because the owners often leave subcontractors to their own devices as opposed to actively managing them. This is reinforced because there are no consequences for not following regulations, as the sector is given infrequent attention by the Department of Labour.

Knowledge about health and safety legislation and OHS programmes

The owner of this residential construction business is well aware of the HSE Act and related regulations and codes of practice. To get information and advice on OHS issues, the owner refers to codes of practice and Department of Labour's website. He does not find the Department of Labour website easy to use and extract knowledge from. His background in OHS enables him to comprehend legislation and regulations, but in his opinion, others in the industry struggle to translate the regulations into practice. He suggested that OHS inspections could be combined with inspections from the council and/or the ACC Workplace Safety Discount Scheme (WSDS) audit process to increase inspections in the sector.

The business passed the WSDS audit and received a 10 percent discount on its levies. The money was not a great incentive but is used to invest in safety equipment. The real incentive is to be "one and a half steps ahead" of the OSH inspector and to display commitment to OHS. An increase in the percentage discount would encourage more to go through the process, and a figure of 15–20 percent was suggested. The audit process did not improve safety at the business, and he was disappointed with the re-audit, which only required him to fill in a form. The owner is a supporter of Site Safe courses and the various Site Safe passports.

Summary of the main issues

Integration of health and safety in the business

- Sound knowledge about OHS, OHS management systems and the processes in the industry makes it possible for a small business in a highly competitive environment to implement written and oral supported OHS system and procedures tailored to a small residential construction business.
- OHS procedures, for example, hazard identification and registering, are flexible, practical and based on low technology (templates and white board).
- Integration of OHS in all business processes from planning to completion of the tasks.
- Owner relations with employees and subcontractors are crucial for the implementation and maintenance of OHS management.
- OHS training requirements for staff and subcontractors.
- Owner as a good personal example facilitates the building of a high safety culture.
- Injuries seem to be explained by workers' deviation from correct procedures.

Drivers and influencers

- The owner's experience as an OHS professional.
- Cost-effective business.
- To be "one and a half steps ahead" of OSH inspectors.

Knowledge about health and safety legislation and OHS programmes

- High knowledge about legislation and programmes mainly based on the owner's prior experience as an OHS professional.

5.2.9 Transportation

Description of the business and its environment

This transportation business was founded 20 years ago when the owner purchased a truck to transport his brother's potatoes from the farm to the market. The business has evolved and expanded over this time, and today, it primarily transports general bulk freight deliveries for business customers. They have about 60 regular customers and have a truck on the road every hour of the day so the business essentially runs '24/7'. The business provides an interesting case study because it expanded from a small to a medium-sized business within the last 15 months in order to service contractual obligations. The truck fleet increased in size from seven to 19 rigs, and the business employs 30 staff, including 23 drivers who also supervise the loading and unloading of freight. The rest of the staff have administrative and support roles. A general manager has been appointed to cope with the logistics associated with the increase in size.

The main issues for the business were reported to include petrol prices, road user charges and the highly competitive nature of the industry. It was also noted that it can be a very stressful industry in which to work.

Integration of health and safety in the business

The main reported health and safety issues were driver fatigue, driver safety and the risk of an accident occurring when freight is loaded and unloaded from the truck. Driver fatigue was evidently the most serious concern, which initiated the introduction of a driver monitoring scheme nine months ago. Drivers are only permitted to drive a certain number of hours per day and are expected to log the amount of time spent driving and on breaks, which must be given to the dispatch manager at the end of the week. The system reportedly works well overall, but some drivers forget to hand in their logs. In order to further minimise fatigue, drivers are encouraged to rest and sleep before they drive. This is difficult to monitor, and they trust and rely on the drivers to take the initiative.

Furthermore, the manager suggested that the safety of the driver and general public is fostered by the fact that the trucks are new (the oldest model is 2003) and are well maintained. This ensures they operate safely on the road, but has also installed a sense of pride in the drivers.

The risk of an accident occurring when freight is loaded and unloaded from the truck is minimised by OHS induction programmes run by large customers, such as Fonterra and Carter Holt Harvey. These customers have rules about how the drivers should conduct themselves at their depots, for example, some have dedicated safety zones that the drivers must stand within, and these are often strictly enforced. The only serious accident that was reported to have occurred involved a hay bale falling on a driver. This prompted a change in their policy: a rule was introduced stipulating that drivers should stand 'x' metres from the truck during the loading and unloading of freight.

An OHS manual was created in 2002 because the owners were aware it needed to be done. However, when the business only had four drivers, health and safety was communicated orally. When a customer informed the business about safety on their site, they gathered all drivers and presented the information orally. Today, OHS is still communicated orally to some extent, for example, drivers are given a health and safety induction on a customer site on a one-to-one basis, which creates more administrative work. This is now supported by manuals that are stored in the truck cabs.

However, the administrator responsible for creating the OHS manual complained that it was difficult to determine what it should contain. This was particularly so because the aim was to give the drivers two pages of information supplemented with a few forms. The ACC and Department of Labour websites, as well as examples of manuals created by larger transport companies, were used to create the material. The manuals of their larger customers were perceived to be good because they can afford to employ full-time health and safety staff who have the expertise to create such documents.

Drivers and influencers

Driver safety is the main factor that compels management to address health and safety issues. Large customers are influential in assisting the business with the more formal aspects of health and safety management. For example, they insist that drivers undertake inductions on how to conduct themselves at their depots, and their formal health and safety documentation serve as examples to smaller businesses.

In addition, the operations manager, who previously worked for a large bulk freight company, has been an instrumental driver behind health and safety in the business. For example, he introduced the driver monitoring scheme. The owner is no longer involved with the day-to-day operations, but will comment on health and safety documentation produced by the business.

Knowledge about health and safety legislation and OHS programmes

Due to business expansion, the managers became more aware of hazards, and information about health and safety was mainly sourced via the ACC and Department of Labour websites and tools developed by its larger customers. The manager reported difficulties with legislation – specifically, Land Transport NZ's 'rules of the road' that control driver hours was the most difficult to implement because of its inflexibility. Employment law was another issue, particularly because it was difficult to interpret and do in practice, such as calculating holiday pay.

The business has not participated in any OHS programmes targeting the transport industry or small businesses because they have difficulty setting aside time to do so. However, they were aware of AON Driver Fatigue, ACC promotions of safety around vehicles and the ACC WSDS, which they thought was only for corporate businesses.

Summary of the main issues

Integration of health and safety in the business

- The main issue is controlling driver fatigue, sleep and rest before starting work and collection of drivers logs.
- Trust in the drivers is the basis for controlling driver fatigue.
- A formal paper-based OHS management system was developed before expansion.

- OHS management becomes complex when expanding from less than 10 employees to around 30.
- Transition from oral-based informal communication to a combination of written and oral is difficult and time consuming.

Drivers and influencers

- Large customers are the greatest influence on the management of health and safety.

Knowledge about health and safety legislation and OHS programmes

- Knowledge was gained from the ACC and Department of Labour websites.
- Large customers, like Fonterra and other transport companies, are the preferred advisors on OHS.

5.3 Summary – key themes from the case studies

The main issues across the nine case studies are summarised below.

Integration of health and safety in the business

OHS management systems

Two of the nine businesses did not have a formal written OHS management system. The new owner of one of these businesses planned to integrate OHS into the quality management system. The other owner indicated that he would consider aiming to achieve the reduction in ACC levy from the WSDS but this would mean creating an OHS management system.

Seven of the nine businesses had a formal paper-based OHS management system. Three of these businesses were in sectors where the customer demanded their suppliers or services partners to prove they had an OHS system in place. In two of these cases, the system was not fully used in practice. The third case was still developing the system and struggled with the transformation from an oral-based communication system to a paper-based system that was necessary after the expansion from 10 employees to 30 employees. Two businesses had either adopted a system from one of the clients or were supported by expertise from a big customer in the development of the system. One business had implemented an OHS system that was specifically tailored and used simple flexible tools, like whiteboards for hazard registers and hazard information. The basis for this was the owner's background as an OHS professional.

The relationships between owner and employees were crucial for the management of OHS. This was mentioned by seven of the nine businesses. Safety was built on trust and participation by employees. Only three of the nine business included health and safety in their weekly department or production meetings. All three of these businesses' owners either had OHS experience, management skills or accountancy experience. Moreover, three of the nine businesses used information from ACC or Department of Labour in relation to their OHS management systems or in their consideration of a system. Three used mainly customers and peers to implement and improve OHS systems.

In summary, the main issues were as follows:

- A change in ownership in which the new owner has either a professional background in OHS or in which systems and compliance are components (for example, accountancy)

and/or has a positive attitude towards OHS, in turn, influences the development of systems to manage OHS.
- Economic incentives, such as reduced ACC levies or reduced wastage, can influence the owner to consider introducing OHS management systems. However, time to fill in the documentation can be a problem.
- External pressure or demands from customers encouraged small businesses to implement OHS management systems but did not ensure that they were used in practice.
- Owners with sound knowledge about OHS and of management systems were able to see the benefits of OHS management systems and were more able to implement systems that fitted their small businesses. They also saw it as an economic benefit for the company.
- OHS was mainly managed and communicated orally or with the use of simple and accessible written tools.

Hazard management and injury

In four of the nine cases, hazards were considered after an incident or an accident, and control measures were put in place or were under consideration. Four businesses had a hazard identification procedure in place.

In three cases (forestry, civil aviation and agriculture), uncontrollable hazards (like falling trees/wind gusts, weirs or cattle's behaviour) and machinery were identified as hazards, whereas chemicals were not. The owners' reasons for not perceiving chemicals as hazardous were that they used personal protective equipment and hence considered themselves not to be 'exposed' and considered the new generation of chemicals to be less hazardous than they had used previously.

In five out of nine cases where we were told about an accident or injury, the causes of the injury were assigned to a failure by the victim. We did not ask about the underlying reasons. Most of the hazard controls implemented were therefore based on behaviour controls, information and training. Three of the businesses considered the selection of employees to be an important way of controlling hazards.

In summary the main issues were as follows:
- Reactive hazard management (controls put in place after an incident or an accident).
- An owner with a sound knowledge about OHS and a high level of OHS motivation was the basis for more proactive hazard management (i.e. using methods for hazard identification).
- The owner-managers predominantly perceived the causes of injury and accidents as personal failures by the victim or due to 'apparently' minor occurrences that were not perceived as a hazard.
- Hazard controls were focused on behaviour and personal protective equipment rather than passive preventive approaches such as organisational change or engineering controls.
- Safety was built on trust between the owner and employee.

Drivers, barriers and influencers for OHS and OHS management

The main OHS drivers were:
- demands from customers, clients and contractors
- the owner's experience as OHS professional; OHS was seen as contributing to a cost-effective business

- the owner's commitment to OHS and responsibility towards the employees (an example of pastoral care)
- to avoid improvement notices or penalties from the Department of Labour and other authorities.

The main influencers were:
- large customers, clients or contractors
- industry certification schemes where OHS is integrated
- peers in the industry
- family
- owners' professional background.

The main barriers were:
- tight profit margins
- significant investments in production equipment
- the nature of production (for example, in agriculture and horticulture) and limited workforce, which can often dictate that certain work tasks must be performed at any time
- lack of reliable employees.

Knowledge about health and safety legislation and OHS programmes

Four out of the nine businesses had no or very little knowledge about health and safety legislations, and five out of the nine had no or very little knowledge about OHS programmes targeted at small businesses. Whilst two of the owners would not contact either ACC or the Department of Labour to get information or advice, two other owners used both the ACC and Department of Labour websites to gain information.

In summary, the main issues were:
- patchy knowledge about OHS legislation
- little awareness of OHS programmes targeted at small businesses.

6. Review of international occupational health and safety practice, programmes and interventions in relation to small businesses

6.1 Introduction

This section provides a review of international occupational health and safety practices and programmes in relation to small businesses, whatever way small businesses are defined within that country or jurisdiction. It is undertaken from an intervention effectiveness research perspective, which is briefly outlined in Appendix E. The review of internationally published literature and information includes subsections on: the small business workplace/work environment; hazards, risks and exposure assessment; injury and ill health; small business management practice and the implications for OHS; controls and interventions; and potential intermediaries that can influence OHS management in small businesses (see Appendix F for the terms of reference). The final part of this section provides a review of international OHS practices and programmes provided by a variety of agencies on the efficacy of prevention programmes designed or implemented in small businesses and includes exemplars from Australia, the European Union and the United Kingdom. Where available, specific information obtained from relevant agencies is provided on implementation plans, evaluations and budgets.

6.2 Review of occupational health and safety practices in small businesses

There is a growing body of research on the occupational health and safety issues concerning small to medium-sized businesses internationally. However, the literature is fragmented, and the focus of the research is diverse and disparate. Only until very recently has the research been examined to identify effective approaches to occupational safety and health in small businesses and to suggest future research strategies.[20,44,147,148] Even with this examination, conceptual frameworks for OHS and small businesses are theoretically vague and empirically not well supported.

The political and economic importance of small businesses nationally and internationally is cited as a preamble in most OHS studies involving small businesses. The economies of most industrialised and developing countries are dependent on the contribution of small businesses. They are considered to be one of the principal driving forces in economic development. In particular, they stimulate private ownership and entrepreneurial skills, are flexible and can adapt quickly to changing market demand and supply situations, can generate employment, help diversify economic activity and make a significant contribution to exports and trade.[149] Statistical data suggest that the proportion of enterprises and employees working in small businesses is significant.

The literature shows that international agencies and many governments have identified the importance of small businesses as a priority for occupational health and safety research,[150–153] but details of the research strategies, the provision of services, information and support for small businesses is not well defined. The reasons for this lack of focus is said to be due to the nature of small business itself, the changing patterns of employment and the economic environment in which small businesses operate.[13]

Mayhew[147] identifies the changing pattern of employment where many other small business workers are employed either under contract or subcontract arrangements, or in franchisee/franchisor classifications, or are based in a 'home' office where they work as separate entities. In addition, Quinlan et al.[144] identify another group of employees, usually employed by small businesses and covered under terms of informal or precarious employment. Precarious employment normally involves those forms of work involving atypical employment contracts, limited social benefits and statutory entitlements, job insecurity, low job tenure, low wages and high risks of ill health (casual workers, short-term workers, seasonal workers and so on).

Bearing these complex issues in mind, what then are the features of small businesses that make research and the provision of support and services to small businesses problematic? Many studies have identified the characteristics of small businesses that highlight difficulties and challenges for owner-managers, enforcement agencies and researchers.[6,18,148,154–156]

6.2.1 Workplace/work environment

Small businesses occupy a myriad of workplaces and work environments, including agricultural, industrial, commercial, rural, domestic, marine, aviation and recreational settings. There are little data on the physical characteristics of these work environments and limited research on the interaction between the owners and employees. However, two studies found that, in small businesses surveyed, wage rates were lower, jobs less secure and working conditions poorer than in larger enterprises.[22,144] (Also see Dyson,[157] Lamm and Walters,[44] Hasle and Limborg,[20] Cairncross and Buultjens,[158] Johnstone and Quinlan,[159] James et al.[160])

The work environment in small businesses is generally shaped by the industry in which the business operates.[154,161] There are contradictory opinions and evidence on whether the work environment (exposure to hazards) and the consequences (injuries and fatalities) are worse or higher in small businesses than in larger businesses purely on the basis of size. However, Sorensen et al.[10] argue that the empirical evidence for an increased risk in small businesses is weak, especially because there have been few comparisons made between small and larger enterprises.

Furthermore, exposure to different types of hazards related to size, industry and sector is analysed in a Danish study,[162] which shows that there is a correlation between business size and the following factors in the work environment in private sector businesses: postures, physical loads, exposure to chemicals and the physical environment. A later study[10] confirmed that "the ergonomic, physical and chemical work environment is more hazardous in small enterprises than in large ones" (p.1044), but the authors added that the psychosocial work environment is actually better. In addition, the work environment seems to deteriorate for male employees when the size of the business is smaller. They did not find the same tendency for women. This is perhaps attributable to horizontal labour market segregation. For example, the construction industry employs mainly men and the administration sector employs mainly women.[162]

6.2.2 Hazards, risks and exposure assessment

The range of hazards and exposures encountered in small businesses are reported to be extensive and excessive. Lentz et al.[154] suggest that many hazards are similar across businesses and industries, regardless of size, yet others may be unique to small businesses and

industries that are dominated by small employers (for example, construction, retail trade and wholesale trade). A small number of studies provide data that exposure to many physical and chemical hazards in small workplaces is excessive, although, in general, the extent of published data on small workplaces are extremely limited. Examples in the literature include studies from agriculture, construction, manufacturing, metal work, the wood industry, painting and printing.[20,163–167]

However, it is apparent from the reviews that there are many exposure assessments reported in the literature, but not specifically identified (in the keyword search) as being undertaken in small enterprises.[20] However, there are a variety of risk assessment methodologies, and techniques have been developed specifically for use in small enterprises where physical and chemical exposures occur.[165,168–173] These all tend to emphasise a relatively simple low-cost approach to risk assessment that leads on to the application of a range of controls and preventive strategies.

Overall, Walters[21] finds that the literature on health and safety in small businesses establishes a persuasive case to anticipate poor health and safety outcomes and that health and safety performance of small businesses is proportionally worse than in larger businesses dealing with similar hazards.

6.2.3 Injuries and ill health

In relation to risk of injury, reviews report that the literature provides firm support that workplace fatality rates are frequently higher in those industries dominated by small workplaces as opposed to larger enterprises.[20,100,174,175]

Comparable data for non-fatal injuries in small workplaces are not as readily available. The NIOSH[100] analysis of injury and illness data (years 1994, 1995) for high-risk small businesses, reported significantly lower morbidity rates for smaller businesses with fewer than 10 employees, in comparison to larger enterprises (>100 employees). This contradicts the fatality data and is accounted for by a level of under-reporting, the assumption being that larger businesses have a better injury reporting prevalence than smaller businesses, although it would be more accurate to infer that the level of under-reporting injuries in small businesses is far greater than the level of under-reporting in larger enterprises.

A study of injury rates from workers' compensation claims in British Columbia[176] found that, across all industries, small businesses that failed between one and two years after start up had an average injury rate of 9.71/100 person-years, while small businesses that survived more than five years had a significantly lower injury rate (3.89/100 person-years), demonstrating a correlation between injury rates and length of time in business. The authors suggest it is possible that injury rate is an indicator of how well a business is managed.[176]

Data from small businesses on the acute and chronic effects of exposure, and the incidence and prevalence of ill health and occupational disease is even harder to find in the published literature. The NIOSH[100] analysis of injury and illness data (years 1994, 1995) for high-risk small businesses in the United States reported fatal and non-fatal cases of occupational illness from the 1997 Bureau of Labor Statistics survey. The survey reported that, of the estimated 6.5 million cases of non-fatal occupational illness and injury in the private industry for 1995, roughly 495,000 (7.5 percent) were cases of occupational illness. Small business industries were ranked according to incidence rates (IRs) for cases of occupational illness. This list is

headed by small businesses in cut stone products (IR 0.9/100 full-time employees), and dairy products, motor vehicles parts and supplies, and manufacture of animal, marine fats and oils, each with an IR of 0.7/100 FTEs. The limitations of the data were qualified by differences of definition, regional differences and information gaps. A small number of studies have reported biological and biohazard exposures and illness occurring in small businesses primarily in agriculture, health services, hospitality services and plumbing.[177] The psychosocial work environment in small workplaces has been little studied, but appears that it is dependent on the behavior of the individual owner and thus vulnerable to emotional stress.[20,178,179]

A recent study[180] examined the characteristics of lifestyle and general health status of employees of 1,761 small-scale enterprises (<50 workers) employing 71,183 workers in Japan. The results indicated that, through a comprehensive series of assessments and tests, the overall health and lifestyle status of employees in small-scale enterprises were significantly worse than employees in larger-scale enterprises (>50 workers).

6.2.4 Small business management practice: implications for OHS

The management of OHS in small businesses has been extensively reviewed.[6,11,18,44,147,148,154–156,181–183] The consensus of opinion in these studies is that management in small businesses differs from management in large organisations in that the lines of communication are shorter, the structure is simpler and commercial pressures are often felt more keenly and immediately. Moreover, it is impossible to separate OHS practices from other aspects of running a small business. The inter-relationships between the functions of operating a small business are so overlapping that a shift in one area will have immediate consequences in another. In addition, the application of the most elementary OHS remedies in a small business has to be considered alongside the weekly cashflow. Therefore, the ability to manage the business is critical to managing OHS.[44]

Lamm and Walters[44] found that issues that surround the functions of running a business (such as management, finance, compliance and employment practices) are more pronounced in a small business by virtue of their size. All functions are inter-linked and operate in tandem. They suggest the key factors affecting OHS in small businesses can be grouped under the following headings: low management and training skills, lack of resources, burden of compliance, relationship with regulatory agencies and the use of consultants, dependent relationship with large businesses and employment and OHS practices. Each of these factors will be discussed below with support from wider literature on OHS management in small businesses.

Low management and training skills

Small business owner-managers are more likely to have trade-related skills as opposed to managerial ability. They are typically from trades or ‘hands-on’ skill backgrounds and are usually very proficient at tasks and have a good understanding of the markets that their business operates within, but few have general management skills and, indeed, do not necessarily recognise their importance.[11,75,148,184]

Owner-managers are personally responsible for all management functions in their businesses and essentially become a ‘jack of all trades’. As a result, small businesses tend to operate under simple and relatively informal management structures.[11] The owner-manager is essentially the leader, and it is their role is to align employees with the organisation’s values

and to 'show how things are done', which is a type of informal training. This is typically done via practical and verbal means as opposed to via written documentation.[23,155]

Formal training is not popular in small businesses and typically only reserved for the owner-manager and established staff when inhouse expertise is lacking or when new products, services, equipment or methods are introduced to the workplace.[185,186] Health and safety training is generally uncommon in small businesses, but there are motivating factors that could encourage small businesses to undertake such training. An Australian study found that only about 20 percent of small businesses were orientated to health and safety training.[11] However, more could be motivated to undertake formal OHS training if it will financially benefit the business via, for example, increased staff retention or less business disruption following an injury or illness.[187,188]

Lack of resources

Pragmatism and financial prudence are cited as common values of small business owner-managers, as businesses are typically operated under very tight budgetary constraints.[189] One of the greatest challenges for small businesses is securing financial resources to set up the business, survive and grow.[184,185]

This has important implications from an OHS intervention perspective. Interventions, such as paying for health and safety advice, information, tools and controls, will always be implicitly or explicitly evaluated by a cost-benefit analysis.[11] Tight budgetary constraints often mean that there is a lack of financial resources to implement health and safety initiatives, such as the installation of engineering controls, safety equipment or personal protective equipment. In addition, small businesses are often unable to hire staff with specialist OHS knowledge; consequently, awareness of hazards and solutions is often low, for example, many small businesses lack the capacity or ability to identify occupational hazards and conduct surveillance.[18] Controls are therefore often decided by custom and practice and not by risk assessment.[155] Economic incentives are therefore an important encouragement for small businesses to improve health and safety practices.[190]

However, the fact that small business owners work very long hours also requires consideration. Consequently, many simply devote time to the most pressing issues and there is less time and energy for 'non-core' tasks, which health and safety is often perceived to be.[11,190]

Compliance issues

All businesses are subject to regulation and legislation; however, small businesses tend to maintain a reactive as opposed to a proactive stance to compliance activities. According to Lamm,[75] non-compliance is due to either one of a combination of factors, including economic, dissent and incompetence. Firstly, many small businesses sometimes choose not to comply with regulations because of economic factors, particularly because they are perceived to have a significantly negative financial impact on their businesses.[75] Owner-managers are likely to flout regulations, often to the detriment of worker health and safety, when the probability of being caught is low, the anticipated fine for non-compliance is minimal or when there are few economic incentives for investing resources in health and safety activities.[11]

Another major reason for non-compliance is due to dissidence, which occurs when small business owners choose not to comply with regulations that are unreasonable or when enforcement agencies treat them arbitrarily. This type of practice is likely to be common and

widespread given that many small business employers in Australia, New Zealand, the United Kingdom and the United States feel that their needs and concerns have been disregarded by respective governments.[75] Specifically, small businesses are dissatisfied that they are not consulted by government legislators, and subsequently, they often feel that legislation is not tailored to meet their needs and capabilities, as it is geared more for larger organisations.[75]

Another major reason for non-compliance is because many small businesses lack the competency to understand the implications of regulation or legislation. This is related to the fact that small businesses do not necessarily have the time or internal expertise to gain a wide and detailed understanding of the regulatory environment or because legislative obligations may be perceived as unnecessary in terms of the actual functioning of the business.[75] This is particularly apparent in terms of health and safety management, as the levels of awareness of the legislative requirements are low and employers often fail to meet statutory obligations to workers for the provision of information, training and consultation on the use of hazardous substances.[25,188]

A range of studies have identified the types of OHS information that small businesses require, the most acceptable style of guidance material, appropriate intermediaries to reach them and barriers to uptake.[147,191] Almost universally, the scientific evaluations have confirmed that 'top down' strategies communicated by public servants of one type or another, and based on written information, simply do not work, or at the very least do not work well with small businesses.[191] Indeed, in many cases, such OHS messages may result in 'tuning out' to all OHS preventive messages. Unfortunately, in a time of decreasing resources, written information mailed out to small businesses is an attractive option and hence why some OHS authorities are reluctant to admit to failure and may covertly avoid rigorous evaluation of their endeavours.

Small businesses have an oral rather than a written culture.[192] As such, a number of OHS studies have identified that small business owner-managers prefer face-to-face contact over other forms of communication, dislike reading, listen to guidance from peers and absorb industry subgroup specific information better than generic advice.[11,191,193–195]

Relationship with regulatory agencies and the use of consultants

Insurers, quality assurance programmes and regulatory agencies are important incentives to improve health and safety.[156] Owners do not trust government agencies or consultants and seek input on environmental improvements only from suppliers, other owners and customers.[11,75,196]

Dependent relationship with large businesses

Subcontracting has become much more popular since the labour market reforms and restructuring of the 1980s and 1990s, and larger customers can have a potentially positive or negative impact on the management of small businesses, particularly OHS. In a positive sense, some small businesses are obligated to adhere to strict supervisory regimes when they undertake work for larger businesses, such as staff training.[25] However, more commonly, the high levels of competition between those competing for tenders has a negative impact on health and safety standards in small businesses because employment may be insecure, remuneration may be based on output,[75] and small businesses are encouraged to 'cut corners' by ignoring health and safety issues in order meet deadlines and remain competitive.[25,190]

Employment and OHS practices

Working conditions tend to be poorer in small businesses in comparison with larger organisations as wage rates are often lower and working conditions, including health and safety, are of a comparatively lower standard.[37,197] There is also a propensity for small business owner-managers to implement practices that foster precarious employment in order to lessen the financial impact of employment regulations, such as the exploitation of women and migrant workers.[75]

The division of labour in small businesses is not as marked as it is in large organisations where there is typically role specialisation based around functional areas. Employees in small businesses often engage in regular 'hands-on' participation and learn to work in a number of positions. Due to this versatility, they are potentially exposed to a broader range of risks.[148]

However, employees in small businesses tend to be accepting of poorer work environments perhaps because of their vulnerable position in the labour market. In comparison with large firms, people employed by small businesses are more likely to have lower educational attainment, work part-time, be less than 25 or over 65 years old and be more likely to access social assistance.[198] Many are either unlikely to complain to authorities because they are afraid of the consequences or refrain as a mark of loyalty and obedience to their employer.[75]

Trade union influence in small businesses is negligible because union membership is either very low or non-existent in small businesses across most countries, decreasing the opportunities for workers to advocate for OHS.[37] According to Mayhew,[11] this lack of union presence has potentially negative implications as unions provide a channel for workers to advocate for improved workplace conditions[6,11] and leads to covert expressions of conflict, such as high labour turnover or absenteeism.[37]

A number of studies have focused on the role and participation of employees in small businesses. The principles of employee participation and involvement are embedded in the legislation and standards of most industrialised and developing countries, but reports indicate the approach is not well utilised in small enterprises.[20,44,147,181]

Overall, the reasons why small business owner-managers do not – and, indeed, cannot – prioritise OHS over production pressures are summarised as follows:[147]

- Economic survival is paramount.
- Time is money.
- The lack of expertise and logistical resources discourages attention to OHS.
- Limited knowledge of OHS Acts, regulations and codes of practice.
- Little awareness of the costs associated with poor OHS practice and no immediate penalties for poor OHS practice.
- A tendency to place OHS and injury responsibility with workers.
- Discounting and trivialisation of common risks and 'normalisation' of familiar patterns of injury.
- Dislike of abstract generic OHS information and advice and a preference for specific hazard/control approaches.
- Ideology (individualist, preference for unfettered market, low levels of unionisation).

6.2.4 Controls and interventions

In all of the literature concerning occupational health and safety and small businesses, the most recurring theme seems to be the identification of problems and challenges faced by employers, employees, enforcement agencies and researchers in relation to controls and interventions. There is a general consensus that the models developed for larger companies have proved to be ineffective and the difficulty contacting smaller firms, their geographical dispersal and their short life spans have all helped ensure that they have been left more or less to their own devices.[11,44,148,181,199]

However, attempts to address these issues have been made by the design and development of relatively simple, low-cost solutions to control exposures, particularly in relation to chemical exposures. A variety of models have been developed at the international and national levels.[168,169,200–202]

In their review of literature, Hasle and Limborg[20] identified a variety of preventive approaches that have been used with small enterprises. They report the most common being the use of different types of checklists, implementation of OHS management systems and other preventive programmes. They suggest the most successful methods appear to be action-oriented, low-cost approaches, combining health and safety with other management goals, and based on trust and dialogue.[20]

A review of intervention studies in small businesses shows varying types of approaches, and range from studies of the development of OHS systems and assessments,[148,156,183,203,204] training and educational interventions,[205–207] engineering and industrial hygiene interventions,[163,164,168,169,200,208,209] and a combination of industrial hygiene, health promotion and behavioural interventions.[11,173,210–216] A very recent evidence-based review has provided moderately strong evidence that participative ergonomics interventions can reduce musculoskeletal symptoms, injuries, workers' compensation claims and lost days from work or sickness absence.[217]

6.2.5 Potential influencers

Small businesses are influenced by a range of stakeholders in both their internal and external environments. It is acknowledged that businesses in different industries are influenced more by certain stakeholders than others, which reflects the specific structures and traditions of different trades, businesses and occupations.[183] However, the purpose here is to highlight a few of the key stakeholder groups in the small business environment that could potentially impact on health and safety management in small businesses, including customer initiatives, enforcement agencies, health and safety professionals, insurance companies, key sector approaches, suppliers, trade associations and vocational training.

Customer initiatives

The customer has the potential to strongly influence a small business's attitude to health and safety investment. Invitations to tender for work may have, amongst other enabling conditions, one of the most significant influences on the safety and health behaviour of the small business. Examples include quality assurance compliance statements and a requirement for demonstration of policies/risk assessments indicative of good health and safety practice.[218] However, to what extent is real compliance verified? It is interesting to consider in the commercial environment whether such 'enabling requirements' for projects are genuinely considered by the customer as necessary. For example, how frequently are risk assessments and policy documents genuinely considered by customers at a deep level? In the event of an

incident, the lines of liability have been clearly drawn. Does the customer really care about whether compliance is real or paperwork. The customer may be one of the most significant performance-shaping factors for the small business, yet ill motivated to exert this pressure when delivery of goods and services to budget is closer to the customer's requirements.

Enforcement

Research[31] suggests that, characteristically, small businesses are adverse to contact with the HSE regulator. They fear that 'raising one's head' will result in subsequent inspection. In this respect, the HSE inspector represents the 'stick' of the regulatory body. There is an apparent dilemma in the role of inspectors. On one hand, inspectors need to engage the small businesses in their educative role, which requires empathy with the difficulties facing the small or micro-business. On the other hand, inspectors are required to demonstrate that regulations will be enforced.[219] There is a difficult tension in performing this contradictory role. However, there is evidence that visits from inspectors are associated with positive assessment (by small and micro businesses, including ethnic minority businesses) of the financial benefits of health and safety improvements.[25] This suggests that inspectors can successfully fulfil their educative role, despite the small businesses' concern that the inspectors' enforcement powers sit uneasily with their guidance role.[220]

Health and safety professionals

Many small businesses employ the services of external consultants in the preparation and assessment of materials supporting health and safety in the workplace, for example, risk assessments and policy statements. These individuals may be in a position to positively influence the focus and processes of the small businesses. However, they are relatively expensive for the small business to engage, and therefore, contact opportunities may be low without the financial assistance seen in European health and safety schemes for small businesses.[221] In contrast, more informal support may be available through larger enterprise colleagues and associates. This may provide the small businesses with an arena to discuss health and safety processes adopted by the large enterprise and reflect on the relevance/practicality of these approaches to their business.[222]

Insurance companies

Insurers are in a very powerful and prominent position to influence small businesses.[223] They may specify conditions upon which liability insurance is granted and therefore provide a prerequisite to business operation. If the cost of insurance is considered to be a high proportion of company expenditure, then potential savings will be seen as high, providing an important motivator. The link between health and safety performance and insurance premiums needs to be perceived as direct in order to reinforce motivation for improving such performance. The HSE has moved to make this association between performance and insurance costs more explicit by developing a SME index[224] with a view to linking index scores, based on incident rates, hazard exposure and management, to employers' liability insurance. The index is currently undergoing evaluation, and findings will be reported later this year. In the meantime, there are factors that need to be considered. For instance, if there is a long delay between improvements and renewal of insurance, the strength of the motivation may be undermined.

The long latency period of some diseases contracted after exposure to hazards is problematic, as it disturbs the performance/premium connection. The strengthening of the motivation to improve health and safety performance by reducing insurance costs is contingent upon improving the measurement of performance. It remains to be seen whether this can be

successfully achieved through initiatives such as the SME index. Arguably, one of the key predictors of its success is whether insurers will actually recognise the index as a valid tool. However, the involvement of insurers in the development of the SME index assessment tool may be seen as adding credibility to the measure.[220]

More positive arguments for health and safety intervention, financial gains, reduced insurance costs, enhancing reputation and improved employee well-being may be more noticeable outcomes for a small business that has not previously experienced accident or injury.[225]

Sector key event approaches (SKEAs)

McKinney[219] undertook a research project commissioned by the HSE to investigate opportunities for effective information transfer to the small business. The project identified actions common to particular sectors, with particular reference to contact with third parties by small businesses. These were defined as sector key event approaches (SKEAs) within which the health and safety message may be introduced with the hope of more effective information transfer. Only a small number of SKEAs were identified in the sectors addressed, although this was interpreted positively by the author as an opportunity to focus on these identified actions.[220]

Suppliers

It appears that suppliers have a degree of influence on small businesses. They may query, for example, safe storage facilities for chemicals under the general provision of the Health and Safety at Work Act[226] or specific regulations, for example, manual handling.[227] However, practicality would suggest it is unlikely that much emphasis would be placed on this. Although supply chain influences can be positive in terms of health and safety practice, in the experience of a number of micro enterprises, the supply chain may have a negative effect if demands for health and safety requirements are coupled with customer demand for low prices.[25]

The supply chain and enabling certification may have a role in promoting better health and safety performance. Specification in tender documents of meaningful compliance with HSE regulations is currently sometimes adopted by organisations as a means to determine compliance. This approach may be adopted to encourage small business participation in health and safety procedures. BS 5750 was the forerunner of ISO 9000 and was one of the first commercial quality assurance systems specifications. Customers have been stated to operate a 'no BS 5750, no contract policy'.[228] However, caution should be exercised in that this strategy may inadvertently exclude some organisations as a result of the bureaucratic overhead.[228] However, a lack of formal health and safety documents does not necessarily indicate a poor approach. Moreover, the presence of health and safety policies and risk assessments may not represent a genuine and deep consideration of the organisational needs in this area. Small businesses typically operate more 'relaxed' management systems.[228] Evidence suggests, however, that both performance and efficiency are improved when more formal quality management systems are introduced.[220]

Trade association initiatives

Linking, co-ordination and subcontracting via trade associations are small business interactions through which exchange or contractual relationships may be determined. On the positive side, these may enrich safety and health through the specification of working conditions or exchange of informal advice. Negative influences may be exerted via obligations, deadlines and propagation of examples of bad practice. However, the positive

contribution of trade associations has been encouraged recently in initiatives sponsored by the European Health and Safety Agency, where there have been a large number of joint ventures between associations, health and safety organisations, and small businesses. Trade associations have also been useful in identifying and distributing health and safety material that is perceived to be more relevant to the nature and sector of certain small businesses. For example, hairdressers were more likely to read material sent to them by the Hairdressers Federation than information from the local authority or training colleges.[229]

Vocational training

This may be an important influence on health and safety in areas where there are large numbers of trainees employed, such as in the hairdressing industry. Training colleges may contribute to health and safety compliance because they have the authority to impose punishment by means of withdrawing trainees from the establishment. In one study, visits from representatives from training colleges were found to have a statistically significant impact on improving compliance with risk assessment legislation. Local authority inspections in the same study did not produce a significant influence on levels of compliance compared to those who had no visits.[229] However, it is possible that the small sample size meant there was not sufficient power to detect a significant difference. The result that intermediaries from vocational colleges may be influential is promising and suggests further investigation on the extent and nature of their contribution using a larger sample of the population.[220]

6.3 Catalogue of international occupational health and safety programmes

This section provides a catalogue of international OHS programmes designed for small businesses from Australia, the European Union and the United Kingdom, listed alphabetically in Table 13 below. This is followed by a tabular description of each programme with evaluations indicated as appropriate (Tables 14–16). Further details about each of the listed programmes are available in Appendix G.

Table 13. Catalogue of international OHS programmes for small businesses

Programme title	Location
Australia	
Business Advisory Officers	New South Wales
Confirmation Of Advice Record	
Partnerships Program for OHS Management	
Safety Ambassador Program	
Safety Solutions Rebate Program	
Safety workshops and seminars	
Serious About Safe Business Program	Queensland
Small Business Grants Scheme	
Small Business Safety Program	Victoria
WorkCover safety buses and safety trailers	New South Wales
Workplace consultations	Queensland
European Union (EU)	
Alliance for Work Safety	Germany
AUVASicher	Austria
Consultancy Network for SMEs	Germany
Contract Agreements	France
Development of Work Safety Culture	Italy
European Trans-national Project	EU wide
Improvement of Working Conditions in Ceramics Industry	Portugal
Inter-enterprise Safety Co-ordinator	France
Occupational Health Services to SMEs	Denmark
Risk Assessment in Construction Sector	Luxemburg
Risk Assessment in Printing Sector	Greece
Risk Management for SMEs	Finland
Risk Surveys and Evaluations (workshop on risk assessment)	Belgium
SME Accident Funding Scheme	EU wide
Strategic Plan in Agriculture Sector	Spain
Stress Management Information Pack	Ireland and Scotland
Workload Assessment	Netherlands
Work Codes	
United Kingdom	
COSHH Essentials	
Good Neighbour Scheme	
Medical Interventions	
Roving Safety Representatives	
Safe and Healthy Working Programme	
Safety and Support for Business	
Safety Information Centres	
Small Business Trade Association Forum	
SME Assessment Index	
Voluntary Certification (ISO 9000, BS 5750)	
Worker Health and Safety Centres	
Workplace Health Connect	
Worker Safety Advisors	

Table 14. Australian OHS small business programmes

Programme title	Description	Evaluation	Source
Business Advisory Officers	The Business Advisory Officers give one-on-one advice to clients and present workplace safety and workers' compensation workshops tailored to meet local needs. They also visit small to medium-sized businesses on request, to provide individual workplace safety and workers' compensation advice.	No evaluation information published.	WorkCover NSW 400 Kent Street Sydney NSW 2000 GPO Box 5364 Sydney NSW 2001 Client Contact Centre 13 10 50
Confirmation of advice record (CAR)	The CAR is a document intended to support and promote the advisory focus of WorkCover. It allows inspectors to provide a written record of advice during workplaces visits, which is left with the employer and employee representative.	No evaluation information published.	
Partnerships Program for OHS Management	Mentors with particular OHS and injury management (IM) strengths were partnered with mentees with corresponding OHS and IM weaknesses.	Four of the six partnerships reported being actively engaged with each other and indicated that it was a worthwhile programme. The mentee representatives from the other two partnerships were not the people who had been initially involved in the programme and felt that it may have worked but they did not know much about it.	
Safety Ambassador Program	This programme identifies small businesses that have achieved OHS, workers' compensation or injury management improvements. These 'safety ambassadors' act as change agents in their industry and promote safe business practices at a variety of forums and to influence and assist small businesses.	No evaluation information published.	
Safety Solutions	Safety Solutions Rebates is an incentive	No evaluation information published.	Safety Solutions Rebate Program

Programme title	Description	Evaluation	Source
Rebate Program	programme to encourage small business operators to work with their employees to identify safety problems and fix them. Employers who qualify for the rebate receive half the costs (excluding GST and up to $500) of adopting an effective solution to a safety problem in their workplace. The rebate is provided after the purchase or implementation of an eligible safety improvement.	The rebate programme follows other successful WorkCover rebates such as the Roll-Over Protective Structure rebate scheme in 2000–2004, which helped 10,000 farmers fit roll bars to tractors, leading to a 25 percent reduction in tractor-related trauma incidents in the first year of the scheme.	Locked Bag 2906 Lisarow NSW 2252
Safety workshops and seminars	WorkCover has conducted over 400 free seminars and workshops over the last 18 months. The Small Business Safety Program sees that programme significantly increased, with 1,500 seminars and workshops planned across New South Wales over the next three years.	No evaluation information published.	WorkCover NSW 400 Kent Street Sydney NSW 2000 GPO Box 5364 Sydney NSW 2001 Client Contact Centre 13 10 50
Serious About Safe Business Program	These workshops introduce the Serious about Safe Business initiative package, which provides small and medium-sized businesses with a simplified safety management system framework.	No evaluation information published.	Workplace Health and Safety Queensland Small Business Program GPO Box 69 Brisbane Q 4001
Small Business Grants Scheme	This scheme provides funding to assist industry associations to develop and implement health and safety outcomes within their specific industry sector.	No evaluation information published.	
Small Business Safety Program	The programme involves a three-hour assessment of the workplace by external consultants. Consultants assess the environment and provide businesses with advice on changes that can be made to improve safety in the workplace.	The Small Business Safety Program has been well received by small businesses. Nearly all respondents (97 percent) found the free health and safety assistance to be either ‘very’ or ‘quite’ useful. Just over eight in ten (83 percent) also believed the free health and safety consultation was the	The Victorian WorkCover Authority (VWA) Small Business Safety Program Study No. 13282, May 2003

Programme title	Description	Evaluation	Source
		best method of providing occupational health and safety advice to their business.	
WorkCover safety buses and safety trailers	The first WorkCover safety bus began operation in March 2006 and has taken WorkCover's free safety education and workers' compensation and injury management advice to rural and regional New South Wales.	No evaluation information published.	WorkCover NSW 400 Kent Street Sydney NSW 2000 GPO Box 5364 Sydney NSW 2001 Client Contact Centre 13 10 50
Workplace consultations	Free OHS consultations in the small business workplace, providing information and developing action plans.	No evaluation information published.	Workplace Health and Safety Queensland Small Business Program GPO Box 69 Brisbane Q 4001

Table 15. European Union OHS small business programmes

Programme title	Description	Evaluation and transferability	Source
Alliance for Work Safety, Germany	A co-operative agreement was established between two bodies; a trade federation in the sector of environmental protection in dry-cleaning and an OHS organisation. The objective was to get companies to set up their own self-monitoring systems for accident and occupational disease prevention. This was facilitated through the provision of technical support, the exchanges of ideas and experiences, and assisting companies to conduct health and safety reviews.	Despite the fact that the number of dry-cleaning companies has dropped, the number of companies who are members of the federation has remained the same. Companies are increasingly aware of the risks existing in the sector. This action could be transferred to other regions and sectors. Its success would mainly depend on existing trade organisations' prior actions.	European Agency for Safety and Health at Work (EASHW)[221]
AUVASicher: A programme to offer OHS assistance to SMEs, Austria	This preventive service, based on legal requirements and offered free to SMEs, was launched in 1999 to improve occupational risks. By 2001, out of the 288,851 SMEs, 24,000 production units had adopted the proposed approach and 146,000 hours of counselling were provided.	70 percent of the SMEs indicated that their expectations regarding assistance had been fulfilled. However, the adaptation of the AUVASicher programme to other countries seems difficult. To obtain comparable success, the programme would require the support of a national organisation that has a solid base and is recognised throughout the country. It is also based on a legislative Act that lays down the requirement for social insurance organisations to draw up this free preventive service, which would perhaps also have to be implemented.	
Consultancy Network for SMEs, Germany	The aim was to provide future SME managers with consultancy services on OHS. It comprised three phases: feasibility (2000–01), general analysis (2002–04) and launching (2004). The specific objectives were to evaluate the need for introducing the safety/health concept in consultancy for entrepreneurs; develop a process	The study has enabled entrepreneurs' requirements for basic information on OHS to be defined and suitable procedures to be developed. The effectiveness of this regional programme must be evaluated to test the possibility of transferring it to other regions or countries. This method will only have a real impact in areas where large numbers of	

Programme title	Description	Evaluation and transferability	Source
	for the implementation of result-oriented accident prevention in consultancy and develop a checklist for entrepreneurs.	small companies are being set up.	
Contract Agreements, France	This scheme, started in 1988, was designed to help SMEs undertake a true investment programme (equipment and training) by means of agreements with authorities, in order to prevent occupational injuries and improve working conditions.	Its implementation has resulted in a net reduction in the severity of occupational injuries among the signatory enterprises. A growing awareness by the trade of the importance of OHS issues has also been noted. In 2001, representatives of employers and employees decided to engage in a more global preventive approach, called the sectoral participative approach, consisting of having enterprises take charge of their own OHS problems. This assistance programme could undoubtedly be transferred. National agreements on objectives have existed in a large number of other sectors of the economy. However, to provide a real incentive to prevention, the system should be granted a sufficient allocation of funds.	
Development of Work Safety Culture, Italy	The objective of this regional initiative programme (Province of Lucca) was to fight against fatal accidents, making employee training and information an absolute priority. The programme encouraged the development of a work safety culture in SMEs thanks to the creation of a new position within each company: the safety training/information officer. During four months, eight training sessions were given to 115 trainees, and 3,000 educational sets were distributed to firms.	It is not yet possible to measure the consequences of the programme directly on the number of occupational injuries incurred in the province. The project transferability depends essentially on the chosen method, which is applicable to contexts others than those singled out in the Province of Lucca. To succeed, it is essential that partners in the project have indepth knowledge of the industrial framework in their region, as well as of the real accident prevention needs of local businesses.	
European Trans-national	The project aimed to analyse and compare working systems for involving workers and their	The main outcome was a comparative report on good practice on worker presentation and	Lansdown et al.[220]

Programme title	Description	Evaluation and transferability	Source
Project, EU wide	representatives in improving health and safety conditions in small businesses. The project focused on identifying instances of good practice, creating conditions to develop them and criteria for making them transferable to different organisational contexts of prevention in Europe.	participation, and a seminar to present the consolidated report. Overall, the project gained an understanding of needs in worker representation, resource implications and how resources might be employed. The trade union has a role in health and safety in small businesses at two main levels – the macro-economic and political level and also at the representational and operational level. At the macro-economic level and political level, the trade union can impact on the development of regulatory measures, national and sector-specific agreements and tripartite measures and in insurance association policy and influencing the political will to form preventive policies aimed at hard to reach sectors.[230] The European position with respect to unionisation and union influence appears broadly reflective of the UK perspective and opportunities for influence as indicated earlier.	
Improvement of Working Conditions in Ceramics Industry, Portugal	This campaign, which is part of the national plan of action for prevention, was launched with a view to contribute to the modernisation of businesses and to integrate occupational risk prevention into daily management. As part of the action, 29 projects were initiated in the areas of research, information and training.	The campaign will be assessed through quantitative and qualitative analyses of the projects. There are no results at present. IDICT has already promoted framework programmes drawn up by strategic objectives and areas of intervention (i.e. civil engineering, agriculture, textile industry). The campaign can be transferred to any other sector as long as the social partners and the institutions concerned are involved in its definition, implementation and assessment.	EASHW[221]
Inter-enterprise Safety Co-ordinator, France	The main objective of this project was to assist SMEs of the meat processing sector for putting into effect new safety principles aimed at	This action enabled businesses to assess the situation in terms of compliance with safety regulations and to acquire a specific methodology	

Programme title	Description	Evaluation and transferability	Source
	reducing the number of occupational injuries, through regular meetings with a safety co-ordinator over a one-year period.	for accident analysis. It also made it possible to make operators aware of prevention, to motivate them and to promote a change in mentalities. In two instances, the number of accidents was reduced. This project would be easily transferable to another region/country or to another branch of activity. The main recommendation for the implementation of such action would be to limit the duration of the approach and the number of beneficiaries within a restricted geographical area. The safety co-ordinator does not have to be an expert of the industrial sector of application. A short training period may be sufficient.	
Occupational Health Services to SMEs, Denmark	Given the difficulty in reaching SMEs and the inefficiency of the OHS services provided to them, the project aimed to develop a model of OHS service for such enterprises based on personal contact and positive approach.	56 percent of the SMEs were visited by OHS consultants; most of them gave positive feedback. It has been noted that the visited SMEs are more likely to contact the OHS services. With the help of occupational experts, some companies set up a plan to buy required equipment, others elaborated guidelines for handling chemical solvents. If this project was to be carried out in other countries, some modifications would be necessary in order to take account of the national specificities, such as legislation. Particular attention should be paid to the qualifications of the experts who should be prepared to work with SMEs.	
Risk Assessment in Construction Sector, Luxembourg	The aim was to supply SMEs in the construction sector with information about legislation and the safety rules to be applied. It simultaneously offered them a tool for analysing and preventing potential hazards on construction sites and in	600 to 800 SMEs out of a potential group of 23,000 companies purchased the CD-ROM. There has been no systematic evaluation of this action. SMEs especially appreciated the short illustrated texts related to safety requirements. The CD-ROM	

Programme title	Description	Evaluation and transferability	Source
	workshops. The tool is available online on the internet, or on a CD-ROM.	concept is entirely transferable to other European countries, as well as the risk evaluation form, since it can be used as a basis for drawing up a safety plan for construction sites as required by the corresponding European directive for temporary or mobile construction sites, as implemented in different countries. The concept could also be adapted to any other sector of activity.	
Risk Assessment in Printing Sector, Greece	This programme assessed occupational risks, the dissemination of information for better working practices and the promotion of a safer and healthier work environment in the printing industry, particularly in SMEs, which are numerous in the sector.	The action was successful considering that the study conducted allowed, for the first time, the examination of a diverse group of physical and chemical parameters in the sector, making it possible to pinpoint the most dangerous areas. This programme is transferable insofar as the design of the study can serve as a model and a basis for similar studies in other sectors.	
Risk Management for SMEs, Finland	The aim of the project was to improve overall knowledge in the different areas of risk management among the staff of the Finnish SMEs. To achieve this, a holistic risk management toolkit was developed.	The project reached 82 percent of the original aim of training SME employees. The number of trainers trained was six times higher than originally planned. The sustainability of the project has been ensured by establishing a risk management forum that has promoted the toolkit and monitored its maintenance and further development since 2001. The risk management toolkit could easily be transferred to other countries provided some modifications are made in order to take account of the local conditions (i.e. legislation, authorities).	
Risk Surveys and Evaluations (workshop on risk assessment),	Prebes, the trade association of prevention advisors in Flanders, has developed a tool that should enable small businesses to carry out their own risk survey and evaluation. Prebes has	There are no data regarding the distribution of the tool (neither by sector nor by size of enterprises). The number of participants at the seminars was fewer than expected, which can be explained by the	

Programme title	Description	Evaluation and transferability	Source
Belgium	promoted the tool at information sessions with the co-operation of the inspection services. 1,500 tools have been sold.	relative inaccessibility of the SMEs and the lack of availability of the SME leader. This tool is easily transferable. It is not designed for a particular branch of activity and can be used by any SME. It could be interesting to develop this type of tool per sector, taking into account the sector-specific risks.	
SME Accident Funding Scheme, EU wide	The SME accident funding scheme is a 5 million effort to promote the business case for prevention and provide practical information on how to prevent the disproportionately high accident rate in SMEs. Of the 450 applicants that applied for funding, 51 were chosen, covering a large range of sectors, topics, approaches, applicants and EU member states. The scheme involved a tailored approach to each specific problem.	The EU agency scheme appears to have produced a range of innovative solutions to diverse issues such as risks of explosions for metal workers and falls in charity shops. Initiatives included training, information campaigns and development of effective health and safety practices, focusing on priority hazards and high-risk sectors. One feature of the scheme is that the publication summarising the projects also included contact details for all the projects with the aim that learning can be on-going and transferable to other companies. This creates an opportunity to disseminate information without the need to go through traditional central channels and sets up a dialogue between SMEs on how to achieve good practice.	EASHW[221]; Lansdown et al.[220]
Strategic Plan in Agriculture Sector, Spain	The goal of this plan, initiated by the Sectoral Commission of the Navarre Regional Government, was to foster the inclusion of preventive management in small farms. UAGN, a trade association that took part in the Commission, decided to hire a prevention expert to promote its own programmes and is considering obtaining grants to adapt all farming equipment in Navarre. Since the plan has generated human resources and a favourable	Thanks to the plan, farmers participated in training programmes that enabled them to perform by themselves the risk assessment on their premises, and also to bring their vehicles to be inspected (80 percent). This action could be transferred provided it is planned on a local level. It should be geographically limited and involve those directly working in the sector in designing the measures to be implemented.	EASHW[221]

Programme title	Description	Evaluation and transferability	Source
	opinion towards prevention, positive effects are expected in the long term.		
Stress Management Information Pack, Ireland and Scotland	This scheme centred on the development and distribution of an information pack, providing SMEs in all sectors with guidance on best practice in stress risk management, survey tools for assessing risks associated with work-related stress and practicable advice on how to control them.	No impact evaluation has been conducted up to now but some participating organisations have stated that the use of the package has allowed them to identify sources of employee work-related stress and, consequently, to develop an action plan. The Work Positive package could be applied in a wide range of organisational/national settings although care would be necessary where there is a need to translate the questionnaires used in the risk assessment survey into other languages. For such schemes to be successful, it is desirable to have an established distribution network to disseminate the package.	
Workload Assessment, Netherlands	Work pressure being a significant problem in the retail trade, TNO Arbeid (TNO Work and Employment seeks and develops innovative approaches to work, organisation and technology, and draws on its knowledge to address conditions in the workplace) was asked to develop a measurement tool. This tool is a booklet aimed at helping employers and employees identify problems and design easy to implement solutions.	The evaluation showed that the use of the tool has been rather insignificant, which points to the fact that work pressure is not perceived as a priority in the sector. Those who used the tool appear satisfied, particularly because it improved communication between all the partners concerned. This type of tool could be transferred to other countries. It should first be used by large organisations. If it proves successful, it could be used in other structures.	
Work Codes, Netherlands	The development of branch codes was initiated in response to pressure from public health authorities. These codes are a quality assurance system, drawing up a checklist of the main aspects to be monitored in terms of quality, hygiene, environment and occupational health and safety, that provide SMEs with concrete means of fulfilling their social responsibilities	By January 2002, the codes were in use in 11,000 companies. The level of penetration varies from 10 to 75 percent according to the sectors. The degree of application of the codes is growing continually because it is also implemented in vocational training programmes. The concept of the branch code can be applied to a variety of sectors and is not restricted to SMEs. However, the approach requires that certain	

Programme title	Description	Evaluation and transferability	Source
	and engaging in sustainable business practices. Branch codes have now been drawn up for 10 sectors.	conditions be met: business processes must be sufficiently standardised; a central body must take on a co-ordinator role; a sufficient number of businesses must be prepared to maintain the standardisation and implementation process in mutual consultation; and sector-specific training should exist.	

Table 16. United Kingdom OHS small business programmes

Programme Title	Description	Evaluation	Source
COSHH Essentials	The HSE has developed an approach to workplace risk management called COSHH Essentials. It is available to intended users, that is, proprietors of small and medium-sized enterprises, both online and as a booklet. When a particular work task is analysed in COSHH Essentials, the hazard band of the chemical substance, the scale of use and the ability of the chemical substance to become airborne are integrated to allocate the work task to a control approach.	COSHH Essentials was designed to be a health-conservative approach, and the exposure bands compare well with the occupational exposure limits in the UK. Unlike the work of Tischer et al.,[231] Jones and Nicas's analysis[209] of vapour degreasing and bag filling operations does not support the view that COSHH Essentials will accurately identify operations in need of control technologies and that the control technologies will, in practice, adequately control exposures. Given the significantly different findings, we believe it is important that COSHH Essentials be tested systematically before it is promoted outside the UK.	Tischer et al.;[231] Jones and Nicas[209]
Good Neighbour Scheme	The Good Neighbour forum scheme was designed to encourage supportive relationships between large and small firms in managing health and safety. In particular, it aimed to build upon existing relationships between large firms and the smaller businesses that were contracted to supply them with goods and services.	An evaluation of the scheme was conducted by the Health and Safety Laboratory.[232] The evaluation consisted of a small-scale qualitative study, using three focused discussion groups, to elicit the opinions of representatives of participating businesses (small and medium-sized) on the usefulness of the Good Neighbour forums they had attended. Participants considered the Good Neighbour scheme to have potential in improving communication of health and safety information to small businesses. There was a widely held view that, for the optimal benefit to be derived, the regulator (HSE) would need	EASHW[221]

Programme Title	Description	Evaluation	Source
		to provide a more proactive lead, in order to maintain the momentum of the initiative. There was, however, a notable willingness amongst a number of participating large firms to commit themselves to helping smaller organisations in this way. The forums held appear to have been relatively successful, but the concept did not appear to be self-sustaining on the basis of a single meeting.	
Medical Interventions	GPs and Primary Care Trusts may operate as mechanisms providing health and safety advice, empowering workers to change problematic situations, reduce hazards and report symptoms.[233] There have been moves to increase the provision of health and safety advice in the primary care arena.	Two occupational advisory services in Newham and Sheffield were evaluated and indicated significant differences between advised and non-advised patients on a large number of health and safety-related outcomes. Benefits were found in terms of improvements and changes in the workplace and also in health improvements or stability. Workplace outcomes were related to those that were identified by the occupational health advisor (after discussion with the patient) with little or inadequate health and safety provision identified.	Jackson[233]
Roving Safety Representatives (RSR)	Eight roving safety representatives were scheduled to visit 50 volunteer farms. Health and safety consultants will visit the same amount of farms and comparisons will be made with the performance of health and safety of farms that receive no visit at all.	No evaluation information published. It is currently too early to comment on practical achievements, but uptake already demonstrates that farmers are not hostile to the initiatives as previously suggested; employers are very positive and welcome the involvement of their workforce. However, it might be argued that the main challenge will be to expand the initiative and encourage	Kirby[234]

Programme Title	Description	Evaluation	Source
		those farmers who are reluctant to take part in the scheme. Feedback from the RSRs has been positive. Communication and union support has been an important factor in sustaining the work of the RSR, which can be difficult and demanding and is qualitatively different from the work of a representative in a single workplace.	
Safe and Healthy Working Programme (SAHW)	The SAHW is an advice line set up for SMEs in Scotland.	An evaluation of the service found that a greater percentage of advice line users (88 percent of employers) reported taking action to improve OHS than those who had accessed information via the scheme's website (65 percent).[235] Improvements reported to be a direct result of advice were made in areas such as policy development, risk assessments, fire safety, chemical hazards and equipment and safety checks. The reasons given for not taking further action after receiving advice, included time constraints, lack of perceived necessity and cost. The SAHW had 42,377 visits to the website, yet only 272 queries were emailed from the site compared to 2,361 calls to the advice line. Reliance on advice lines by SMEs may indicate that these enterprises are still unclear as to how to distinguish what information is relevant to them and need further guidance.	Ward and Lancaster[235]
Safety and Support for Business (SAS)	The SAS was developed in an economically deprived area, within a large industrial city in the north-west of England. The project aimed	An independent evaluation of the scheme was conducted, and information was gathered via a combination of face-to-face and telephone	EASHW[221]

Programme Title	Description	Evaluation	Source
	to provide an infrastructure of basic health support and advice for small (<50 employees) and micro businesses (<10 employees), as part of a programme of urban regeneration for the area, a central objective of which was to address issues of social inequality in health and well-being.	interviews with representatives from a sample (n=36). A number (unstated) of companies are said to have updated their health and safety practices and policy following participation in the scheme. A number (unstated) of companies reported that participation in the scheme had increased their awareness of relevant legislation. A number (unstated) of participating businesses cited potential economic benefits arising from participating in the scheme.	
Safety Information Centres	Safety Information Centres (SICs) exist to provide a point of access to assist the SME with safety management systems. SMEs have been reported to contact SICs to seek advice in the formulation of policy documents and risk assessments.	No evaluation information published. A Safety Information Centre may provide a two-fold benefit to the SME, first, by providing practical guidance in the creation of the requisite bureaucracy of health and safety compliance, and second, by providing a broader and more strategic understanding of health and safety practice. However, as with other interventions, safety information centres have still to overcome employers' suspicion that free services lack expertise and the concern that centres have close affiliations with trade unions.	Lansdown et al.[220]
Small Business Trade Association Forum	The forum was set up to make sure that the Health and Safety Commission (HSC) and Health and Safety Executive (HSE) hear the concerns of small businesses, improve the way HSC and HSE communicate with small businesses, and consult small businesses on new initiatives and proposed changes in	The evaluation was undertaken among both trade association (TA) representatives and HSE staff to understand views of the forum's progress. Telephone interviews were conducted from 5–50 minutes duration with 27 trade association representatives and 10 HSE staff with experience of presenting topics	HSE[236]

Programme Title	Description	Evaluation	Source
	health and safety law.	to the forum. Overall, representatives were positive in their attitudes to the forum, in that the existence of the forum in itself was a step forward for small businesses and by the implicit recognition of the value of trade associations to HSE. Some felt the forum had already helped to influence HSE/HSC and shape implementation of policy, whilst others felt demonstrable effects had been confined largely to publications or communications, rather than fundamentals.	
SME Assessment Index	The SME Assessment Index[224] developed by the HSE with involvement from insurers is a web-based tool to assess health and safety. The index also gives the opportunity for benchmarking and may promote more awareness of the adequacy of the SMEs' health and safety programmes.	The tool is currently undergoing evaluation. Such internet initiatives still need to be further evaluated – more details are needed, in particular, of the nature of users, and to what extent the information provided is utilised. However, there appears to be an increasing momentum in the amount of emerging initiatives that use the web both as a provider of information and as an interactive facility to assess performance.	Wright et al.[224]
Voluntary Certification	Associated with customer qualifying requirements, for example, ISO 9000 quality certification may be one of the most effective mechanisms to ensure good health and safety practice within the SME.[218] In their study considering business interest in voluntary certification schemes, Vassie and Cox[218] reported that the majority of SMEs consulted viewed implementation of a quality management system as a key business	Focus group findings suggested that compliance with BS5750 (or more latterly, BS EN ISO 9000:2000) would bring health and safety benefits. However, the required investment would not justify the gains. Health and safety was found to be (yet again) not identified as a key business objective. It remains an interesting question that the businesses did not appear to recognise the inherent economic business advantage that	Vassie and Cox[218]

Programme Title	Description	Evaluation	Source
	objective.	certification may provide, regardless of any ancillary health and safety benefits. Vassie and Cox[218] report the three primary barriers to implementation of health and safety management systems as bureaucracy, resource requirements, and low perceptions of the importance of health and safety to the business.	
Worker Health and Safety Centres	Worker health and safety centres form another trade union-supported initiative. One example received funding from Keighley Trade Union council, the National Lottery, Bradford Health Action zone and Keighley area single generation budget. The Keighley Work Safe project aimed to provide advice on health and safety at work, workers injured or made ill by their work, free general health and safety advice, and information and training for SMEs and voluntary sector groups.	No evaluation information published. In a six-month period, 402 people (70 percent individual workers) were provided with OHS advice. Eighty percent of advice came by emails. Further, during the same period, there had been 20 visits to workplaces and homes. Work Safe visited a number of businesses involved in the small business forum to provide advice on OHS events to the employers and workers, and for the forum itself. Some attitudes of the employers were observed as a barrier.	Lansdown et al.[220]
Workplace Health Connect	It is a free, no-obligation service providing SMEs with advice on workplace health and safety. WHC aims to build the capacity for SMEs to tackle future challenges internally or with the help of recommended specialists through the transfer of occupational health and safety and return to work (OHSR) knowledge and skills direct to companies.	The Health and Safety Executive (HSE) commissioned an evaluation of the project – a process evaluation of service delivery (including costs) and service penetration and an impact evaluation of the initiative in terms of intermediate and final outcome measures. The main message from this analysis is that the service continues to receive a positive response from employers. In addition, the levels of advice line calls and referrals onto free problem-solving visits from qualified	HSE[237]

Programme Title	Description	Evaluation	Source
		advisors are both increasing, demonstrating that leads are followed through effectively by staff at all levels of service delivery. HSE is expecting the final evaluation report to be delivered in January 2009.	
Worker Safety Advisors (WSA)	Some projects have experimented with multi-party collaboration to enhance health and safety practice. One scheme considered main five sectors in which there were particular problems with worker involvement and participation, namely small automotive/fabrication, civil construction, hospitality (notably public houses), retail and the voluntary sector. The HSE was responsible for recruiting employer volunteers; the TUC recruited the WSAs.	No evaluation information published. Practical experience rather than purely theoretical knowledge was seen as crucial in winning the support of the companies. Adequate administrative and technical support from the trade union was seen by the TUC to be crucial. Outcomes observed from the pilot included improvements in approaches to health and safety, increased internal communication and consultation on health and safety matters, and new structures developed to support health and safety activity.	Shaw and Turner[238]

6.4 Summary

The key conclusions from the review of the international literature are as follows:

- The research literature is fragmented, and the focus of the research is diverse and disparate. Only until very recently has the research been examined to identify effective approaches to OHS in small businesses (over the last 10 years).
- Local, national and international agencies have been established to promote the establishment and development of small businesses. However, adequate and effective OHS resources and support for small businesses have not been provided.
- The work environment in small businesses is generally shaped by the industry in which the business operates. There are little data on the physical characteristics of these work environments and limited research on the owners' or employees' interaction with these.
- The range of hazards and exposures encountered in small businesses are reported to be extensive and excessive. The majority of the research data and literature on small businesses deal with injury. The extent of published data on health hazard exposures in small workplaces is extremely limited.
- Data from small businesses on the acute and chronic effects of exposure and the incidence and prevalence of ill health and occupational disease are even harder to find in the published literature.
- Recent research has indicated that, through a comprehensive series of assessments and tests, the overall health and lifestyle status of employees in small-scale enterprises were significantly worse than employees in larger scale enterprises (>50 workers).
- The psychosocial work environment in small workplaces has been little studied but appears very dependent on the behaviour of the individual owner.
- A variety of risk assessment methodologies and techniques have been developed specifically for use in small enterprises where physical and chemical exposures occur. These all tend to emphasise a relatively simple, low-cost approach to risk assessment that leads on to the application of a range of controls and preventive strategies.
- The most recurring theme seems to be the identification of problems and challenges faced by employers, employees, enforcement agencies and researchers in relation to controls and interventions.
- There is a general consensus that the models developed for larger companies have proved to be ineffective with small businesses. However, attempts to address these issues have been made by the design and development of relatively simple, low-cost solutions to control exposures, particularly in relation to chemical exposures. The most successful methods appear to be action-oriented, low-cost approaches, combining health and safety with other management goals, and based on trust and dialogue.
- The management of OHS in small businesses has been extensively reviewed. The consensus of opinion in these studies is that management in small businesses differs from management in large organisations in that the lines of communication are shorter, the structure is simpler and commercial pressures are often felt more keenly and immediately.
- It is impossible to separate OHS practices from other aspects of running a small business. Characterisations of small businesses include:
    - communications are oral and not written

    - dependency on suppliers for information
    - literacy is generally poor
    - limited knowledge of OHS Acts, regulations and codes of practice
    - a tendency to place OHS and injury responsibility with workers
    - a belief exists that the chemicals being worked with are not dangerous
    - poor knowledge of health effects
    - better perception of acute rather than long-term health effects
    - controls are decided by custom and practice and not by risk assessment
    - economic survival is paramount
    - time is money.
- A number of studies have focused on the role, involvement and participation of employees in the small business, but reports indicate the approach is not well utilised in small enterprises.
- Key factors affecting OHS in the small business sector can be grouped under the following headings:
    - Low management and training skills.
    - Lack of resources.
    - Burden of compliance.
    - Relationship with regulatory agencies and the use of consultants.
    - Dependent relationship with large businesses.
    - Employment and OHS practices.

It is difficult to reach small businesses and even more difficult to get them to act. However, it is not impossible. For a scheme/programme to be successful, it should:

- focus on a particular sector or risk
- be appropriate: neither too complicated nor too expensive
- have the involvement of different partners (employers, employer associations, workers, trade unions) in its planning and implementation
- measure its adequacy by assessing the needs before the action or by carrying out a systematic evaluation of its effects afterwards
- offer support free of charge or at a minimal cost
- help to create an OHS prevention culture in small businesses
- combine active interventions with practical documentation and tools.

The consensus of opinion in these studies is that management in small businesses differs from management in large organisations in that the lines of communication are shorter, the structure is simpler and commercial pressures are often felt more keenly and immediately. Moreover, it is impossible to separate OHS practices from other aspects of running a small business. The inter-relationships between the functions of operating a small business are so tight that a shift in one area will have immediate consequences in another. The application of the most elementary OHS remedies in a small business have to be considered alongside the weekly cash flow. Therefore, the ability to manage the business is critical to managing OHS.[44]

Lansdown et al.[220] report that European initiatives have proven promising, in that examples of good practice were derived from small businesses rather than from larger enterprises. For example, the small business funding initiative[221] has produced some innovative schemes to improve health and safety. Arguably, such examples should be perceived to be more directly relevant to the average small business than solutions that have been found in larger enterprises. However, because of their recency, these

initiatives have not been assessed in the long term. Sustainability questions remain, including generalisation of good practice to small businesses, which do not share the same level of motivation to improve health and safety performance, and this may be problematic. Good practice within the small business, in the face of the constraints and obstacles outlined in this review, needs to be further explored.[220]

7. Implications for OHS in small businesses in New Zealand

This section summarises the key issues from the different perspectives presented in each of the previous sections by identifying common themes and their implications for strategic activities associated with efforts to improve occupational health and safety practices in small businesses in New Zealand.

7.1 Importance of small businesses to the New Zealand economy

Over the last 30 years, small businesses have received growing recognition as a valid form of economic activity in all parts of the world – with the potential to contribute to economic prosperity as well as social development. These contribute both to the overall economy in a number of measurable ways (employment and GDP) as well as through providing services to the local and regional communities where they are based. This contribution is now well recognised, and in recent decades, more attention has been directed at understanding the reasons for the existence of small firms and understanding how they differ from large firms. Small businesses are not simply infantile large firms – they have a distinct and separate role to play in an economy.

Like most other modern economies, New Zealand is predominantly a nation of small businesses. About 97 percent of all businesses in New Zealand are small businesses (i.e. employ 20 or fewer people) whilst 89 percent employ five or fewer people and 68 percent have no employees (i.e. they are run by a single owner-manager or by one or more working proprietors).

Small businesses contribute to employment in a significant way, particularly in small towns or rural locations. They account for 32 percent of total employment in New Zealand and have a share of about 33 percent of total national sales and income.

7.2 Characteristics of small businesses

There are a number of identifiable stages related to size in the development of a business where management practices change from sole owner-managership, to beginning to employ staff, to chiefly employing friends and/or family, and then to a size where the 'span of control' is too large for the owner-manager and where a degree of formality becomes necessary, increasingly as the business become larger. These stages of growth demand different management practices. Management in small businesses differs from management in large organisations in that the lines of communication are shorter, the structure is simpler and commercial pressures are often felt more keenly and immediately.

In general, small businesses are characterised by management by the owner in a personalised (non-formal) manner, being independent (i.e. not a subsidiary of a larger company), having a limited market share and high resource constraints, operating under extreme financial pressure with high start-up costs and within tight profit margins and having a high potential for failure (i.e. they may have a short life-cycle). They have limited access to external sources of advice and support (and, hence, are reliant on trusted relationships) and to business information/expertise. They also generally lack

formal documentation (for OHS in particular) but have a high level of personal subject-specific technical knowledge and expertise. The management style suffers from lack of acumen, experience and training and tends to involve predominantly oral communication. They are generally at a relative disadvantage due to economies of scale, are relatively isolated and geographically scattered.

Small businesses commonly employ (unpaid and trusted) family/friends or seasonal, casual, mobile or part-time (migrant, female or youth and poorly skilled) non-unionised workers, often on individual contracts. They often suffer from skill shortages. Staff wages are often low (or sometimes zero in the case of family). Jobs are less secure. Working conditions are often poorer than in larger businesses, although job satisfaction and the psychosocial working environment is commonly superior.

7.3 Managing OHS in small businesses

It is impossible to separate OHS practices from other aspects of running a small business.

The main characteristics of OHS management systems in small businesses are the use of oral and not written communications, dependency on suppliers for information, limited knowledge of OHS Acts, regulations and codes of practice, a tendency to place OHS and injury responsibility with workers, a belief that the chemicals being worked with are not dangerous, poor knowledge of health effects, better perception of acute rather than long-term health effects, hazard controls decided by custom and practice and not by risk assessment, and economic survival being paramount. Small business owners work very long hours and devote time to the most pressing issues. There is less time and energy for 'non-core' tasks, which OHS is often perceived to be.

Key factors affecting OHS in the small businesses include their low level of management and training skills, a lack of resources, the burden of compliance with regulations and codes and so on, poor relationship with regulatory agencies, the cost of using OHS consultants, dependency on large businesses, and difficulties in employment and implementing and understanding good OHS practices. The relevance of participation of employees in OHS management practices in small businesses is not well understood.

The New Zealand case studies described in this report provided a useful corroborative description of many of the issues identified by the international review and of practical issues faced by small businesses in managing OHS.

In general, the owner-managers did not know much about OHS legislation. They found it difficult to integrate formal OHS management systems into their business practices. Their background, particularly their education and work experience, affected their capacity to develop OHS management systems. Those with a high level of knowledge about OHS management systems understood the benefits and were better able to manage OHS in practice and tended to more commonly adopt a preventive approach. Sometimes, this was encouraged by external pressures, such as from customers, so that OHS management systems were put in place, but this did not always translate to their actual use. Thus, OHS was mainly managed and communicated orally or with the use of simple and accessible tools, for example, an onsite whiteboard as a hazard register on a

construction site. Otherwise, hazard management was mainly reactive; that is, controls were commonly put in place after an accident or incident. The cause of an injury or accident was mostly considered to be a personal failure by the victim. The control of hazards was mainly focused on behaviour change and the use of personal protective equipment, with safety systems reliant largely on participative trust between the owner and employee and decided by customary practice rather than by risk assessments.

The main drivers for the implementation of OHS management systems in the cases examined in the present report were demands from customers and clients, the owner-manager's prior experience with OHS (particularly if they considered it as cost-effective) and a desire to avoid receiving improvement notices from the Department of Labour inspectors. The main factors influencing the adoption of 'good' OHS practices were from large customers (which acted as an economic incentive as it could influence whether or not they got a contract), industry certification schemes, their peers and family and their own prior experience. The main barriers to preventing adoption of good practice were tight financial margins, high investment costs, conflict with production work and a lack of reliable employees.

Most knew about ACC's Workplace Safety Discount Scheme, but there was little incentive to participate as it was perceived as being too time-consuming and any savings marginal at best.

7.4 Extent of OHS burden in small businesses

In general, the number of work-related injuries, fatalities and illnesses in New Zealand is high compared to other OECD countries. For example, similar jurisdictions, such as Victoria and Queensland, have half the number of occupational fatalities compared to New Zealand. However, there is growing evidence that those working in small businesses are more frequently exposed to hazardous situations and suffer more work-related injuries and illnesses than those working in large businesses. As New Zealand government OHS statistics are not analysed by size of firm and different institutions use different classifications in compiling their descriptive statistics, it is difficult to make conclusive statements about the levels of injury and illness in small businesses. Consequently, there is probably a high level of under-reporting for small businesses. In addition, there is a focus on injury and fatality, with less emphasis on ill health and diseases, for which data for small businesses are lacking. There is a need for a consistent and efficient way of gathering data for small businesses. A unified clear definition of small business size would help in this regard.

The average cost per case of six illustrative small business cases in a report by the Department of Labour was $66,449.[61] An estimate of the relative economic burden for small businesses may be derived by calculating the fraction of the overall economic cost estimates of Pezzullo and Crook[2] ($20.9 billion) as a percentage of the total number of employees in small businesses with an employee count of 20 or less (32 percent). This would give a very crude estimate of the relative economic burden for small businesses in New Zealand of $6.7 billion.

Government agencies do not routinely collect data on the number of people in a business but ACC estimate business size from liable earnings and estimated employee count (based on total company wages and salaries divided by the average annual wage

rate). Using this approach, ACC data for 2008 suggest that small businesses account for about 50 percent of their levies ($3.3 billion per annum) and ultimate claim costs ($2.6 billion per annum). Application of this relative burden (50.3 percent) to the full economic cost burden estimated by Pezzullo and Crook[2] would provide an estimated relative economic burden for small businesses of $10.5 billion per annum. In view of the lack of suitable data in New Zealand, this is our current 'best estimate' of the economic burden on OHS in small businesses. In order to be able to be better able to calculate the relative economic burden attributable to small businesses, ACC should develop a mechanism to identify small businesses based on employee count/number of full-time equivalent staff. In summary, the relative national economic burden of OHS for small businesses in New Zealand is unknown. Moreover, it is very difficult to determine because of a lack of suitable data.

7.5 Small business OHS intervention programmes

An OHS intervention can be defined as "…an attempt to change how things are done in order to improve safety. Within the workplace it could be any new program, practice, or initiative intended to improve safety (for example, engineering intervention, training program, administrative procedure)".[123]

Factors that encourage small business stakeholders to address OHS improvements via intervention programmes include recruitment and retention of good (experienced/skilled) staff, a diversified and older workforce, the need to respond to changes in the marketplace and committed and competent top management who ensure that quality and OHS standards are continually improved.

OHS interventions may be divided into two groups: active and passive. Active interventions typically require an individual to be 'persuaded' to refrain from unhealthy or unsafe actions.[125] Such an approach is consistent with Heinrich's domino theory model and Haddon's matrix model of accident and illness causation[126] – models that have had a great deal of currency amongst ACC managers in the 1980s and 1990s. Passive interventions are generally regarded as ones that require no individual action from the potential victim but instead focus on implementing environmental modifications, for example, ensuring that all hazardous machinery has suitable guards. Passive interventions are more effective than active ones.[125] In addition, safety interventions should involve different aspects and levels of the organisation, such as production and planning and key employees.

The international and national literature indicates that, although local national and international agencies have been established to promote the establishment and development of small businesses, adequate and effective OHS resources and support for small businesses have not generally been provided. A recurring theme in the literature seems to be the identification of problems and challenges faced by employers, employees, enforcement agencies and researchers in relation to controls and interventions. There is a general consensus that the OHS intervention models developed for larger companies are ineffective with small businesses, and the difficulty contacting smaller firms, their geographical dispersal and their short life spans have all helped ensure that they have been left more or less to their own devices. However, attempts to address these issues have been made by the design and development of relatively simple low-cost solutions to control exposures, particularly in relation to chemical exposures.

A variety of models and preventive approaches have been developed at the international and national levels for use with small enterprises,[20,168,169,200–202] the most common being the use of different types of checklists, implementation of OHS management systems and other preventive programmes. Hasle and Limborg[20] suggest the most successful methods appear to be action-oriented low-cost approaches, combining health and safety with other management goals, and based on trust and dialogue. Other approaches include: training and educational interventions,[205–207] engineering and industrial hygiene interventions,[163,164,168,169,200,208,209] and a combination of industrial hygiene, health promotion and behavioural interventions.[11,172,173,211–216] A very recent evidence-based review has provided moderately strong evidence that participative ergonomics interventions can reduce musculoskeletal symptoms, injuries, workers' compensation claims and lost days from work or sickness absence.[217]

Small businesses are influenced by a range of stakeholders in both their internal and external environments.[183] Key stakeholder groups that influence OHS management in small businesses include customer initiatives, enforcement agencies, health and safety professionals, insurance companies, key sector approaches, suppliers, trade associations and vocational training. This report used and advocates the wider consideration of these factors within the stakeholder/influencer framework model of Hasle and Limborg[20] (described in Section 1).

7.6 Small business OHS intervention programmes in New Zealand

In 2005, the Labour Government recognised small businesses as a national priority in strategic health and safety efforts in the *Workplace Health and Safety Strategy for New Zealand to 2015*,[3] indicating that it is an area to which the government wished to direct considerable resources. It included a strategic framework to direct the activities of stakeholders, including central and local government, industry organisations, unions and employers. However, there appears to be no nationally co-ordinated approach to the development of OHS interventions for small businesses in New Zealand.

Although this report provides a catalogue of most of the governmental OHS intervention programmes/schemes aimed at small businesses in New Zealand (see Table 11), the evidence base for any rationales for their development and maintenance is largely unclear. The main driver for ACC-initiated programmes is generally based on claims data. However, the other main catalysts for their introduction seem to be either public and/or political pressure (for example, submissions in response to government select committee hearings) or as a result of trends perceived to be socially unacceptable (for example, a rise in a particular chemical-induced illness associated with a small business-dominated industry). This is consonant with the typical catalysts and drivers that spur employers to introduce and maintain OHS improvements, identified as the consequences of traumatic incidents, a significant business juncture, management's desire to change and improve, often for financial reasons, and competition and the lack of economies of scale.[121]

An example of a government agency attempting to address the needs of small businesses on their terms is the formation of small business units, such as the Inland Revenue Department, as a way of recognising the interests of the small businesses. As stated in the Inland Revenue Department Annual report:[239] "Small and Medium

Enterprise (SME) team… [act] as champions for SMEs, ensuring that the "voice of small business" is heard and considered". Other joint central and local government initiatives, such as business.govt.nz, provide those operating in small businesses with mentoring and advice on a range of topics, including OHS.

7.7 Limitations of New Zealand small business OHS intervention programmes

Developing and implementing OHS interventions for heterogeneous and geographically scattered small businesses in New Zealand is difficult for a number of reasons. Small businesses are often hard to reach and not easily motivated if the intervention has few extrinsic benefits.[11,45,130,131] Small businesses often have limited internal and external communication mechanisms as a result of poor management and a low level of participation in business and trade associations.[21] It is rare for most New Zealand small businesses to have regular contact with an inspector from the Department of Labour.[6,75] Proactive visits to workplaces by the Department of Labour's health and safety inspectors have decreased from 26,405 in 1994/95[4] to around 5,000 currently.[5] Overall, there are generally a number of difficulties associated with attempts to ascertain whether or not specific OHS programmes or interventions designed for small businesses have been successful.

First, there is a lack of rigorous evaluations on New Zealand OHS programmes and interventions, primarily because, when the initiative is developed, there is little or no provision for any evaluation to be undertaken. Instead, there is a reliance on subsequent trends in injury and illness data specific to the hazard or industry to become the de facto measure of the success or failure of the OHS initiative.

Second, most of the OHS programmes and interventions were designed around industry-specific workplace hazards and thus the focus of the resultant evaluation (if indeed there ever was one) will be on the success or failure of injury and illness reduction rather than the uptake of the initiative by the small business community. While it could be argued that reduced hazard-specific injury and illness rates have some relevance to the small business sector given their dominant presence in New Zealand business, research clearly indicates that capturing reliable injury and illness data from small businesses is extremely difficult.[45,114]

The majority of the research data and literature deals with injury. The extent of published data on health hazard exposures in small workplaces is extremely limited. Data from small businesses on the acute and chronic effects of exposure and the incidence and prevalence of ill health and occupational disease are hard to find. It is likely that the situation in New Zealand is similar to that reported by Sorensen et al.,[10] who indicate that the overall health and lifestyle status of employees in small businesses is significantly worse than employees in larger scale enterprises and the psychosocial work environment appears to be dependent on the behaviour of the individual owner and possibly better. These factors should be considered as drivers for intervention development for small businesses in New Zealand.

The third problem is that the information regarding OHS programmes and interventions is gathered, assembled and controlled by those with a vested interest in their success. If

an evaluation has been completed on a particular OHS initiative, the reports are held by the respective agencies or associations, and few, if any, have been released publicly. More disturbingly, injury data that could provide some indication of the merits of an OHS initiative are either very dated (typically five years old), inconsistent or meaningless, or all three. In addition, it is difficult to identify from the information available what was the criteria of success and how it was to be measured; that is, are the success criteria based on a reduction of injuries and illnesses, or a higher level of compliance, or increased participation in a training programme, as was the case with the FarmSafe programme?

The fourth problem concerns the inherent biases in this study, which have manifested themselves in two ways. The first bias that occurs is the 'Hawthorne' effect, whereby the interviewee is keen to give answers that he or she believes will be palatable to the interviewer. The second inherent bias is that, as the stakeholders invariably had a vested interest in the success of the OHS initiative, critical comments were difficult, if not impossible, to obtain.

The final problem in determining the success or failure of small business OHS programmes and interventions is the frequent absence of intervention research principles outlined in Appendix E of this report. As stated earlier, while there are distinct phases in the process of implementing an OHS intervention and its evaluation, it is crucial that an intervention and its evaluation be planned simultaneously and that the evaluation design and its methods be decided before the intervention is introduced (see Robson et al.[123] p.6). Moreover, the evaluation must take place in tandem with the implementation of the initiative in order to inform the development of the initiative; that is, there must be an integrated approach to evaluations/effectiveness research.

The New Zealand interventions in small businesses have largely been active in nature, whereas a more passive style would likely be more effective. In addition, a greater focus on macro-level (organisational) interventions would more likely be effective.

7.8 Success factors for OHS programmes/interventions

For government agencies, a key feature concerning OHS management system programmes for small businesses is that it is difficult to reach small businesses and even more difficult to get them to act. For a scheme/programme to be successful, it should focus on a particular sector or risk, be appropriate (neither too complicated nor too expensive), have the involvement of different partners (employers, employer associations, workers, trade unions) in its planning and implementation, measure its adequacy by assessing the needs before the action or by carrying out a systematic evaluation of its effects afterwards, offer support free of charge or at a minimal cost, help to create an OHS prevention culture and combine active interventions with practical documentation and tools. The most successful solutions appear to be action-oriented low-cost approaches, combining health and safety with other management goals, and based on trust and dialogue.

There is also recognition that, in order for useful OHS interventions to be successful, they need to be integrated with behavioural efforts and include the co-operation and collaboration within the organisation and between industry organisations and government agencies.[128] The inter-relationships between the business sector, the

government agency and the intermediary role played by OHS advisors and so on[44] are very important to the success of OHS advisory and information interventions. There is a symbiotic relationship between the OHS advisor and the business, as both appear to benefit from each other.

Some European initiatives have proven promising, in which examples of good practice were derived from small businesses rather than from larger enterprises. For example, the small business funding initiative[221] has produced some innovative schemes to improve health and safety. However, because of their recency these initiatives have not been assessed in the long term. Sustainability questions remain, including generalisation of good practice to small businesses, which do not share the same level of motivation to improve health and safety performance as larger businesses. Good practice within the small business, in the face of the constraints and obstacles outlined in this review, needs to be further explored.[220]

Based on the stakeholder interviews in the present report, there were a number of factors that were perceived to contribute to the success of OHS initiatives in New Zealand. These were grassroots/community commitment, mentoring, and succession planning.

Grassroots/community commitment could be fostered in a number of ways: by government agencies (for example, the Cleaner Production Project) or industry associations (for example, GROWSAFE) or a collaborative approach (for example, FarmSafe). Involving employers and employees as well as other interested parties, such as their family members, can have a powerful impact on the health and safety within the industry.

The use of mentors in OHS initiatives is well documented in the literature and was commented on positively in the stakeholder interviews. This involves engaging respected industry stalwarts – who have both industry experience and knowledge and commitment to health and safety – to act as mentors within the industry, working alongside both employers and employees to improve their workplace health and safety. While mentoring is resource-intensive, the approach can work well.

Many of the New Zealand OHS initiatives were reliant on one or more protagonists who worked either within the public sector or industry. It was clear that the continuation of the initiative was reliant, in part, on their support and drive. However, unless there is a succession plan to replace key people, it is likely that any OHS initiative will stall.

7.9 Recommendations for OHS programme design and evaluation

Despite important differences between international approaches to the improvement of OHS management practices due to differing historical and extant OHS structures and regulatory environments, Eakin et al.[6] have identified a number of strategic principles that are important for the successful implementation of OHS intervention programmes for small businesses:

- Any OHS intervention programme should be designed to be sustainable in the long term.
- OHS intervention programmes should have an underpinning evidence-based rationale.

- A rigorous evidence-based approach for evaluating the efficacy of OHS interventions should be built into the development and introduction of any OHS intervention programmes.
- An OHS management approach to injury/illness prevention that accommodates small business owner-managers on their own terms, adapting to and taking cues from 'below' – the community and the workplace – is more likely to be successful than a top-down externally imposed regulatory approach.
- Approaches that embrace positive reinforcement of existing (good) OHS practices, legitimisation of the owner's concerns and an accommodative posture towards workplace 'reality' and the employer's frame of reference will be more effective than negative enforcement approaches.
- Strategies of social integration and social influence should be used to engage employers.
- Economics-based motivational arguments and techniques are likely to be more successful in improving OHS management practices.
- The positive aspects of OHS management resident within small businesses should be mobilised, rather than just focusing on removal of apparent 'barriers'. This will require application of an approach that provides for gaining a thorough business-specific understanding of the organisational, business and cultural realities of the small business 'life'.
- Solutions for small business OHS problems must be conceived in relation to the owner's perspectives, such as being low/no cost (or better real – i.e. substantial – financial incentives), non-threatening, enhancing business performance and sensitive to business needs.
- Participative worker participation in OHS management practices should generally be encouraged in principle, but since the evidence relating to the efficacy of this approach is uncertain, there should be national support for systematic study of this approach.
- The prevailing education-centred 'through the front door' approach to small business OHS promotion is unlikely to adequately address the needs of many of the small business employees (for example, casual/part-time, migrant, youth). Behavioural change strategies, such as community and organisational development, and alternative approaches to dissemination of knowledge, such as the use of public media channels, should be considered.
- The success of small business OHS promotion initiatives appears dependent on the relationship established between an OHS professional and the owner-manager and the workplace. Thus, it will not only be necessary to provide sufficient numbers of appropriately trained and qualified OHS professionals, but the nature of their training will need to reflect the need for relationship management as well as the usual appropriate technical OHS qualifications.

8. Strategic issues

New Zealand government departments and agencies

- The *Workplace Health and Safety Strategy for New Zealand to 2015* (WHSS) identifies small businesses as a national priority. The need for a coherent national policy on occupational health and safety has been further recognised by New Zealand's recent ratification of the International Labour Organisation Convention 155 on occupational health and safety and the working environment. The convention signals New Zealand's commitment to the ongoing promotion of improved health and safety in workplaces, including small businesses. However, to date, there is little reported evidence of the progress achieved in relation to OHS and small businesses in New Zealand. The outcomes in relation to achieving the strategy for small businesses reported in the WHSS report on progress for 2006/2007 appear to be ad hoc and not link linked to any overarching strategy.
- There is a need for an integrated cohesive approach between government agencies including the Department of Labour, ACC and Ministry of Economic Development to improving OHS management in small businesses. Co-operation with stakeholders, such as industry organisations and other influencers in the small business environment, is also essential.
- Government agencies need to take into account the changing nature of work in planning and delivering services to small businesses. This involves consideration of precarious and informal employment and other forms of contract work. It is recognised that vulnerable workers (such as casualised labour, older workers, new migrants and people with low literacy), many of whom are employed in small businesses, require special attention and protection in terms of their health and safety.
- A major challenge is how to reconcile contradictory demands: the need for ongoing, individualised, personalised (and time-consuming) service to a large and dispersed sector of the workforce, with limited resources.
- The Robens philosophy, upon which the New Zealand legislative framework for OHS is based, requires government agencies administering the framework to provide support and assistance to businesses, particularly small businesses. There is little evidence that small businesses are supported in this way. In addition, this also questions the efficacy of the performance-based framework of the current OHS legislation.
- Although a commonly used strategy, it is unclear if and to what extent the economic model of motivation for small businesses is effective. This issue needs greater consideration in relation to determining the strategies that are best suited to improving working conditions in small businesses.
- Consideration should be given to using non-OHS professionals or intermediaries in the supply chain to deliver OHS advice and information. This is one example of the use of external influencers, which should be small business or sector-specific. This 'side-car' approach relies on the interests that business professionals, such as accountants, have in securing potentially lucrative consultancy work in an under-serviced small business sector. The consultants' efforts to develop their OHS expertise and to service small businesses for their

own economic gain may offer serendipitous opportunities for furthering the goals of OHS agencies.

- A core strategic device in the provision and management of limited OHS resources to small businesses is that of 'partnership' in the form of joint funding schemes or 'piggy-backing' OHS interventions on to existing distribution or communication systems.

Surveillance

- The crude estimates of burden of injury and disease attributed to small businesses appear to be very significant. Data available are primarily related to fatal and non-fatal injuries and likely under-estimates the extent of the burden. The burden of occupational disease attributable to hazardous exposures in small businesses is unknown. The full extent of this burden will inevitably require government agencies to reassess their priorities and resources in relation to small businesses.
- There is currently a lack of reliable OHS data about New Zealand small businesses. Strategic issues include:
  - lack of a unified definition of a small business
  - identifying and contacting small businesses
  - limited data on injury and occupational disease
  - limited co-ordination between agencies.

Workforce capability

- There is a need to enhance and broaden the expertise in key relevant discipline areas relating to OHS management in small businesses, intervention effectiveness and evaluation research in government departments.

Research

Research is required to:

- evaluate the effectiveness of current OHS programmes for small businesses in New Zealand
- investigate how small businesses in New Zealand manage OHS
- understand employee participatory processes for OHS management in small businesses
- determine the nature and extent of hazardous physical and psychosocial exposures in the small workplace in order to identify priority areas to direct preventive interventions
- determine the efficacy of preventive interventions to reduce incidence and prevalence of fatal and non-fatal injury and disease in small workplaces in New Zealand
- determine why some small businesses have more proactive OHS management than others, using the 'success case' methodology[240]
- determine how actors in the supply chain can contribute to improving and influencing how small businesses manage OHS and how government agencies can initiate and facilitate this process
- undertake a targeted industry case study of the implementation of known success factors for improving OHS management in small businesses
- investigate the health and safety of precarious workers in small businesses.

9. Appendices

Appendix A: Acknowledgement of key informants

The research team would like to express their sincere gratitude to the individuals and organisations who participated in this project, listed in alphabetic order below.

International peer review panel

- Dr Ann-Beth Antonsson
  Swedish Environmental Research Institute, Stockholm, Sweden

- Professor Joan Eakin
  Toronto University, Canada

- Associate Professor Peter Hasle
  Director of DAVID, Centre for Research in Production, Management, and Work Environment in Small Enterprises, National Research Centre for the Working Environment, Copenhagen, Denmark

- Associate Professor Melissa Perry
  Harvard School of Public Health, Boston, USA

- Associate Professor Dino Pisaniello
  School for Public Health, Adelaide University, Australia.

- Professor Michael Quinlan
  School of Organisation and Management, University of New South Wales, Australia

- Professor David Walters
  Director of the Centre for the Work Environment, Cardiff University, United Kingdom

New Zealand

- Dr Jeremy Hayman, Senior Lecturer at Auckland University of Technology Business School (for conducting the fishing case study interview)

Organisations

- Accident Compensation Corporation
- AgResearch Farming Food and Health
- Australasian Association for Quality in Health Care
- Boating Industry Training Organisation
- Department of Labour
- Employers and Manufacturers Association
- Engineers, Printers and Manufacturers Union
- Environmental Risk Management Authority
- FarmSafe
- FishSAFE
- Forest Industries Training Education Council
- Forestry Contractors Association

- Hawke's Bay Fruit Growers Association New Zealand
- Horticulture New Zealand
- Independent Practitioners Association Council
- Land Transport NZ
- Marine Industry Association
- Maritime New Zealand
- Ministry of Agriculture and Forestry
- Ministry of Fisheries
- Nelson Marlborough Institute of Technology
- NZ Dairy Workers Union
- New Zealand Civil Aviation Authority
- New Zealand Construction Industry Council
- New Zealand Council of Trade Unions
- New Zealand Fishing Industry Guild
- New Zealand Forest Owners Association
- New Zealand Road Transport Association
- New Zealand Rural General Practice Network
- New Zealand Seafood Industry Council
- Nursery and Garden Industry Association
- Pipfruit NZ Incorporated
- Port Nelson Fishermen's Association
- Registered Master Builders Federation
- Rural Doctors Northern Rural General Practice Consortium Inc.
- Safeguard
- Site Safe
- Scion
- Statistics New Zealand
- The Royal New Zealand College of General Practitioners
- Waitakere City Council
- WorkCover Victoria, Australia

Small business owners

The research team wishes to preserve the anonymity of the small business owners who participated in the case studies, but would particularly like to thank them for the time they set aside during their working day to speak so openly about their businesses and occupational health and safety.

Appendix B: ACC data for small and large employer earnings, levies and costs

Small and large employer earnings, levies and costs							
AS AT 31 MARCH 2008							
		Levy year (31 March end)					
Employer type	Data type	2002	2003	2004	2005	2006	2007
Self-employed	Number of employers	709,214	738,893	719,892	702,366	661,522	597,073
	Employees (estimate)	337,048	339,220	329,552	319,614	314,006	316,807
	Wages/salaries	$6,997,962,562	$7,087,045,140	$6,714,510,638	$6,644,718,534	$6,697,415,747	$6,524,706,642
	Net standard levy	$87,670,196	$114,303,450	$112,196,730	$104,590,052	$114,313,568	$124,983,165
	Ultimate claim cost	$55,018,861	$67,229,915	$65,091,772	$62,877,279	$72,374,179	$76,144,086
Small employers	Number of employers	481,499	517,556	557,143	573,547	570,222	503,980
	Employees (estimate)	521,117	551,856	585,872	625,383	642,001	649,463
	Wages/salaries	$16,995,961,210	$18,558,018,337	$20,474,433,109	$22,467,844,088	$24,231,914,107	$25,297,624,437
	Net standard levy	$175,637,487	$200,062,398	$227,452,913	$246,199,571	$250,857,557	$262,229,365
	Ultimate claim cost	$97,735,117	$120,143,818	$130,168,108	$154,480,938	$170,035,294	$190,965,632
Large employers	Number of employers	8,716	9,096	9,381	9,775	9,976	10,283
	Employees (estimate)	1,120,157	1,144,398	1,183,935	1,236,948	1,264,915	1,311,231
	Wages/salaries	$36,522,705,740	$38,477,067,019	$41,350,044,833	$44,428,723,736	$47,735,213,862	$51,071,292,665
	Net standard levy	$285,152,657	$305,387,474	$321,247,851	$353,428,608	$371,478,254	$390,272,576
	Ultimate claim cost	$132,324,846	$163,128,780	$172,404,593	$184,657,608	$210,717,079	$236,727,994
Total	Number of employers	1,199,429	1,265,545	1,286,416	1,285,688	1,241,720	1,111,336
	Employees (estimate)	1,978,321	2,035,474	2,099,359	2,181,944	2,220,922	2,277,500
	Wages/salaries	$60,516,629,513	$64,122,130,496	$68,538,988,579	$73,541,286,357	$78,664,543,715	$82,893,623,744
	Net standard levy	$548,460,340	$619,753,322	$660,897,493	$704,218,231	$736,649,379	$777,485,106
	Ultimate claim cost	$285,078,824	$350,502,514	$367,664,473	$402,015,825	$453,126,551	$503,837,712
NOTES							
• Small employers are defined as between 1–20 employees. Large employers have greater than 20 employees.							
• Employee numbers are estimated from total company wages and salaries divided by the average annual wage rate (Statistics New Zealand).							
• Net standard levies are estimated from wages/salaries times the employer classification unit (CU) rate, in each levy year, less workplace safety discounts.							
• Ultimate claim costs are the expected life-time claim cost, for claims incurred in each levy year, inflated and discounted to present value (calculated for all levy years at 31 March 2008).							
• Figures include accredited employers.							

Appendix C: Stakeholders interviewed

Organisation	Contact details
Agricultural industry	
AgResearch Farming Food and Health	Neels Botha Ruakura Research Centre East Street, Private Bag 3115, Hamilton Phone: (07) 856 2836
FarmSafe	Christine Nagel Project Administrator Private Bag 10002, Feilding Phone: 0800 545 747 Email: christinen@farmsafe.co.nz
MAF	Rural Affairs Co-ordinator PO Box 252, Wellington Phone: (04) 894 0675
Boat building industry	
Boating Industry Training Organisation	Chris van der Hor General Manager 79–85 Westhaven Drive, Westhaven, Auckland Phone: (09) 360 0056 Email: training@bia.org.nz
Marine Industry Association	Peter Busfield Executive Director 79–85 Westhaven Drive, Westhaven, Auckland Phone: (09) 360 0056 Email: info@bia.org.nz.
City council	
Waitakere City Council	Cleaner Boat Building Project Michelle Dawson and Kelly Taylor 6 Henderson Valley Road, Henderson, Waitakere Phone: (09) 836 8000
Civil aviation industry	
New Zealand Civil Aviation Authority	Janet Lammas Health and Safety Inspector Aviation House, 10 Hutt Road, Petone Phone: (04) 560 9636 Email: lammasj@caa.govt.nz
Employer and worker representative organisations	
Employers and Manufacturers Association	Paul Jarvie Phone: (09) 367 0963 Email: paul.jarvie@ema.co.nz
Engineers, Printers and Manufacturers Union	Fritz Drissner EPMU Health and Safety Officer Phone: (09) 3039020 Email: fritz.drissner@epmu.org.nz
New Zealand Council of Trade Unions	Pat Bolster Email: patb@nzctu.org.nz
	Renee Habluetzel

Organisation	Contact details
	Phone: (04) 385 1334 Extension 824 Email: reneeh@nzctu.org.nz
	Malcolm McNeill and Anthony Rimell (Advocates) Phone: 0800 4 UNION Email: advocacy@nzctu.org.nz
NZ Dairy Workers Union	34 Harwood Street, PO Box 9046, Hamilton Phone: (07) 839 0239, Email: nzdwu@nzdwu.org.nz
Fishing industry	
FishSAFE	Peter Dawson Seafood Association PO Box 43, Lyttelton Phone: (03) 328 9494 Email: pete@fishcon.net
Ministry of Fisheries	Tracey Steel PO Box 1020, Wellington, Email: tracey.steel@fish.govt.nz
Maritime New Zealand	Sharyn Forsyth SSM Development Programme Manager Freephone: 0508 22 55 22 Email: sharyn.forsyth@maritimenz.govt.nz
Nelson Marlborough Institute of Technology	Alex Woods
New Zealand Fishing Industry Guild	Margaret Wilkinson 124 Vickerman Street, Port Nelson, Nelson 7010 Phone: (03) 546 8421
New Zealand Seafood Industry Council	Phone: (04) 385 4005
Port Nelson Fishermen's Association	Darren Guard Phone: (03) 544 9424
Forestry industry	
Forest Industries Training Education Council (FITEC)	Phone: (09) 356 7250 Email: info@fitec.org.nz
Forestry Contractors Association	John Stulen Director Building X91, 99 Sala St, Rotorua Phone: (07) 921 1382 Email: john.stulen@fica.org.nz
New Zealand Forest Owners Association (NZFOA)	Sheldon Drummond Juken NZ Limited, PO Box 1239, Gisborne Phone: (06) 867 8398
Scion (Forest Research Institute)	Te Papa Tipu Innovation Park, 49 Sala Street, Private Bag 3020, Rotorua Phone: (07) 343 5899
Government agencies (general)	
Accident Compensation Corporation	Dr Jackie Fawcett Manager, Research Services Phone: (04) 918 4439

Organisation	Contact details
	Shamrock House, 81–83 Molesworth Street, PO Box 242, Wellington
Department of Labour	Bob White Senior Policy Analyst (H&S Policy) Phone: (04) 915 4369 Email: bob.white@dol.govt.nz
	Emma Doust Workplace Policy Group PO Box 3705, Wellington.
	Jay Sepie National Manager Small Business Information Unit 144 Kilmore Street, PO Box 13 278, Christchurch Phone: (03) 964 6334 Email: jay.sepie@dol.govt.nz
Environmental Risk Management Authority (ERMA)	Heidi McLeod Public Awareness Advisor Phone: (04) 918 4865
	Karen Cronin Communications Manager Phone: (04) 496 4826 Email: karen.cronin@ermanz.govt.nz
	Mark Walles Media Advisor Phone: (04) 918 4813 Email: mark.walles@ermanz.govt.nz
Health care	
Australasian Association for Quality in Health Care (AAQHC)	Kathleen Ryan President PO Box 5170, Gold Coast MC Queensland 9726 Phone: (07) 55 611 399 Email: aaqhc@aaqhc.com.au
Independent Practitioners Association Council	Jennie Mills Executive Assistant to the Chief Executive Phone: (04) 473 9168 Email: jenniemills@ipac.org.nz
New Zealand Rural General Practice Network	Level 6, 69–71 The Terrace, Wellington Phone: (04) 472 3901 Email: enquiries@rgpn.org.nz
Rural Doctors Northern Rural General Practice Consortium Inc.	PO Box 57, Kerikeri, New Zealand Phone: (09) 407 3561 Email: ruralgps@xtra.co.nz
The Royal New Zealand College of General Practitioners	Maureen Gillon National Director Phone: (04) 496 5999 Email: rnzcgp@rnzcgp.org.nz
Horticulture industry	
Hawke's Bay Fruitgrowers Association	Dianne Vesty Executive Officer
Horticulture New Zealand	Peter Ensore

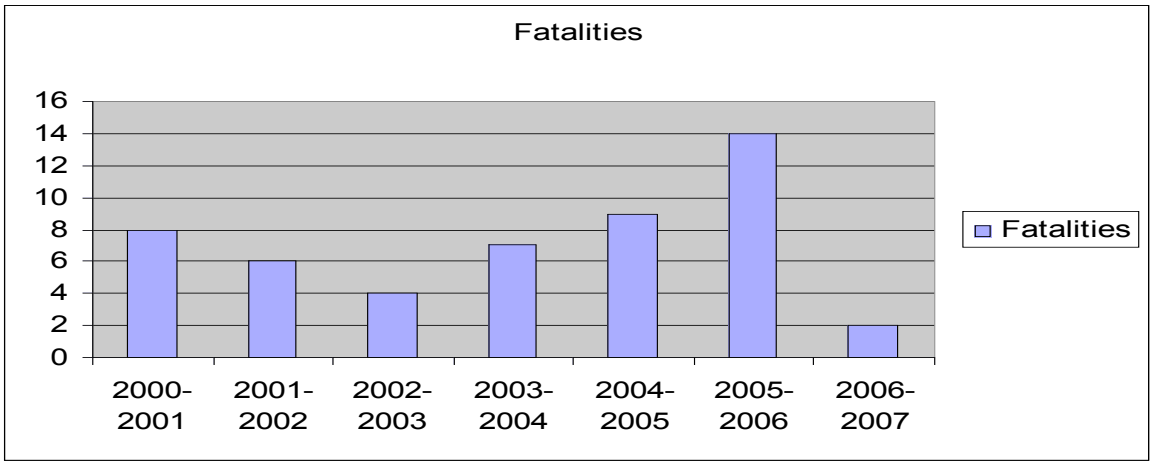
Organisation	Contact details
	Level 2, Huddart Parker Building, Post Office Square, Wellington Phone: (04) 494 9977 Email: info@hortnz.co.nz
Nursery and Garden Industry Association	Allan Criglington Level 4, The LG Centre, 35 Victoria Street, Wellington Phone: (04) 918 3511 Email: info@ngia.co.nz
Pipfruit NZ Incorporated	Christine McRae, 207 St Aubyn Street West, Hastings Phone: (06) 873 7080 Email: info@pipfruitnz.co.nz
OHS magazine	
Safeguard	Jackie Brown-Haysom Level 1, 16 College Hill, Ponsonby, Auckland Phone: (09) 360 3723
Residential construction industry	
New Zealand Construction Industry Council	Richard Michael Chief Executive NZ Contractors Federation (NZCF) PO Box 12013, Thorndon, Wellington Phone: (04) 496-3270
Registered Master Builders Federation	Pieter Burghout PO Box 1796, Wellington Phone: (04) 385-8999 Email:pieter.burghout@masterbuilder.org.nz
Site Safe	Iris Clanachan Executive Director PO Box 9445, Wellington Phone: (04) 499 2509 Email: iclanachan@sitesafe.org.nz
Transportation industry representatives	
Land Transport NZ	Phone: (04) 931 8700
New Zealand Road Transport Association (Greater Auckland)	Paula Davies Area Manager PO Box 84-047, Westgate, Auckland Phone: (09) 412 9989 Email: paulad@nzrta.co.nz
New Zealand Road Transport Association	Raywin Head Phone: (09) 419 6463

Appendix D: Industry case study – commercial fishing industry

A case study on the commercial fishing industry is presented as a way of highlighting, firstly, the different and complex layers of New Zealand OHS programmes and interventions, and secondly, the problems associated with locating the evidence-based rationale and efficacy of such programmes and interventions.

The New Zealand seafood industry is the country's fourth largest industry behind dairy, meat and forestry, contributing $1.7 billion to New Zealand's GDP, employing 26,620 full-time equivalents.[241] In the commercial fishing industry, there are approximately 3,500 registered commercial fishing vessels and 2,500 full-time employees, which is a fraction of New Zealand's 2 million plus labour force. While the seafood industry makes a significant contribution to New Zealand's GDP, the commercial fishing industry is small and fragmented. Moreover, those employed in the fishing industry are also poorly paid compared to employees in other occupations.[242] While it has been predicted that the industry will grow substantially over the next decade, underpinning this growth are a number of critical issues, such as the changing nature and skill capacity of the workforce, the impact of new technology and the sustainability of the resources.

In Maritime New Zealand's[iii] Annual Report 2001–2002,[243] it was noted that New Zealand's commercial fishing sector represented a disproportionately high number of maritime fatalities. With the exception of the 2007 fatality figures, the rate of Maritime New Zealand-reported fatalities and accidents within the commercial fishing sector has remained fairly static, as outlined in Figures D1 and D2. As a consequence of the high level of fatalities and injuries, a number of reviews have been undertaken since 2000 and resultant initiatives implemented. For example, one of the first reviews undertaken in 2000 was by the Fishing Industry Safety and Health Group (FISHGroup). This group had representatives from the commercial fish-catching sector, ACC and the Injury Prevention Research Unit of the University of Otago and was convened by the Maritime Safety Authority (now Maritime New Zealand) with the objective of identifying possible initiatives for improving the safety performance of the fishing industry.



[iii] Maritime New Zealand is the new name for the Maritime Safety Authority. The name change came into effect on 1 July 2005.

Figure D1. Fatalities within the commercial fishing sector
(Source: Maritime New Zealand[244,245]2008)

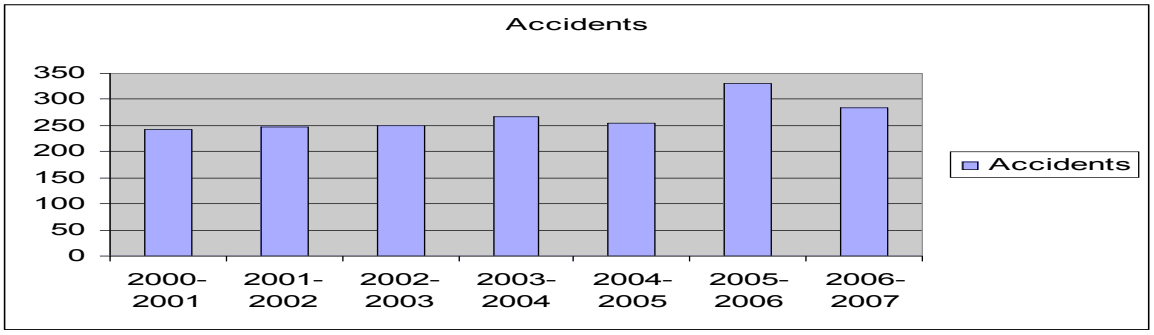


Figure D2. Accidents within the commercial fishing sector
(Source: Maritime New Zealand, 2006, 2008)

The main initiatives administered and/or supported by Maritime New Zealand over the past decade are outlined below. However, there have been a number of serious concerns about aspects of these OHS initiatives.

Safe Ship Management

Introduced in 1998, the Safe Ship Management programme covers New Zealand-owned commercial vessels operating in New Zealand waters, such as small domestic cargo, passenger and fishing vessels, to improve their day-to-day safety. Safe Ship Management replaced the earlier system of annual surveys and aimed to make ship owners and operators responsible for the daily safe maintenance and operation of their vessels throughout the year. Operating under the umbrella of Safe Ship Management are a number of subinitiatives, the two main ones being Safe Operational Plans and the Safety Profile Assessment Number (SPAN).

The Safe Operational Plans initiative was introduced in 1999. It is a scaled-down version of Safe Ship Management and is designed to provide a practical and affordable set of safety requirements for smaller commercial operators, such as commercial jet boat and river rafting operators.

Safety Profiling – the Safety Profile Assessment Number (SPAN) – scheme was also introduced on 1 July 2001. The scheme, covering over 3,000 vessels in Safe Ship Management systems, allocates a number that indicates the level of risk a vessel poses to safety and to the marine environment. It became apparent during the year that certain operational details within the scheme were neither fully understood nor endorsed by some in the industry. SPAN was further refined as a consequence to include a provision that the human factor aspects did not stay with the vessel if it was sold, a source of particular concern to the industry.

Safe Ship Management requires inspections and audits to supplement the daily obligation on owners and operators to maintain and operate their vessels safely. The audits and inspections are to be carried out by approved service providers (SSM companies). In the case of the Safe Operational Plans system, authorised persons carried out inspections and audits.[246]

Review of Safe Ship Management development programme

Since its introduction, the Safe Ship Management programme has been under continuous scrutiny and subjected to both internal reviews by Maritime New Zealand and external reviews by the Auditor General's Office and the Transport Safety Investigation Commission as well as independent consultants (such as Thompson Clarke Shipping Pty Ltd).

Maritime New Zealand acknowledged that the introduction of Safe Ship Management and Safe Operational Plans was not without problems, and by 2000, significant issues with the programmes were beginning to be identified**.** A report commissioned in 2000 by the Maritime Safety Authority Board (and conducted by Pacific Marine Management Limited) expressed concern at evidence of growing risks associated with the new systems. The report identified problems including a lack of consistency, overcharging and reluctance by some owners and operators to undergo audit. In March 2002, the Maritime Safety Authority Board initiated another independent review of Safe Ship Management and Safe Operational Plans, conducted by Thompson Clarke Shipping Pty Limited (Thompson Clarke) – an Australian company with internationally recognised expertise in the maritime field. The Board received Thompson Clarke's comprehensive *Review of Safe Ship Management Systems* (the SSM Review) in September 2002. On 17 December 2002, the Maritime Safety Authority Board approved the implementation of 11 of the SSM Review's 29 recommendations and noted the remaining 18. The changes resulting from the 11 recommendations represent a major shift from the initial Safe Ship Management system of self-regulation and the delegated monitoring and enforcement of safety standards towards direct MSA regulation of, and involvement in, the administration and monitoring of the system.[247]

The Office of the Controller and Auditor-General[247] noted that, by 2005, the most significant change resulting from the SSM Review was the introduction of the New Zealand Code of Practice for Safe Ship Management. The code of practice is the main way the Maritime Safety Authority has implemented the SSM Review's recommendations. It requires vessel owners, operators, and SSM companies to keep extensive safety management documentation, and – on request – to either display it or make it available to the Maritime Safety Authority. The Code of Practice also has inbuilt performance indicators for SSM companies.[247]

In spite of the numerous reviews and dozens of recommendations to improve the Safe Ship Management Programme, there are still significant problems with the programme. In their 2007 Annual Report, the Transport Accident Investigation Commission (TAIC)[248] noted that:

> A common theme to come out of recent marine investigations is the functionality of the safety management system and the legislation surrounding it. A number of incidents have revealed that the safety management system ought to have identified and corrected deficiencies that were subsequently proved to be factors in occurrences. The problem appears to be systematic, with incidents involving restricted limit passenger vessels, fishing vessels and barges, all affected by Maritime Rule part 21, Safe Ship Management Systems. (p.25)

TAIC[248] also added:

> A secondary but associated issue that features in many investigations is inconsistencies within the Maritime Rules that make compliance and monitoring difficult. Such inconsistencies often occur in relation to the manning and qualification requirements for differing areas of operations; such as inshore, coastal, offshore and unlimited, and the type of activity; fishing, passenger and non-passenger. (p.26)

More recently, the Transport Accident Investigation Commission released their accident investigation report into the capsizing of the *Kotuku* in which six people perished.[249] In the report, the Transport Accident Investigation Commission was highly critical of Maritime New Zealand's safety regime. In particular, the Transport Accident Investigation Commission identified the following serious safety issues:

- The effectiveness of the Safe Ship Management system to maintain vessel compliance.
- The lack of enforcement concerning commercial fishing vessels transporting passengers.
- The general condition and fitness for purpose of most of New Zealand's fleet of small commercial fishers.
- The risk to maritime operations posed by performance-impairing substances such as alcohol and drugs.

In summary, the Safety Ship Management system will be beset with problems as a result of the lack of enforcement and, ipso facto, lack of compliance. It should be noted that Maritime New Zealand, like its other cousins, Transport New Zealand and Civil Aviation Authority of New Zealand, is a licensing authority and, as such, does not have a statutory, regulatory inspectorate (such as the Department of Labour). In addition, much of Maritime New Zealand's enforcement is subcontracted out, and there is concern that there is insufficient monitoring of this practice.

FishSAFE

Launched in 2004, FishSAFE is a health and safety programme for small commercial fishing vessels, designed to reduce the high rate of injuries in the sector.[250] This programme evolved from the work of FishGroup, a Maritime New Zealand-convened group focused on identifying the causes of work-related near misses, injuries and fatalities. The work was successfully completed in 2003 and a final report produced that made a series of 46 recommendations in the areas of communications and safety awareness, streamlining of compliance, training and development, human factors, and design, construction and equipment. The key recommendation among these was the formation of an ongoing industry-led body that focused on the promotion of safety within the fishing industry. The aim was to improve safety outcomes within the commercial fishing industry by developing and supporting industry and government partnerships and facilitating industry-led initiatives. This body was given oversight of the implementation of the recommendations contained in the final report and became known as FishSAFE.

Although it is supported by Maritime New Zealand and ACC, the FishSAFE programme is driven primarily by commercial fishermen (FishSAFE interview data, 10

March 2008). Membership of FishSAFE is open to all individual fishermen and representative organisations, as well as government agencies with an interest in health and safety in the commercial fishing industry. The current Chairman of FishSAFE is Peter Dawson from the NZ Federation of Commercial Fishermen. The current active membership includes representatives from the following organisations outlined below.

- NZ Federation of Commercial Fishermen
- NZ Fishing Vessel Owners Association
- Greymouth Fishermen's Association
- Port Nelson Fishermen's Association
- NZ Fishing Industry Guild
- Tuna New Zealand
- NZ Seafood Industry Council
- NZ Rock Lobster Industry Council
- Sanford Ltd
- Talleys
- Sealord Group Ltd
- New Zealand School of Fisheries
- Seafood Industry Training Organisation
- Accident Compensation Corporation
- Maritime New Zealand

Darren Guard, Vice President of the Port Nelson Fishermen's Association, stated that one of the beneficial outcomes of the FishSAFE initiative has been the development of positive relationships between various parties in the industry, Maritime New Zealand and other key agencies. He added: "FishSAFE is probably one of the first projects where everyone is working together on the same side… It's a winning format getting the industry involved… and I'm sure it could be replicated elsewhere".[250]

The FishSAFE programme comprises of a number of elements – namely safety guidelines, hazard management training workshops for inshore fishermen and a mentoring programme, with mentors based at ports around New Zealand as a local contact point for fishermen. The mentors help to co-ordinate local workshop training and provide one-on-one follow-up and support and generally champion the programme.[250] These mentors were chosen because they are respected, have good communication skills and have an indepth knowledge of the industry. Most of these mentors are no longer operational but were still involved in the fishing industry (FishSAFE interview data, 11 April 2008).

As noted above, while the mentoring programme has been credited with the success of the FishSAFE, it is very resource-intensive. Nonetheless, it has suited the industry well for a number of reasons. First, employing well-respected mentors has overcome the industry's culture of command and control in which the word of the skipper is law and who often disregards most authorities and government agencies (Department of Labour interview data, 4 June 2008). Second, those working in the fishing industry are essentially mobile workers, working long and continuous hours. Thus, trying to get fishermen to come together for community meetings over health and safety is not a practical strategy (Department of Labour interview data, 4 June 2008).

The priorities set out in FishSAFE are the development of the Safety Guidelines for Small Commercial Fishing Vessels and the development of associated injury prevention training (see www.fishsafe.org.nz/guidelines). The target audience are the owners, operators and crew of fishing vessels under 24 metres in length. This is because that

category of vessel makes up the large majority of the New Zealand fishing fleet in terms of both vessel numbers and people employed.[157,250]

The manual that underpins the FishSAFE programme was influenced by other similar manuals from British Columbia and the UK. Interviews with FishSAFE representatives noted that, although the UK manual was very dense, it did have useful descriptive pictures. However, the New Zealand manual was more influenced by the British Columbian manual. The manual was developed in three stages. When asked what they thought of the FishSAFE manual and the guidelines, other interviewees argued that "…a great deal of money has been spent on the manual and guidance material with little or no proven results" (ITO interview data, 14 April 2008). There are, however, no available reviews of the copious material associated with FishSAFE.

Training is a major component of the FishSAFE programme. The health and safety workshops are facilitated by the Seafood Industry Training Organisation. An added incentive for those who undertake the training is an ACC levy discount of 10 percent off their current levy (WSDS). The success of the training workshops was attributed to employing trainers with industry knowledge and inviting speakers from the industry who had suffered a workplace injury to talk about the impact that their injury has had on their lives (FishSAFE interview data, 11 April 2008). FishSAFE and Federation of Commercial Fishermen Chairman Pete Dawson commented that the high number of fishermen attending the workshops reflects the strong level of buy-in from the industry. "To have penetration with about a third of our target audience in a year is a significant achievement. While people might be going into the workshops with the carrot of the ACC levy reduction… they are coming out with a better recognition of the… importance of safety management on their vessels and how they can make their business more efficient and less costly, because the social and economic impact of injury is huge"[7] (p.22).

While there is no doubt that the training associated with FishSAFE has increased the level of OHS awareness, unfortunately, it is difficult to ascertain how effective the programme has been in the medium- and long-term as there are no publicly available evaluations of the programme. Moreover, interview data reveals that the ITO is having difficulties keeping up with the demand for qualified and experienced trainers.

Other safety initiatives in the fishing industry

One of the major concerns in the fishing industry is the use of alcohol and other drugs, and anecdotal and accident investigation data indicate that substance abuse is a significant safety issue affecting all sectors of the industry.[248] Overseas research also suggests that the use of alcohol and other drugs among seafarers is prevalent and have been cited as root causes for many of the workplace injuries in the industry.[251] In response to the issue of substance abuse, Maritime New Zealand in 2002 brought together a group widely representative of maritime employers and employees to consider the difficult and complex matter of the use by seafarers of alcohol and other drugs.

Allied to alcohol and drug issues, the Transport Accident Investigation Commission and Maritime New Zealand have also become increasingly concerned at the prevalence of accidents, particularly in the commercial fishing sector, in which fatigue was a factor.

The Transport Accident Investigation Commission's accident report on the grounding of the fishing vessel *Venture* while on passage from Picton to Oamaru showed that the skipper fell asleep at the helm.[252] The safety issues identified in the report were that the watch-keeping and helmsman tasks were severely impaired by the effects of fatigue and that there was no watch-keeping monitoring alarm to alert the other crew members that something was wrong. The safety recommendation was made that the skipper implement the Safety Guidelines for Small Commercial Fishing Vessel as issued by FishSAFE organisation, with particular reference to the more pertinent sections on fatigue management and the fitting of a watch-keeping alarm. Moreover, Maritime New Zealand now requires all ships to display certificates specifying minimum crew numbers. A series of publications relating to the management of fatigue in the maritime industry has also been developed, using a case study approach.

Another safety issue recently addressed by Maritime New Zealand was the development of a code of practice for crossing bar harbours. This code was in response to a significant number of accidents and fatalities arising from vessels being overwhelmed as they attempted to cross bars at the entrances to a number of harbours around the New Zealand coast.[243]

Summary

The commercial fishing industry is probably one of the most complex industries in terms of the variety of working environments, the high rate of mobile workers, tight margins and significant health and safety issues. In response to the high rate of work-related fatalities and injuries in this industry, Maritime New Zealand and ACC developed several initiatives, with the overarching Safe Ship Management programme. However, as stated earlier, there have been a number of serious criticisms regarding Safe Ship Management from its conception. What is more disturbing is that many of these problems were still unresolved by the beginning of 2008, as highlighted in the Transport Accident Investigation Commission's report into the capsizing of the *Kotuku*. Although there have been no comprehensive evaluations of the FishSAFE initiative, it appears to have fewer problems than the Safe Ship Management programme. According to the interviewees, the use of training, mentors and guidance material are all effective mechanisms in getting the safety message out to those operating in the industry.

Appendix E: Intervention effectiveness research

The goal of occupational safety and health interventions is to prevent disease and injury through combinations of techniques such as control technologies, exposure guidelines and regulations, worker participation programmes and training. The goal of intervention research is to determine the efficacy and effectiveness of these techniques and programmes. New intervention research will assure better use of limited resources in workplace applications of prevention and control strategies. This research uses multi-disciplinary approaches and focused field studies. Intervention model development, worker participation, cost-effectiveness, hazard identification and control evaluation are some of the key elements of this research.

The goal of intervention research is to develop practical strategies and techniques that effectively reduce or prevent workplace injuries and illnesses. Workplace safety and health interventions include, but are not limited to, developing and implementing specific engineering control technologies, process and work organisation changes, information dissemination and health communication practices, worker/management participatory safety and health programmes, safety and health training, selective use of personal protective equipment, and inspection and enforcement of protective exposure limits.

Intervention research is the testing and evaluation of interventions, programmes and policies. To date, a variety of approaches to intervention have been developed to protect worker safety and health across a broad spectrum of industries. Although there have been measurable improvements in worker safety and health, only a few interventions, alone or in combination, have been systematically evaluated. Consequently, many interventions are undertaken based on faith and expert judgement without convincing evidence that these approaches are effective. However, there are excellent examples of interventions that have been evaluated and shown to be effective.

Although many intervention strategies have been applied to industrial settings, knowledge about what works best is limited. Many questions remain unanswered. What are the best techniques to evaluate the effectiveness of implemented control technologies? What are the barriers to the acceptance of new control technologies and approaches to eliminating or altering these barriers? What factors motivate the voluntary adoption of protective work practices? What roles do researchers, consultants, trainers, worker organisations and industry trade groups play as partners in intervention efforts? What organisational and economic factors predict success in prevention programmes, and how can programmes be tailored to take account of these factors? How can intervention efforts target areas of greatest need? Why do managers and workers in some organisations implement occupational safety and health programmes when others do not?

Intervention research is a new and multi-disciplinary field that requires skills and disciplines not traditionally applied to occupational safety and health research. Behavioural scientists, economists, organisational theorists and engineers, among others, should be included in inter-disciplinary efforts to identify, develop and evaluate practical prevention and control strategies. Employers, public decision-makers and

workplace safety and health teams need this information to assure better use of limited resources by making informed decisions about which prevention strategies work best.

Development of a conceptual model for intervention research

In 2001, the Intervention Effectiveness Research Team established by NIOSH developed a conceptual model for intervention research in OHS[253] (see Figure E1).

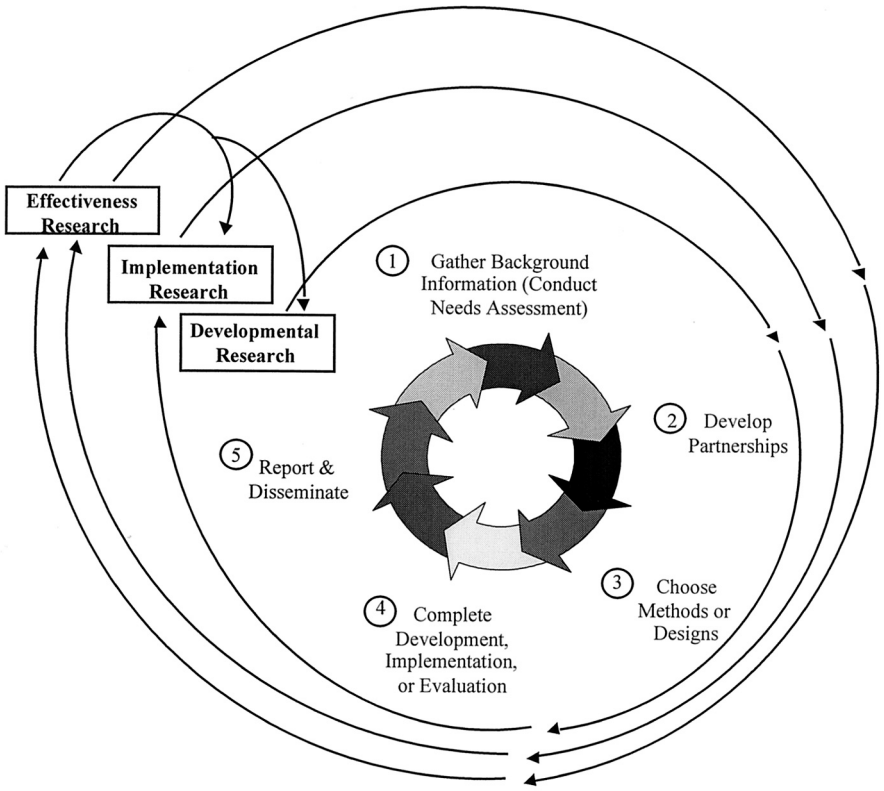


Figure E1. Intervention research in OHS: a conceptual model

The model attempts to:

- provide an integrating framework for diverse activities
- articulate relationships among various types of intervention research
- facilitate assessment of the current state of the field in order to guide strategic planning (for example, specific requests for intervention research proposals)
- develop common language to facilitate communication.

The model suggests that the intervention research process is cyclical and progressive and involves three broad research phases of intervention development, implementation and evaluation. It includes a set of five tasks that are important in any intervention research study:

1. Gathering background information and conducting needs assessment on the problem and the range of possible intervention strategies.
2. Developing partnerships with relevant stakeholder groups.
3. Choosing appropriate research methods and study designs.
4. Conducting the research.

5. Reporting on and disseminating findings.

Finally, intervention research can be conducted at levels ranging from simple worksite programmes to national or international policy.[253]

In addition, LaMontagne et al.[173] expanded this model to describe a conceptual model that relates directly to occupational health interventions (Figure E2).

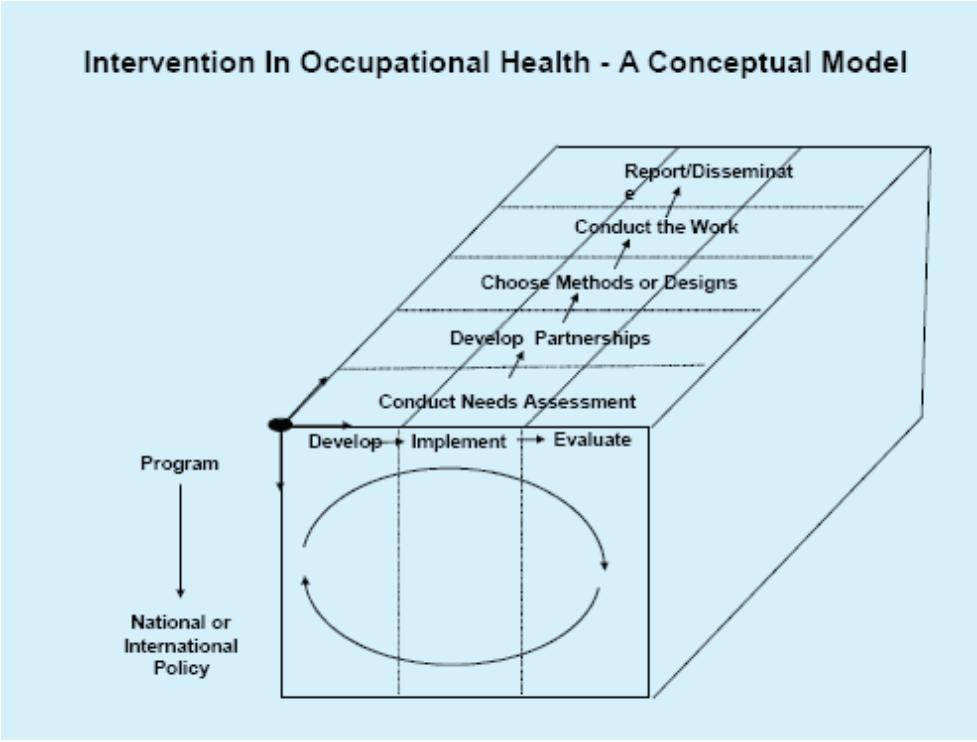


Figure E2. Intervention in occupational health: a conceptual model

As well as illustrating the intervention research process, it incorporates the differing levels and focus for evaluation; that is, from the national or international policy level, to the national campaign level, to the local/organisational programme level.

OHS policy intervention research in New Zealand

Policy level interventions include mandatory national regulations (for example, Department of Labour regulations, European Union OHS directives) as well as voluntary guidelines and strategies recommended by professional, trade, research or other authoritative groups (for example, International Labour Organisation Conventions, International Standards Organisation Standards, Australian New Zealand standards, *Workplace Health and Safety Strategy for New Zealand to 2015*).

LaMontagne[210] reviews the nature and extent of OHS intervention research at the policy level and comments that, despite the fact that OHS regulatory interventions are often challenged by various stakeholder groups on one side for being too stringent and on the other for being too lax, there has been relatively little peer-reviewed research published on the evaluation of such interventions.[253–255] What little there is tends to address

regulatory or legislative more than voluntary policies, and occupational safety more often than occupational health policy interventions. Policy level interventions are particularly challenging to evaluate for many reasons, including the need for large-scale study, the lack of control over the intervention and study design limitations imposed by ethical and other concerns.[254]

For occupational health-focused policies in particular (for example, regulations on occupational carcinogens), there are additional challenges in relating interventions to disease outcomes due to long latency periods from exposure to disease, non-work contributions to many diseases that are also caused by working conditions, and other issues.[210]

Evaluating OHS policy interventions: implementation and effectiveness

LaMontagne[210] suggests that policy level interventions are usually developed based upon the best available evidence regarding risks and how best to control them. Thus, they have implied or explicit expectations about how requirements or recommendations will be implemented and, in turn, what the effects of such actions will be on hazards and associated injury and disease patterns. Therefore, fundamental evaluation questions concern implementation and effectiveness, as outlined below:

1. Was the policy implemented as intended (for example, employer implementation of requirements, regulatory enforcement)?
2. Did implemented measures result in decreases in hazards and health effects of concern?

Implementation studies are important complements to effectiveness studies and can also be quite valuable in their own right. Their value is often under-estimated due to the prevalent view that evaluation is always about effectiveness.

Effectiveness questions can be asked at three general levels:[210]

1. Was implementation of the policy associated with decreased exposures to the hazard of interest?
2. Was implementation of the policy associated with decreases in health outcomes of interest?
3. Did the policy 'cause' observed changes in exposures and health outcomes?

Studies at the first two levels are observational, with the usual limitations on causal inference. For example, if an effectiveness evaluation study documents a decline in a hazardous exposure following a policy intervention on that specific exposure, it suggests – but does not formally prove – that the policy caused the decline. Combining qualitative and quantitative approaches, however, can greatly improve the interpretability of such observational studies.[256,257]

Studies at the third level (Did the policy 'cause' observed changes?) are rarely feasible due to the practical, ethical and legal constraints of conducting randomised, controlled experiments in this context. For the sake of justifying policy intervention, sufficient levels of proof of policy effectiveness should be guided by these constraints. A sensible and economical approach to evaluating OHS interventions (of all types, including policy) has been proposed in which qualitative and quasi-experimental studies would be

conducted, followed by –where both necessary and feasible – randomised, controlled trials.[256]

LaMontagne[258] developed a practical workshop handbook – *Evaluating government OHS interventions* – for a one-day NOHSC workshop in Canberra in May 2003. It provides a way of systematically thinking through intervention development, implementation and evaluation.

OHS intervention research at the programme level

LaMontagne and Shaw (2004)[259] define programme evaluation as:

> …the systematic collection and analysis of information to allow informed decision making about a program or activity. Evaluation aims to identify the lessons learnt from OHS interventions, in order to establish improved approaches to interventions in the future. This can include changes to the content and structure of interventions themselves as well as improved implementation strategies.

They suggest that evaluation can be done at different times of an intervention and to provide different sorts of information. The best types of evaluation provide information that helps improvement – information for action. Evaluation can tell you about:

- How well the intervention was implemented – process and formative evaluation. These types of evaluation will answer questions like:
  - How well did we implement the activities?
  - Did we get the right stakeholders involved?
  - How is the intervention affecting the targets?
  - How well did the intervention address the identified problem?

- Whether the intervention had the desired outcomes – effectiveness evaluation. This type of evaluation will answer questions like:
  - To what extent did the intervention achieve the expected outcomes?
  - Did the intervention meet the identified needs?
  - Did we get value for money from the intervention?

Process evaluation can be done during an intervention or after its completion. Formative evaluation can also be done while the intervention is happening – the distinction here is that whatever is learned is applied in an ongoing way to help fine-tune the intervention and to ensure reliable data. Process and formative evaluation are relatively less resource-intensive than effectiveness evaluation.[259]

Effectiveness evaluation requires the most time and resources and can only be finished after an intervention has been completed. [259]

The framework developed by LaMontagne and Shaw[259] lays out a systematic process for evaluating occupational health and safety intervention programmes. It is designed for use by practising professionals working in government OHS agencies. To make it most accessible to this audience, there is a particular emphasis on OHS policy interventions (i.e. regulatory standards or other interventions). However, this framework

is applicable to any OHS intervention (for example, worker OHS training programmes, medical screening tests for occupational diseases and engineering solutions to reduce hazardous exposures).

The intervention evaluation framework focuses on answering three questions:

(1) What is the rationale of your intervention? (Put more simply, how is it supposed to work?)

(2) What are the questions you want to answer about this intervention?

(3) What are the appropriate evaluation methods, designs or tools that can be used to answer your questions?

Appendix F: Terms of reference for the international literature review

A systematic method of literature searching and selection was employed in the preparation of the international literature review. This section details the principal sources of information that were drawn upon for the literature review, the database search parameters and a summary of findings from the literature search. The search was conducted from March–May 2008. The principal sources of information included the following bibliographic databases: Medline, PubMed, Web of Science, Google Scholar and the Cochrane Database. In addition, websites of key international research institutions, government agencies and industry associations were examined, and advice and guidance on practices and programmes were provided by personal communications from key researchers and informants. Search parameters included: year of publication 1997–2007; full-text; keywords: small business OR SME OR small firm OR small enterprise OR small workplaces, OHS programmes or OHS practices or OHS interventions.

In addition to the publications that were sourced from databases and websites, we received a substantial number of key articles and reports via personal communication with academics and public sector personnel who have an interest in the area of small businesses and/or OHS programmes/interventions. The criteria for publication selection are shown in Table F1.

Characteristic	**Criteria**
Publication type	Journal articles, conference proceedings, web pages, public and private sector reports, edited books, unpublished surveys and research reports
Publication format	Primarily full-text, but a few key abstracts also included
Language	English
Research location	Primarily countries in the developed world, particularly Australia, European nations especially the United Kingdom, Denmark, Finland, Sweden and Norway
Publication date	1997–2007

Table F1. Publication inclusion criteria

The publications were initially selected from the databases or websites on the basis of the title. All publications with a title that implied that the content was likely to be relevant to the research project were selected and entered into a bibliography database. Thereafter, abstracts or executive summaries were appraised, and some publications were excluded. The final selection of publications was based on relevance of the content to the keywords used for organising our bibliography database (see below) and whether it met the above inclusion criteria.

The review used a structured approach with which there are some inherent limitations. Systematic reviews are limited by the quality of the studies included and the review methodology. This review was limited by the restriction to primarily English and secondary Scandinavian language studies. Restriction by language may result in study bias, but the direction of this bias cannot be determined. In addition, the review has

been limited to the published academic literature and has not appraised unpublished work, which may be significant. The studies were initially selected by examining the titles of the publications. Therefore, it is possible that some studies were excluded prior to examination of the full text article. However, where detail was lacking or titles and abstracts were ambiguous, papers were retrieved in full text to minimise the possibility of inappropriate exclusion.

Appendix G: Detailed review of international occupational health and safety programmes

1. Australia

1.1 Business Advisory Officers

The Business Advisory Officers give one-on-one advice to clients and present workplace safety and workers' compensation workshops that are tailor-made to meet local needs. They also visit small to medium-sized businesses on request, to provide individual workplace safety and workers' compensation advice. The officers have a sound knowledge of relevant NSW legislation and best practice in occupational health and safety, workers' compensation and injury management, as applied to small and medium-sized businesses. Small and medium-sized businesses often have limited resources and welcome assistance in ensuring they meet their workplace safety, workers' compensation and injury management obligations.

1.2 Confirmation of Advice Record (CAR)

The Confirmation of Advice Record (CAR) is a document intended to support and promote the advisory focus of WorkCover. It allows inspectors to provide a written record of advice during workplaces visits and leave it with the employer and employee representative. It is not a notice, nor is it enforceable, and it does not replace enforceable notices or orders. However, it can be used in conjunction with notices or orders. For example, if WorkCover advises an employer to develop more effective safety procedures, the CAR will suggest ways to do this. The CAR is intended for use during all workplace visits; not just intervention activities traditionally associated with advisory activities.

The purpose of the CAR is to:

- provide written practical guidance to employers and workers
- encourage employers to examine how they can improve the way they are managing safety
- help inspectors and employers to engage in a workplace interaction based on discussion rather than direction
- direct the user to sources of further assistance
- provide a means of improved reporting on advisory activities
- assist in identifying advisory trends and designing future interventions.

1.3 Partnerships Program for Occupational Health and Safety Management

The Consumer Manufacturing Industry Reference Group (IRG) identified the need to develop a mechanism to provide cost-effective assistance to small businesses in occupational health and safety and injury management (IM). The IRG formed a project team to develop and trial a pilot partnerships program to help develop OHS and IM expertise in small businesses.

Industry associations (termed referring organisations) were asked to nominate companies with strong areas of OHS and IM expertise (mentors) and other companies that lacked OHS and IM expertise (mentees). Mentors with particular OHS and IM strengths were partnered with mentees with corresponding OHS and IM weaknesses. Twenty three companies responded to the request to participate in a trial of the pilot programme. The respondents were categorised as participants (15 companies in 12 matched mentor/mentee pairs and three additional mentor companies), non-participants (six companies who responded but chose not to participate) and five referring organisations. The trial of the pilot partnerships programme was conducted between November 2000 and July 2001, and a qualitative evaluation was conducted from October 2001 to February 2002.

Separate interviews were developed for each of the three categories of respondents. All respondents were asked about the guidance material developed for mentees and mentors, their views of the partnerships approach and ideas for how it could best be promoted. Participants were also asked about the specifics of their experience with the programme, the amount of time devoted to it, the activities in which they were involved and what they gained from their participation. Non-participants were asked about programme and situational factors that contributed to their non-participation. Referring organisations were asked about how they had selected companies to invite into the programme and what feedback they had received from those they had contacted.

Four of the six partnerships reported being actively involved in their partnership and indicated that it was a worthwhile programme. The mentee representatives from the other two partnerships were not the people who had been initially involved in the programme and felt that it may have worked but they did not know much about it.

A positive view of the partnership approach was held by all 15 participants, five of the six non-participants and all five referring organisations. The factors associated with successful partnerships were observed to include:

- a mentee who is willing to learn, is open to new ideas and is prepared to make use of the information received
- a mentor who is willing to share freely his/her expertise, his/her company's policies and procedures with respect to OHS and IM, and who can understand the situation for small businesses
- an open relationship between the mentee and mentor
- support from senior management for participation in the programme and for OHS and IM change
- contact in the order of 3–5 phone calls, at least one face-to-face meeting and the sharing of relevant policies and procedures
- a focus on the OHS and IM issues that companies have in common rather than detailed information on managing specific hazards.

Two case studies were selected to highlight the most important aspects of partnerships and to illustrate the contribution of the partnership to the development of OHS and IM expertise in the mentee company.

The conclusions were that partnerships are not for everyone. If the partnership is to succeed, each company must be committed to the Partnerships concept as a means of building OHS and injury management expertise in small businesses. The concept

appears to have been uniformly embraced by participants, non-participants and referring organisations involved in the trial of the pilot programme. It should be borne in mind, however, that all the companies were hand-picked by a referring organisation. The reality is that the success of the partnerships is directly related to the enthusiasm of the individuals involved.

The IRG recommended that:

- the programme be further developed and promoted through independent bodies such as industry associations, with advice if needed from WorkCover
- a regional or state-wide co-ordinator be appointed within each independent body to drive the programme, keeping in regular contact with all participants
- a comprehensive promotional strategy be developed that reflects that mentees who participate are seen as progressive and mentors have the chance to pass on their expertise in OHS and injury management
- mentors be recognised as good OHS and IM role models who can demonstrate a commitment to consultation and whose approach to OHS and IM is flexible and adaptable to the needs of mentees
- briefing sessions be delivered by the independent bodies where possible in the local area of those involved in the programme and include mentees as well as mentors
- mentors must be acknowledged publicly for their involvement in the programme (for example, in association newsletters)
- the independent bodies should nominate special mentors for inhouse awards, or special recognition amongst their membership
- a plan, including outcomes, a timeline and evaluation strategies, be agreed between partners
- a milestone reporting process be established such that mentors seek feedback about how their mentee is progressing against the agreed outcomes and timeline
- guidance materials be adapted to suit each independent body's programme
- future Partnerships Programs be evaluated with a larger group of participants to enable actual improvements in OHS and injury management performance to be measured.

1.4 Safety Ambassador Program

This programme will see the identification of small businesses that have achieved OHS, workers' compensation or injury management improvements. These improvements will be showcased through written, internet or audio-visual means and provide an opportunity for other small to medium-sized businesses to see the benefits of giving OHS/WC practices a priority in the workplace.

The Safety Ambassador Program is a natural progression of the case study programme. This programme will identify safety ambassadors/champions who have an exceptionally strong commitment to safe business practices and will act as 'change agents' in their industry. Safety Ambassadors will also promote safe business practices at a variety of forums and seek to influence and assist small to medium business.

1.5 Safety Solutions Rebate Program

The Safety Solutions Rebate Program is an incentive programme to encourage small business operators to work with their employees to identify safety problems and fix them. Employers who qualify for the rebate receive half the costs (excluding GST), up to $500, of adopting an effective solution to a safety problem in their workplace. The rebate is provided after the purchase or implementation of an eligible safety improvement.

To qualify for the rebate, the small business operator must first attend a WorkCover safety workshop or have a business advisory officer or inspector visit the workplace. The owner must also complete an action plan based on information gleaned from the workshop or advisory visit, and submit an application form and copies of relevant tax invoices. Only safety improvements commenced on or after 1 March 2007 are eligible for the rebate. The total rebate is limited to $500 regardless of the number of safety improvements. For example, a small printing company may identify that it needs a more effective guarding mechanism and will be able to apply to have the costs matched on a dollar for dollar basis by WorkCover.

The rebate programme follows other successful WorkCover rebates such as the Roll-Over Protective Structure Rebate Scheme in 2000–2004, which helped 10,000 farmers fit roll-bars to tractors, leading to a 25 percent reduction in tractor-related trauma incidents in the first year of the scheme.

Other current WorkCover Safety Rebate Programs include:

- $1 million Power Take-off Guard Rebate Scheme, available to farmers who install life-saving power take-off guards on their tractors. On average, 15 percent of the workplace fatalities in NSW occur on farms, and 70 percent of those involve mobile farm machinery. These guards prevent clothing and limbs becoming entangled in the rotating drives, which can prove fatal or cause horrific injuries like the loss of arms and legs.
- A $750,000 incentive scheme for farmers to make practical safety improvements to their silos and field bins. Under the Safer Silos Program, farmers are able to claim a dollar for dollar rebate of up to $750 towards the cost of improving the safety of their silo operations.

1.6 Safety workshops and seminars

WorkCover has conducted over 400 free seminars and workshops over the last 18 months. The Small Business Safety Program sees that programme significantly increased, with 1,500 seminars and workshops planned across NSW over the next three years.

1.7 Serious About Safe Business Program

This pack contains tools and information to help you identify what you need to do to make your workplace safer and outlines how to do it. The pack is a practical approach to managing safety in the workplace; essentially it is a simplified safety management system.

1.8 Small Business Grants Scheme

This scheme provides funding to assist industry associations to develop and implement health and safety outcomes within their specific industry sector. The Small Business Grants Scheme was created in 2005 to provide funding for industry groups to assist employers to better manage and improve workplace health and safety. Proposals are sought from industry groups between February and April each year, and the grants are allocated on a financial year basis commencing on 1 July that year.

1.9 Small Business Safety Program

WorkSafe (Victoria) has established a Small Business Safety Program to help small businesses in Victoria evaluate and minimise the risks of injury and claims in the workplace. This programme offers an easy and fee-free opportunity for businesses to work with an independent consultant to check their workplace and systems, to ensure that potential risks are minimised. The programme involves a three-hour assessment of the workplace by external consultants. Consultants assess the environment and provide businesses with advice on changes that can be made to improve safety in the workplace. WorkSafe commissioned a qualitative and quantitative evaluation of the Small Business Safety Program. The results of the quantitative evaluation of the programme are outlined below.

The primary objective is to assess the effectiveness of the Small Business Safety Program as it currently stands. The specific research objectives include:

- overall satisfaction with the program among…
    - small businesses who registered for the consultation
- evaluating the co-ordination and delivery of the programme…
    - how businesses found out about the programme
    - how the programme was conducted
- the impact of the programme on the occupational health and safety performance of the business:
    - Have any changes been made to their occupational health and safety performance?
    - Have any initiatives been undertaken to improve workplace safety?
- benefits gained from involvement in the programme
- limitations of the programme
- suggestions on how the programme could be improved.

The research consisted of 78 telephone interviews (CATI) among small businesses that recently had a health and safety consultant visit their workplace to provide advice and assistance on improving their occupational health and safety performance. The consultancy service was offered free of charge and was arranged through the industry associations. Interviews were conducted with the main person within the business who dealt with the health and safety consultant. Small businesses were randomly selected from the database of participants, which was provided by WorkSafe Victoria.

Overall, the Small Business Safety Program has been well received by small businesses. Nearly all respondents (97 percent) found the free health and safety assistance to be either ‘very’ or ‘quite’ useful. Just over eight in ten (83 percent) also believed the free health and safety consultation was the best method of providing occupational health and safety advice to their business.

The Small Business Safety Program has also been successful in focusing the attention of small businesses on improving the health and safety of their workplaces. In particular, the free health and safety consultancy service has heightened awareness of the actions required to be taken by businesses to improve their health and safety performance. This is supported by the following findings:

- 77 percent believed they had improved the health and safety performance of their business either 'a little' or 'a lot' since receiving a visit from the health and safety consultant.
- Among those businesses considering they had improved their performance, 40 percent attributed the improvement to a better awareness of what was required to enhance their occupational health and safety. A third (33 percent) said they became more safety conscious as a result of the visit from the consultant.
- 81 percent said the emphasis placed on occupational health and safety had either increased 'a little' (55 percent) or 'a lot' (26 percent) since they received the health and safety assistance.

The programme has also encouraged small businesses to take the next step and implement changes to enhance their occupational health and safety performance:

- 92 percent of respondents claimed their business had made improvements to their occupational health and safety as a result of receiving health and safety assistance.
- 62 percent of respondents planned to make changes to their occupational health and safety in the future.
- 71 percent had undertaken expenditure to improve their occupational health and safety performance. On average, small businesses spent $2,012 on health and safety improvements.

What was also encouraging was that the efforts taken by small businesses to improve their performance in this area have been filtered down from top management to lower level employees. Nearly nine out of ten respondents (86 percent) claimed that their business involved their employees in making improvements to occupational health and safety. To date, the programme has delivered over 10,000 consultancies since it commenced, at a cost of over $4 million.

1.10 WorkCover safety buses and safety trailers

The first WorkCover safety bus began operation in March 2006 and has taken WorkCover's free safety education and workers' compensation and injury management advice to rural and regional NSW. The second bus and new safety trailers will increase the availability of these services. A team of WorkCover Business Advisory Officers will use the safety bus as a mobile resource centre to present a series of workshops at rural field days and safety solution days in rural and regional NSW.

1.11 Workplace consultations

Looking at issues at workplaces, providing information and developing action plans, Small Business Advisors are available to provide free workplace consultations of up to three hours. As part of their consultation, the advisors will:

- look at the health and safety issues and risks in the workplace
- prioritise issues according to seriousness

- provide information on the types of solutions available to control risks
- work with the small business owner to develop an action plan to reduce health and safety risks.

A written copy of the action plan is sent to the small business owner after the consultation.

2. European Union

Details of the European Union programmes are described in the European Agency for Safety and Health at Work (EASHW) 2005 report.[221]

3. United Kingdom

3.1 COSHH Essentials

The UK Health and Safety Executive (HSE) has developed an approach to workplace risk management called COSHH Essentials. It is available to intended users, that is, proprietors of small and medium-sized enterprises, both online and as a booklet. When a particular work task is analysed in COSHH Essentials, the hazard band of the chemical substance, the scale of use and the ability of the chemical substance to become airborne are integrated to allocate the work task to a control approach.

COSHH Essentials was designed to be a health-conservative approach, and the exposure bands compare well with the occupational exposure limits in the UK. Unlike the work of Tischer et al.,[231] Jones and Nicas's[209] analysis of vapour degreasing and bag filling operations does not support the view that COSHH Essentials will accurately identify operations in need of control technologies and that the control technologies will, in practice, adequately control exposures. Given the significantly different findings, we believe it is important that COSHH Essentials be tested systematically before it is promoted outside the UK.

To illustrate, in the internet version of Electronic COSHH essentials, nearly 89,000 visits were made to the site and 37,565 COSHH assessments completed.[260] The number of users in the first six months exceeded the number of paper copies over three years. In order to promote the internet site, hyperlinks were set up between the Electronic COSHH essentials and local businesses through the Department of Trade and Industry Small Business scheme.

3.2 Good Neighbour Scheme

The Good Neighbour forum scheme was designed to encourage supportive relationships between large and small firms in managing health and safety. In particular, it aimed to build upon existing relationships between large firms and the smaller businesses that were contracted to supply them with goods and services.

The principal aims of the forums were:

- for larger firms to make a public commitment to help smaller organisations with managing OHS issues

- for the small businesses attending forums to become aware of the range of OHS advice that was being offered and encourage them to take up the offer of support
- to stimulate interest amongst businesses not already participating in the scheme
- to change attitudes to health and safety in small firms and promote behaviour that will lead to improved performance.

This scheme was open to companies operating in any sector. The emphasis was on improving health and safety standards within small businesses, but was designed to involve large and medium-sized businesses, the focus of the initiative being on developing relationships between different sizes of company. Participation by businesses was voluntary, and there were no fees involved. The scheme was officially launched in 1997.

This scheme was not limited to specific OHS issues. It has sufficient flexibility to address a very wide range of OHS/safety management issues. Participating companies were encouraged to address those issues that were relevant to them or those issues that gain support through the discussion forums.

Under the Good Neighbour Scheme, half-day discussion forums were held at a range of geographical locations. The forums were organised by the HSE with one of the larger participating organisations (the key partners) in each geographical location. The key partner made the arrangements for the event; the HSE provided support with funding for the venue and so on, and free health and safety information and advice.

Representatives of the participating large organisations were encouraged to give brief presentations about what they were doing to manage health and safety in their organisations. The forums were also designed to encourage open discussions on topical health and safety issues, in particular, those of concern to participating organisations. Health and safety experts, including representatives of the regulator (HSE), were also on hand at the forums to provide additional input, but the focus was on 'neighbourliness' between the partners.

An evaluation of the scheme was conducted by the Health and Safety Laboratory.[232] The evaluation consisted of a small-scale qualitative study, using three focused discussion groups, to elicit the opinions of representatives of participating businesses (small and medium-sized) on the usefulness of the Good Neighbour forums they had attended. The evaluation aimed to provide the HSE with information on any actions SMEs had taken to improve their health and safety management as a result of attending the forums. It also sought information on the sustainability of the initiatives implemented as a result of the forums, recommendations for their future format and broader recommendations on the Good Neighbour Scheme per se.

The evaluation determined that the aims of the Good Neighbour forums appear to have been partially met:

- Participants considered the Good Neighbour Scheme to have potential in improving communication of health and safety information to small businesses. However, there was a widely held view that, for the optimal benefit to be derived, the regulator (HSE) would need to provide a more proactive lead, in order to maintain the momentum of the initiative. There was, however, a notable willingness amongst a number of participating large firms to commit themselves

to helping smaller organisations in this way. The forums held appear to have been relatively successful, but the concept did not appear to be self-sustaining on the basis of a single meeting.

- Small businesses that attended the forums heard about potential help in improving their health and safety management, but felt that there would need to be more active external encouragement to engage a large number of small firms to take part. It was apparent that there was some confusion as to whether small businesses were expected to initiate further contact after the forum or whether the large organisations or HSE would take the lead.
- The evaluation did not address the third aim.
- The evaluation found little direct evidence that the forums have changed attitudes to health and safety in small firms.

There was a liking for the concept of partnerships and for co-operation between companies. The message from the focus group participants was that the forums were a good idea, but lacked direction and leadership.

3.3 Medical Interventions

GPs and Primary Care Trusts may operate as mechanisms providing health and safety advice (empowering workers to change problematic situations, reduce hazards and report symptoms.[233] According to Martin,[261] there are three main potential interfaces:

- Consultation post injury – for example, the medical model typically adopted by many general practitioners is one in which a fix is presented in terms of drug administration or referral to specialist services. In the context of health and safety, this approach is both post hoc and reactive.
- The application of epidemiology provides an opportunity for health professionals to diagnose contemporary health and safety hazards as they emerge, for example, the incidence of asbestosis related to working practices. Further, epidemiology encompasses measurement of the effectiveness of interventions and the dissemination of findings to guide the design of further initiatives.
- Health promotion may be contrasted with the traditional medical model in that the focus is on the a priori prevention of ill health. Primary care initiatives have employed techniques with some success, such as exercise, awareness of staff mental health and healthy eating.

There have been moves to increase the provision of health and safety advice in the primary care arena. It has been suggested that advice in primary care could lead to empowerment of the worker and provide them with an opportunity to influence workplace exposure for their colleagues and may influence management attitudes.[233]

Two occupational advisory services in Newham and Sheffield, respectively, were evaluated and indicated significant differences between advised and non-advised patients on a large number of health and safety-related outcomes. Benefits were found in terms of improvements and changes in the workplace, and also in health improvements or stability. Workplace outcomes were related to those that were identified by the occupational health advisor (after discussion with the patient) with little or inadequate health and safety provision identified. Health outcomes are often more difficult to evaluate and frequently need more specialist investigation for

conditions such as asthma and dermatitis, which also may have long latency periods such that benefits may not be realised within the evaluation period.[220]

3.4 Roving Safety Representatives (RSR)

Eight roving safety representatives (RSRs) were scheduled to visit 50 volunteer farms. health and safety consultants will visit the same amount of farms and comparisons will be made with the performance of health and safety of farms that receive no visit at all. Functions include carrying out joint inspections of the workplace, looking at documents relevant to health and safety, discussing the causes of injury and ill health in agriculture, encouraging worker involvement in health and safety by looking at consultation procedures, obtaining their views on health and safety and examining concerns, providing the farmer information on standards of agriculture, and carrying out further visits to check progress and promote further improvements. It is currently too early to comment on practical achievements, but uptake already demonstrates that farmers are not hostile to the initiatives as previously suggested; employers are very positive and welcome the involvement of their workforce. However, it might be argued that the main challenge will be to expand the initiative and encourage those farmers who are reluctant to take part in the scheme. This could be aided by granting legal rights to RSRs to gain access to farms.[234] A scheme has been set up to further train the RSRs, providing emphasis on skill development, replicating conditions that may occur on the farms through role play, motivating employers and workers, inspection skills, using information and the law. Feedback from the RSRs has been positive. Communication and union support has been an important factor in sustaining the work of the RSR, which can be difficult and demanding and is qualitatively different from the work of a representative in a single workplace. RSRs are reimbursed for their loss of earnings, travel and subsistence and require substantial commitment in order to negotiate time off work or devote spare time to the role.[220]

3.5 Safe and Healthy Working Programme

Advice lines have often been part of health and safety initiatives. An evaluation of a new service set up for SMEs in Scotland, Safe and Healthy Working (SAHW), found that a greater percentage of advice line users (88 percent of employers) reported taking action to improve health and safety in the workplace than those who had accessed information via the scheme's website (65 percent).[235] Improvements reported to be a direct result of advice were made in areas such as policy development, risk assessments, fire safety, chemical hazards, and equipment and safety checks. Familiar reasons were given for not taking further action after receiving advice. These included time constraints, lack of perceived necessity and cost factors. There is still room to increase motivation to improve health and safety, but the response to advice given was found to be largely positive by SMEs followed up in the study.[235] However, one drawback of advice lines is that they are labour-intensive and may not be able to provide the level of service needed when demand for advice is high. Arguably, websites do not suffer from this drawback if they are designed to be interactive.

The SME Assessment Index, for instance, is set up in such a way that website users can carry out online assessments and then use the site to access benchmarks and make direct comparisons with the health and safety performance of their own enterprise. The Safe and Healthy Working website is not so fully interactive yet it carries links to other

sources of information including an email address set up for further queries. The SAHW had 42,377 visits to the website, yet only 272 queries were emailed from the site compared to 2,361 calls to the advice line. It was not possible to assess how many of the visits were made by SMEs compared to large enterprises. Nevertheless, the reliance on advice lines by SMEs may indicate that these enterprises are still unclear as to how to distinguish what information is relevant to them and need further guidance. Advice lines, therefore, still have a significant role in not only the dissemination of information but also guiding the SME to the correct or relevant resources.[220]

3.6 Safety and Support for Business (SAS)

Between 1996 and 1998, a health and safety management support project – Safety and Support for Business (SAS) – was developed in an economically deprived area, within a large industrial city in the north-west of England. The project aimed to provide an infrastructure of basic health support and advice for small (<50 employees) and micro businesses (<10 employees), as part of a programme of urban regeneration for the area, a central objective of which was to address issues of social inequality in health and well-being.

The approach adopted has been described as one of facilitative action, designed to assist and empower small businesses to address workplace health and safety issues. By working closely with small business communities over an 18-month period, the initiative sought to establish trusting partnerships between project staff and local businesses. Initial interactions centred on identifying the health and safety needs for small businesses; this resulted in the identification of four health and safety interventions.

The target region for the initiative – areas of south Liverpool – has a history of economic decline, low per capita income and above-average standards of ill health. Male unemployment in the area was approximately 30 percent in 1997. The Safety and Support for Business scheme was part of a broader initiative, designed to address problems of urban regeneration in the area and broader issues of social inequality in health. The importance of healthy workplaces in maintaining and improving public health is a priority of the UK government. The project's catchment area included approximately 600 businesses, of which 70 percent had fewer than 10 employees. Throughout the scheme's two-year duration, a total of 123 local companies had some access to the project's health and safety interventions (construction n = 10, manufacture n = 23, retail n = 10, service n = 50, other n = 30).

The principal objectives of the project were to:

- gain a detailed insight into the health and safety information, advice and service needs of small businesses
- identify a range of initiatives tailored to meet the identified needs of small businesses
- develop and implement the identified initiatives
- evaluate the impact of the identified initiatives in meeting the health and safety information needs of small businesses.

An independent evaluation of the scheme was conducted and information was gathered via a combination of face-to-face and telephone interviews with representatives from a

sample (n = 36) of participating businesses. A weakness of the evaluation was that no attempt was made to elicit responses from non-participating businesses that had received marketing information but elected to abstain from participation.

Awareness/penetration:

- Of a target population of approximately 600 local businesses, 140 had some contact with the SAS project team. This can be taken to represent a penetration rate of approximately 20–25 percent.

Motivation to participate:

- 63 percent (n = 140) were motivated to participate by the offer of a free inspection of their premises.
- 22 percent (n = 140) thought that some other benefit might accrue from participation, for example, a lowering of health and safety insurance premiums.
- 7 percent (n = 140) were motivated by some other trigger (for example, an imminent inspection from a regulatory authority).
- 4 percent (n = 140) were recommended to the project by word of mouth.

Perhaps unsurprisingly, the level of uptake was greatest for those initiatives that were at zero cost to participating businesses. The uptake of costed initiatives was below 30 percent, with the exception of the construction sector.

The impact was as follows:

- A number (unstated) of companies are said to have updated their health and safety practices and policy following participation in the scheme.
- A number (unstated) of companies reported that participation in the scheme had increased their awareness of relevant legislation.
- A number (unstated) of participating businesses cited potential economic benefits arising from participating in the scheme. Examples cited included:
    - improved company image – as a safety-conscious business
    - improved chances of winning tenders for new work due to being able to produce health and safety management documentation, for example. a formal health and safety policy statement; risk assessment and safety management documentation.

The aims of the SAS project appear to have been realised:

- The four interventions were successfully developed and applied..
- The project demonstrated that short-term (two-year) health and safety projects can have an impact on small businesses' priorities. Gaining support from SMEs for health and safety interventions is notoriously difficult; against this background, the project seems to have been quite successful.
- The facilitative approach applied throughout the project appears to have been successful in developing links with a significant number of small and micro businesses in the target region.

3.7 Safety Information Centres

Safety Information Centres (SICs) exist to provide a point of access to assist the SME with safety management systems. SMEs have been reported to contact SICs to seek advice in the formulation of policy documents and risk assessments.[262] A Safety

Information Centre may then provide a two-fold benefit to the SME, first, by providing practical guidance in the creation of the requisite bureaucracy of health and safety compliance, and second, by providing a broader and more strategic understanding of health and safety practice. However, as with other interventions, safety information centres have still to overcome employers' suspicion that free services lack expertise and the concern that centres have close affiliations with trade unions.[220]

3.8 Small Business Trade Association Forum

The Small Business Trade Association Forum is chaired by Health and Safety Commissioner Judith Donovan CBE. It is made up of members from trade associations and organisations that represent small businesses.

The forum was set up to:

- make sure that the Health and Safety Commission (HSC) and Health and Safety Executive (HSE) hear the concerns of small businesses
- improve the way HSC and HSE communicate with small businesses
- consult small businesses on new initiatives and proposed changes in health and safety law.

Terms of reference:

- HSC/HSE to use the Forum as a high-level consultation resource, available for additional consultation on:
    - the effects of proposed new or amended legislation on the small business sector
    - UK/EU scenario planning
    - small business marketing and outreach, particularly communications.
- Trade associations to utilise the forum as a counselling body for:
    - proposed legislative effects
    - emerging scenario impact, particularly early warnings
    - improvements to type and nature of small business marketing and outreach.
- HSC/HSE to support the trade associations with access to:
    - HSE specialists
    - other government departments and non-government bodies.
- Trade associations to support HSC/HSE with advocacy to:
    - explain the health and safety business case
    - act as champions in public debate
    - improve the perception of HSC/HSE and its relationship with the small business sector.
- HSC/HSE and trade associations to share intelligence such as:
    - statistical information
    - research on small businesses.

Hopes of the forum:

- 'Make the voice of small business heard':
    - Both small business and/or their association's type of small business.
- 'Lobby about specific issues':
    - Putting a point of view when their industry is directly affected.
    - Some only envisage attending when such issues are on the agenda.

- ‘Learn about forthcoming changes and initiatives’
    - Some have the underlying policy or regulation in mind.
    - Others are happy to input at any level.
- ‘Information about developments in H&S’
    - Access to ‘information flow’ from HSE, contacts, ‘bulk copies’ of publications.
    - ‘H&S’ often a core part of their trade association’s work and their ‘offer’.

The evaluation was undertaken among both trade association (TA) representatives and HSE staff to understand views of the forum’s progress. Telephone interviews were conducted, from 5–50 minutes duration with 27 trade association representatives and 10 HSE staff with experience of presenting topics to the forum.

Was the forum delivering? Overall, representatives were positive in their attitudes to the forum, in that the existence of the forum in itself was a step forward for small businesses and by the implicit recognition of the value of trade associations to HSE. Some felt the forum has already helped to influence HSE/HSC and shape implementation of policy, whilst others felt demonstrable effects had been confined largely to publications or communications, rather than fundamentals:

- Influencing fundamentals was seen to be a ‘long game’.
- Too early to expect to see results, but ultimately the basis on which the forum will be judged.
- Some do see communications as a strategic issue.

However, they were optimistic for the future.

Consultation with TA members has so far been relatively limited, mainly because representatives felt there had not been the need. However, lack of consultation is in part a resource issue:

- Reflects how easy it is for a TA to consult members.
- Whether they have in place a ‘slick’ mechanism for doing so.

There had been relatively little follow on from the meetings themselves, although representatives felt that, had it been required, relevant HSE personnel would have been willing facilitators. Some gave examples where they had taken issues up and HSE staff had been directly involved in next steps.

Pre-and post-meeting documentation – representatives:
Representatives can feel there is a lot to go through, but no more than is necessary:

- Extent of output is, for many, symptomatic of why the forum exists.
- Frequent spontaneous praise of ‘excellent documentation’.

For some, the documentary output, including non-forum elements, is more important than the meetings themselves. All felt that the output was well presented, clear, concise and easy to absorb. Suggestions that paper format should be available, and that electronic delivery could be enhanced.

Forum meetings – representatives:

Feelings towards the way the meetings were run were very positive with only very occasional and minor niggles. There were positive comments about the meeting ambience and group dynamics:

- Good forum for debate, no shortage of comment from the floor.
- No one felt that they would find it difficult to make a contribution.
- Chairman felt to run the meetings well.
- Brisk, no nonsense down to earth manner, in tune with representatives.
- Tries to draw out comment, manages those trying to ride hobby horses.

Good opportunities for networking in and around the meeting; however, there were some concerns over what might happen if the forum continues to grow:

- Current size (about 20) thought about right.
- Will forum become more formal, less discursive if it grows much more?

Growing forum membership:
Respondents thought that it will be hard to maintain the positive ambience of the meetings themselves if attendance becomes too large. However, due to pressure of time and need to prioritise, not all new recruits to the forum will attend every meeting. Some may have in mind only attending when they feel there is an item of specific relevance to their TA on the agenda. This could work to the forum's advantage as the net for consultation could become wider while the relatively intimate atmosphere of the current meeting format can be preserved

HSE staff:
Some feel they have benefited much more from the forum than others. Possible factors behind these differences seemed to include:

- expectations of HSE staff
- the subject, how it was presented, and what was possible
- the subject's relevance to the attendees.

It was thought worth exploring why some sessions seem to have been more productive than others. This will help to inform what subjects might be most usefully debated by the forum. Not every issue that affects small businesses will be appropriate for presenting to the meetings of the forum; neither will the forum be the most appropriate source of feedback in every case.

Lansdown et al.[220] completed an extensive review of OHS programmes designed for small businesses, provided by a number of agencies over the last 10 years within the UK. These notes are taken from that publication.

3.9 SME Assessment Index

The SME Assessment Index[224] developed by the HSE with involvement from insurers is another web-based tool to assess health and safety. The index also gives the opportunity for benchmarking and may promote more awareness of the adequacy of the SMEs' health and safety programme. The tool is currently undergoing evaluation. Such internet initiatives still need to be further evaluated – more details are needed, in particular, of the nature of users, and to what extent the information provided is utilised. However, there appears to be an increasing momentum in the amount of emerging initiatives that

use the web both as a provider of information and as an interactive facility to assess performance.[220]

3.10 Voluntary Certification

Associated with customer qualifying requirements, for example, ISO 9000, quality certification may be one of the most effective mechanisms to ensure good health and safety practice within the SME.[218] In their study considering business interest in voluntary certification schemes, Vassie and Cox[218] reported that the majority of SMEs consulted viewed implementation of a quality management system as a key business objective. However, response rates to their survey were low, and the implications should be considered in assessment of findings. Focus group findings suggested that compliance with BS5750 (or more latterly, BS EN ISO 9000:2000) would bring health and safety benefits. However, the required investment would not justify the gains. Health and safety was found to be (yet again) not identified as a key business objective. It remains an interesting question that the businesses did not appear to recognise the inherent economic business advantage that certification may provide, regardless of any ancillary health and safety benefits. Vassie and Cox[218] report the three primary barriers to implementation of health and safety management systems as bureaucracy, resource requirements, and low perceptions of the importance of health and safety to the business.

3.11 Worker Health and Safety Centres

Worker health and safety centres form another trade union-supported initiative. One example received funding from Keighley Trade Union council, the National Lottery, Bradford Health Action zone and Keighley area single generation budget. The Keighley Work Safe project aimed to provide advice on:

- health and safety at work
- workers injured or made ill by their work
- free general health and safety advice
- information and training for SMEs and voluntary sector groups.

For those within a 30 mile radius of Keighley, the centre provides:

- free access to their health and safety library
- free audiometry (hearing tests) for workers exposed to noise
- health and safety workshops and training
- health and safety information and leaflets
- online and telephone advice aimed at the voluntary sector, community groups, small local companies, employees and trade union representatives
- drop-in advice service
- outreach advice service
- access to community-based training and meeting rooms.

In a six-month period, 402 people (70 percent individual workers) were provided with OHS advice. Eighty percent of advice came by emails. Further, during the same period, there had been 20 visits to workplaces and homes. Work Safe visited a number of businesses involved in the small business forum to provide advice on health and safety events to the employers and workers, and for the forum itself. Some attitudes of the employers were observed as a barrier. They are aware of the strong trade union links of

the centre, they think a free service lacks credibility, and they were concerned that greater health and safety involvement creates more expenditure.[220]

3.12 Workplace Health Connect

Workplace Health Connect (WHC) was launched in February 2006. It is a free, no-obligation service providing SMEs with advice on workplace health and safety. WHC aims to build the capacity for SMEs to tackle future challenges internally or with the help of recommended specialists through the transfer of occupational health and safety and return to work (OHSR) knowledge and skills direct to companies. The WHC scheme, which is currently a pilot initiative, was designed to exist at three levels:

- Level 1 – a free, national advice line taking calls from both employers and employees, offering detailed and tailored practical advice. This is supported by a dedicated website.
- Level 2 – free problem-solving visits from qualified advisors for employers calling Level 1 with postcodes within five regions. 'Pathfinders' (contractors that are often based on regional partnerships) deliver this service according to a two-visit model (with a telephone follow-up three months later).
- Level 3 – 'signposting' to approved local specialists, by the advice line and pathfinders, for employers requiring further support.

Workplace Health Connect was based on a model for occupational health, safety and return-to-work support, developed by HSE following work undertaken within the Securing Health Together programme. The HSC endorsed the model and the programme of work to extend access to occupational health, safety and return-to-work support. The direction taken for Workplace Health Connect was shaped by key elements of HSC's strategy, namely:

- innovative ways of working
- working with and through others
- providing accessible advice and support
- a focus on small businesses.

The Health and Safety Executive (HSE) commissioned an evaluation of the project. The two main ongoing strands of the evaluation are a process evaluation of service delivery (including costs) and service penetration, and an impact evaluation of the initiative in terms of intermediate and final outcome measures (for example, changes to attitudes about occupational health or changes to the number of days off taken by staff within the employer) and an estimate of the overall costs and benefits of WHC.

The progress report[237] focuses mainly on strand 1, with strand 2 the focus of the final report when data on impacts has had time to emerge. The progress report draws on monitoring data collected by the advice line and pathfinder advisors, interview data from service providers reflecting on their experiences in more depth, and indepth case study work with employers to follow up on their experiences of using the service.

Evaluation findings:

- Call volumes to level 1 boosted by recent marketing efforts.
- Referral and take-up rates high and improving.
- Telemarketing delivers, but employers are harder to engage.
- Service continues to reach small employers.

- Responses to the service remain positive.
- Employer toolkit popular where in use.
- Service remains health-focused, but employers driven by safety concerns.

The main message from this analysis is that the service continues to receive a positive response from employers. In addition, the levels of advice line calls and referrals onto Level 2 are both increasing, demonstrating that leads are followed through effectively by staff at all levels of service delivery.

The service has maintained its contact with smaller and less well developed employers (in health and safety terms), therefore effectively reaching its target audience, although there are some sectoral disparities in take-up (which seem to be a result of both regional sectoral targeting and better responses amongst sectors such as care and manufacturing). The use of telemarketing has maintained user levels effectively, but employers coming into the service through this route are proving less likely to actually take up a first or second visit than employers who find out about the service themselves or through regional outreach activities.

Taking health messages into SMEs remains a challenge, although there is evidence that advisors, both level 1 and 2, are continuing to raise the issues as a standard service element.
However, the driving concerns about safety within smaller employers can often be related to health issues (for example, manual handling, exposure to hazardous substances). Sickness absence and stress are often seen, on the other hand, by both advisors and employers, as 'not a small business issue'. Despite this, through its knowledge-transfer approach, WHC might be laying down the foundations in these areas, which employers can build on if needed in the future. Having access to resource materials that they can access as and when needed in such circumstances would seem to be a useful approach to back up the work of advisors in this area.

HSE is expecting the final evaluation report to be delivered in January 2009. Until this report is available, conclusions and assessments cannot be made on the impact or success of the Workplace Health Connect pilot.

3.13 Worker Safety Advisors (WSA)

Some projects have experimented with multi-party collaboration to enhance health and safety practice. One scheme considered main five sectors in which there were particular problems with worker involvement and participation, namely small automotive/fabrication, civil construction, hospitality (notably public houses), retail and the voluntary sector. The HSE was responsible for recruiting employer volunteers; the TUC recruited the WSAs. The retail sector was not represented in the scheme as the main volunteer was suspicious of the scheme. The WSAs were paid a salary and were seconded from their union. They could participate if they had been trained to stage 2 of the health and safety level or equivalent.

The TUC reported that volunteering for the project by employers was encouraging and that the WSAs experienced positive and welcoming employers and workforces while exercising their duties. However, the challenge was to be able to engage with those enterprises that were not so willing. Practical experience rather than purely theoretical

knowledge was seen as crucial in winning the support of the companies. Adequate administrative and technical support from the trade union was seen by the TUC to be crucial.

In another project, a Worker Safety Advisors pilot was set up to support worker representation.[238] Roving safety advisors were employed to provide health and safety information and facilitate employee participation. The scheme primarily targeted non-unionised workplaces. One attractive feature of the scheme was the opportunity to encourage health and safety participation without having the involvement of a health and safety inspector. Outcomes observed from the pilot included improvements in approaches to health and safety, increased internal communication and consultation on health and safety matters, and new structures developed to support health and safety activity. Funding of future work safety advisors (originally planned to be on secondment from large firms or trade unions), needs to be considered. Future nationwide schemes managed jointly between HSE, TUC and employer organisations have been suggested.[238]

9. References

1. Great Britain Committee on Safety and Health at Work. (1972). *Safety and health at work: Report of the Committee, 1970–72*. Chairman: Lord Robens. London: HMSO.

2. Pezzullo, L., & Crook, A. (2006). *The economic and social costs of occupational disease and injury in New Zealand. Technical report prepared for the National Occupational Health and Safety Advisory Committee* (NOHSAC Technical Report 4). Wellington: NOHSAC.

3. New Zealand Government. (2005). *Workplace Health and Safety Strategy for New Zealand to 2015*. Retrieved 1 April 2008 from http://www.whss.govt.nz.

4. Labour Committee. (1996). *Inquiry into the administration of occupational safety and health policy: Report of the Labour Committee*. Wellington: New Zealand House of Representatives.

5. Department of Labour. (2008b). *Workplace visits*. Retrieved 13 October 2008 from http://www.osh.dol.govt.nz/services/work-visits.shtml.

6. Eakin, J., Lamm, F., & Limborg, H.J. (2000). 'International perspective on the promotion of health and safety in small workplaces'. In K. Frick, P.L. Jensen, M. Quinlan & T. Wilthagen (Eds.), *Systematic occupational health and safety management: Perspectives on an international development*. Oxford: Pergamon.

7. Department of Labour. (2007c). *Workplace Health and Safety Strategy for New Zealand to 2015: Snapshot of progress 2006/07*. Retrieved 15 August 2008 from http://www.whss.govt.nz/snapshot06-07/WHSS-Strategy-Snapshot06-07-colour.pdf.

8. Pearce, N., Dryson, E., Gander, P., Langley, J., & Wagstaffe, M. (2008). *Review of the key characteristics that determine the efficacy of OHS instruments. Report to the Minister of Labour*. Wellington: NOHSAC.

9. Department of Labour. (2008a). *Keeping work safe. How the Department of Labour enforces the Health and Safety in Employment Act 1992*. Wellington: Author.

10. Sorensen, O.H., Hasle, P., & Bach, E. (2007). Working in small enterprises – is there a special risk? *Safety Science, 45*, 1044–1059.

11. Mayhew, C. (1997a). *Barriers to implementation of known occupational health and safety solutions in small businesses*. Sydney: Division of Workplace Health and Safety and National Occupational Health and Safety Commission.

12. Mayhew, C. (1999). 'Identifying patterns of injury in small businesses: Piecing together the data jigsaw'. In C. Mayhew & C. Peterson (Eds.), *Occupational Health and Safety in Australia*. Sydney: Allen & Unwin.

13. Quinlan, M. (1998). 'The implication of labour market restructuring in industrialised societies for occupational health and safety'. *Economic and Industrial Democracy, 20* (3), 427–460.

14. Feyer, A.-M., Langley, J., Howard, M., Horsburgh, S., Wright, C., Alsop, J., & Cryer, C. (1999). *Work-related fatal injuries in New Zealand 1985–94: Descriptive epidemiology*. Dunedin: Injury Prevention Research Unit and New Zealand Environmental and Occupational Health Research Centre.

15. Mayhew, C., & Quinlan, M. (1999). 'The effects of outsourcing on OHS: A comparative study of factory-based and outworkers in the garment industry'. *International Journal of Health Services, 29* (1), 83–107.

16. Stevens, G. (1999). *Workplace injuries in small and large manufacturing workplaces 1994/5–1995/6*. London: HSE.

17. Lamm, F. (2000a). 'Occupational health and safety regulation: A New Zealand perspective'. In P. Bohle & M. Quinlan (Eds.), *Managing occupational health and safety: A multidisciplinary approach*. Melbourne: MacMillan.

18. Okun, A., Lentz, T.J., Schulte, P., & Stayner, L. (2001). 'Identifying high-risk small business industries for occupational safety and health interventions'. *American Journal of Industrial Medicine, 39*, 301–311.

19. Morse, T., Dillon, C., Weber, J., Warren, N., Bruneau, H., & Fu, R. (2004). 'Prevalence and reporting of occupational illness by company size: Population trends and regulatory implications'. *American Journal of Industrial Medicine, 45*, 361–370.

20. Hasle, P., & Limborg, H.J. (2006). 'A review of the literature on preventive occupational health and safety activities in small enterprises'. *Industrial Health, 44* (1), 6–12.

21. Walters, D. (2006). 'The efficacy of strategies for chemical risk management in small enterprises in Europe: Evidence for success?'. *Policy and Practice in Health and Safety, 36* (1), 81–116.

22. Dryson, E. (1993). 'Occupational health needs in small industry in New Zealand – preferred sources of information'. *Occupational Medicine Oxford, 43* (4), 176–179.

23. Biggs, D., & Crumbie, N. (2000). *Characteristics of people working with chemical products in small firms* (Report No. 278/2000). Sudbury, United Kingdom: HSE Books.

24. Simonsen, L., Christensen, J.M., Wilhart, P., Olsen, E., Bach, E., & Roepstorff, C. (2003). *Arbejdsbetinget udsættelse for kræftfremkaldende kemiske stoffer og arbejdsbetingede hjerneskader på grund af udsættelse for organiske opløsningsmidler eller tungmetaller* (Working report). Copenhagen, Denmark:

Arbejdsmiljøinstituttet (AMI), Center for Alternativ Samfunds Analyse (CASA).

25. Vickers, I., Baldock, R., Smallbone, D., James, P., & Ekanem, I. (2003). *Cultural influences on health and safety attitudes and behaviour in small businesses*. London: HSE.

26. Baldock, R., James, P., Smallbone, D., & Vickers, I. (2006). 'Influences on small-firm compliance-related behaviour: The case of workplace health and safety'. *Environment and Planning C: Government and Policy, 24* (6), 827–846.

27. Antonsson, A.-B. (2007). *Strategies for success? Managing chemical risks in small workplaces: A review of Swedish practice* (Draft Research Report: B1717). Stockholm: Swedish Environmental Research Institute.

28. Dawson, S., Willman, P., Clinton, A., & Bamford, M. (1988). *Safety and work: The limits of self-regulation.* Cambridge: Cambridge University Press.

29. Storey, D. (1994). *Understanding the small business sector*. London: Routledge.

30. Lamm, F. (1999). *Occupational health and safety in Australian small businesses: What can be done to reduce the lack of awareness and raise the level of compliance in Australian small businesses*. Canberra: National Occupational Health and Safety Commission.

31. Walters, D.R. (2001). *Health and safety in small enterprises*. Brussels: PIE, Peter Lang.

32. Ministry of Economic Development. (2007). *SMEs in New Zealand: Structure and dynamics*. Wellington: Author.

33. Great Britain Committee of Inquiry on Small Firms. (1971). *Small firms: Report of the Committee of Inquiry on Small Firms*. Chairman: J.E. Bolton. London: HMSO.

34. Australian Bureau of Statistics. (2002). *Annual Review of Small Business 2001*. Canberra: Office of Small Business.

35. Massey, C. (2005). 'The size and significance of the small business sector'. In C. Massey (Ed.), *Entrepreneurship and small business management in New Zealand* (pp. 3–16). Auckland, New Zealand: Pearson Education New Zealand.

36. Knuckey, S., Johnston, H., Campbell-Hunt, C., Carlaw, K., Corbett, L., & Massey, C. (2002). *Firm foundations: A study of business practices and performance in New Zealand*. Wellington, New Zealand: Ministry of Economic Development.

37. Wilkinson, A. (1999). 'Employment relations in SMEs'. *Employee Relations, 21* (3), 206–217.

38. Hedal, L. (2002). *Små virksomheder og Internet - et markedsføringsperspektiv* (1st ed.). Odense: Denmark.

39. Coviello, N.E., Brodie, R.J., & Munro, H.J. (2000). 'An investigation of marketing practice by firm size'. *Journal of Business Venturing, 15* (5), 523–545.

40. Barney, J. (1991). 'Firm resources and sustained competitive advantage'. *Journal of Management, 17* (1), 99–120.

41. Birch, D.L. (1989). 'Change, innovation and job creation'. *Journal of Labour Research, 1*, 33–81.

42. Fletcher, D. (2002). *Understanding the small family business*. New York: Routledge.

43. Statistics New Zealand. (2008a). *New Zealand Business Demography Statistics (Business Dynamics): February 2007*. Retrieved 11 November 2008 from http://www.stats.govt.nz/store/2008/03/nz-business-demography-statistics-dynamics-feb07-hotp.htm.

44. Lamm, F., & Walters, D. (2004). 'OHS in small organisations: Some challenges and ways forward'. In L. Buff, N. Gunningham & R. Johnston (Eds.), *OHS regulations for the 21st Century* (pp. 94–120). Sydney: Federation Press.

45. Massey, C., & Ingley, C. (2007). *The New Zealand policy environment for the development of SMEs* (Research Report). Wellington: NZ Centre for SME Research, Massey University.

46. Battisti, M. (2008). *Individual employment agreements: Perspectives from New Zealand small enterprises.* Report based on BusinesSMEasure November 2007. Wellington, New Zealand: New Zealand Centre for SME Research, Massey University.

47. Hannif, Z., & Lamm, F. (2005). 'When non-standard work becomes precarious: Insights from the New Zealand call centre industry'. *Management Review, 16* (3), 324–350.

48. Lamm, F., & Tipples, R. (2005). 'Dealing with employment relations'. In C. Massey (Ed.), *Managing small businesses*. Auckland: Pearson.

49. Hyslop, D.R., & Maré, D.C. (2007). *Job employment intensity, matching, and earnings 1999–2005*. Wellington: Statistics NZ.

50. Fursman, L. (2008). *Working long hours in New Zealand: A profile of long hours workers using data from the 2006 Census*. Wellington: Department of Labour and the Families Commission.

51. Mayhew, C., & Quinlan, M. (2001). 'The effects of changing patterns of employment on reporting occupational injuries and making workers' compensation claims'. *Safety Science Monitory, 5* (1), 1–12.

52. McCrostie-Little, H., Taylor, N., McClintock, W., Taylor Baines and Associates, & Ruris Consultancy. (1997). *'Unpaid' farm work: A scoping study* (Technical Paper 97/21). Wellington: MAF Policy.

53. Gasson, N.R., Linsell, C., Gasson, J., & Mundy-McPherson, S. (2003). *Young people and work*. Dunedin: Dunedin College of Education, Te Kura Akau Taitoka.

54. Statistics New Zealand. (2007). *Business Activity Statistics*. Retrieved 3 April 2008 from www.stats.govt.nz.

55. O'Connell, L., Firth, H.M., & McBride, D.I. (2001). 'Occupational health and safety in small businesses'. *Journal of Occupational Health and Safety, Australia and New Zealand, 17* (5), 509–513.

56. Department of Labour. (2007a). *Fatality Record from 1 July 2006 to 30 June 2007*. Wellington.

57. Victorian WorkCover Authority. (2006). *Reported Victorian workplace deaths and injuries 2001 to 2005*. Melbourne.

58. Queensland Department of Employment and Industrial Relations. (2006). *Workplace Health and Safety Queensland: Annual Report*. Brisbane.

59. Commonwealth of Australia (Department of Education, Employment & Workplace). (2008). *Comparative performance monitoring report: Comparison of occupational health and safety and workers' compensation schemes in Australia and New Zealand* (10th ed.). Retrieved 15 October 2008 from http://www.workplace.gov.au/NR/rdonlyres/C0B8ABD3-59F8-4812-868D-233E22892F58/0/CPM10Reportwebcopy.pdf.

60. Driscoll, T., 't Mannetje, A., Dryson, E., Feyer, A.-M., Gander, P., McCracken, S., Pearce, N., & Wagstaffe, M. (2004). *The burden of occupational disease and injury in New Zealand. Technical report prepared for the National Occupational Health and Safety Advisory Committee* (NOHSAC Technical Report). Wellington: NOHSAC.

61. Adams, M., Burton, J., Butcher, F., Graham, S., McLeod, A., Rajan, R., Whatman, R., Bridge, M., Hill, R., & Johri, R. (2002). *Aftermath: The social and economic consequences of workplace injury and illness.* Wellington: Department of Labour and the Accident Compensation Corporation.

62. Department of Labour. (2006b). *Regulatory impact statement for proposed workplace safety ACC levy discount for small businesses in six high risk industries: The nature and magnitude of the problem and the need for*

government action. Retrieved 10 June 2008 from http://www.osh.govt.nz/publications/research/acc-levy0603/pg1.html.

63. Allen & Clarke Policy and Regulatory Specialists. (2006). *Occupational safety and health in New Zealand. Technical report prepared for the National Occupational Health and Safety Advisory Committee* (NOHSAC Technical Report 7). Wellington: National Occupational Health and Safety Advisory Committee.

66. Access Economics. (2003). *Costs of workplace injury and illness to the Australian economy: Reviewing the estimation methodology and estimates of the level and distribution of costs*. Australia: Report for the National Occupational Health and Safety Commission.

67. National Occupational Health and Safety Commission. (2004). *The costs of work-related injury and illness for Australian employers, workers and the community*. Retrieved 4 May 2008 from http://www.ascc.gov.au/NR/rdonlyres/C8FC4DE9-8786-4DD6-BAFC063F5EFC8C64/0/CostsOfWRID.pdf.

68. Watson, W.L., & Ozanne-Smith, J. (1997). *The cost of injury to Victoria* (Report No. 124 for the Department of Human Services in Victoria). Melbourne: Monash University Accident Research Centre.

69. KPMG Consulting. (2002). *The cost of work related injuries, ill health and non-injury accidents to the Northern Ireland economy*. Report for the Health and Safety Executive Northern Ireland. Retrieved 4 June 2008 from http://www.hseni.gov.uk/index/information_and_guidance/sector_specific_guidance/general_manufacturing.htm.

70. Khan, R. (1993). *The effect of government on small businesses.* Palmerston North, New Zealand: Department of Management, Massey University.

71. Bell, C. (1996). *Time for business: Report of the Small Business Deregulation Task Force, Department of Industry, Science and Technology*. Canberra: Australian Government Publishing Service.

72. Lindoe, P. (1996). *Internal control in the small business sector*. Oslo: Ad Nortom.

73. Bickerdyke, I., & Lattimore, R. (1997). *Reducing the regulatory burden: Does firm size matter?* (Staff Research Paper). Melbourne: Industry Commission.

74. Lentz, T., Okum, A., Schulte, P., & Stayner, L. (1999). *Identifying high-risk small business industries: The basis for preventing occupational injury, illness, and fatality.* Washington: National Institute for Occupational Safety and Health, US Department of Health and Human Services.

75. Lamm, F. (2002). 'OHS in small businesses'. In M. Lloyd (Ed.), *Occupational health and safety in New Zealand: Contemporary social research* (pp. 93–118). Wellington: Dunmore Press.

76. Laird, I.S., Olsen, K.B., Harris, L.-A., & Perry, M. (2007). *Review of international literature relating to the development of preventive interventions to reduce hazardous chemical exposures in small business in New Zealand* (Report to Injury Prevention Group, Accident Compensation Corporation). Palmerston North, New Zealand: Centre for Ergonomics, Occupational Safety and Health, Massey University.

77. Nichols, T. (1997). *The sociology of industrial injury*. London: Mansell.

78. Scott, M., Roberts, I., Holroyd, G., & Sawbridge, D. (1989). *Management and industrial relations in small firms* (Research Paper No. 70). London: Department of Employment.

79. Rainnie, A. (1989). *Industrial relations in small firms: Small isn't beautiful*. London: Routledge.

80. Eakin, J. (1992). 'Leaving it up to the workers: Sociological perspective on the management of health and safety in small workplaces'. *International Journal of Health Services, 22* (4), 689–704.

81. Rogowski, R., & Wilthagen, T. (1994). *Reflexive labour law: Studies in industrial relations and employment regulations*. Denver: Kluwer Law Taxation.

82. Sappey, R.B. (1983). 'Being small isn't beautiful'. *Australian Society, 2* (4), 16–27.

83. Sappey, R.B. (1985). 'Industrial relations: A small business perspective'. *Journal of Industrial Relations, 27* (3), 350–63.

84. Kitay, J., & Sutcliffe, P. (1989). *Employers and employment relations in small business in Australia*. In M. Bray & D. Kelly (Eds.). Conference Proceeding, Association of Industrial Relations Academics of Australia and New Zealand, Sydney.

85. Isaac, J.E. (1993). *Small business and industrial relations: Some policy issues*. Melbourne: Centre for Industrial Relations and Labour Studies.

86. Buultjens, J. (1994). 'Labour market deregulation: Does small business care?'. *International Journal of Employment Studies, 2* (1), 133–157.

87. Bohle, P., & Quinlan, M. (2000). *Managing occupational health and safety: A multidisciplinary approach* (2nd ed.). South Yarra: Melbourne: Macmillan.

88. Ore, T. (1992). 'Inter-industry variations in occupational injuries in Australia'. *Journal of Occupational Health and Safety, 8* (1), 41–45.

89. Bentley, T.A., Page, S.J., & Laird, I.S. (2001). 'Accidents in the New Zealand adventure tourism industry'. *Safety Science, 38* (1), 31–48.

90. Bethwaite, P., Cook, A., Kennedy, J., & Pearce, N. (2001). 'Acute leukemia in electrical workers: A New Zealand case-control study'. *Cancer Causes and Control, 12*, 683–689.

91. Lilley, R., Feyer, A.-M., Kirk, P., & Gander, P. (2002). 'A survey of forest workers in New Zealand. Do hours of work, rest, and recovery play a role in accidents and injury?'. *Journal of Safety Research, 33* (1), 53–71.

92. Walls, C., & Dryson, E. (2002). 'Failure after 5 years of self-regulation: A health and safety audit of New Zealand engineering companies carrying out welding'. *Occupational Medicine, 52*, 305–309.

93. Firth, H.M., Rothstein, D.S., Herbison, G.P., & McBride D.I. (2007). 'Chemical exposure among NZ farmers'. *International Journal of Environmental Health Research, 17* (1), 33–43.

94. Simmers and Associates Limited. (2007). *Health and safety in hairdressing: An evaluation of health and safety management practices in the hairdressing industry*. Wellington: Department of Labour.

95. McLean, D., Colin, D., Boffetta, P., & Pierce, N. (2002). 'Mortality and cancer incidence in New Zealand pulp and paper mill workers'. *New Zealand Medical Journal, 115* (1152), 186–190.

96. McLean, D., Cheng, S., 't Mannetje, A., Woodward, A., & Pearce, P. (2004). 'Mortality and cancer incidence in New Zealand meat workers'. *Occupational Environment Medicine, 61*, 541–547.

97. Firth, H.M., Rothstein, D.S., Herbison, G.P., & McBride, D.I. (2006). 'Dust and noise exposures among farmers in Southland, New Zealand'. *International Journal of Environmental Health Research, 16* (2), 155–161.

98. Day, L., Langley, J., Stathakis, V., Wolfe, R., Sim, M., Voaklander, D., & Ozanne-Smith, J. (2007). 'Challenges of recruiting farm injury study participants through hospital emergency departments'. *Injury Prevention, 13*, 88–92.

99. Lamm, F. (2003). *Fire safety in small tourist accommodation businesses: Working towards developing best practice models*. Wellington: New Zealand Fire Service Commission.

100. NIOSH. (1999). *Identifying high-risk small business industries: The basis for preventing occupational injury, illness, and fatality* (Department of Health and Human Services (NIOSH) Publication No. 99-107). Cincinnati, Ohio: Author.

101. Firth, H.M., Cooke, K.R., & Herbison, G.P. (1996). 'Male cancer incidence by occupation: New Zealand, 1972–1984'. *International Journal of Epidemiology, 25* (1), 14–21.

102. Feyer, A.-M., Williamson, A.M., Stout, N., Driscoll, T., Usher, H., & Langley, J.D. (2001). 'Comparison of work related fatal injuries in the United States, Australia, and New Zealand: Method and overall findings'. *Injury Prevention, 7*, 22–28.

103. Driscoll, T., Feyer, A.-M., Stout, N., & Williamson, A. (2002). 'Assessing the classification of work-relatedness of fatal incidents: A comparison between Australia, New Zealand and the United States'. *Injury Control and Safety Promotion, 9*, 32–39.

104. Spicer, R., Miller, T., Langley, J., & Stephenson, S. (2005). 'Comparison of injury case fatality rates in the United States and New Zealand'. *Injury Prevention, 11*, 71–76.

105. Ameratunga, S.N., Norton, R.N., Whitlock, G., MacMahon, S., Coggan, C., Jackson, R.T., Langley, J.D., Parag, V., Smith, D., & Woodfield, D.G. (2002). 'The New Zealand blood donors health study: Baseline findings of a large prospective cohort study of injury'. *Injury Prevention, 8*, 66–69.

106. Cryer, C., Langley, J., & Stephenson, S. (2004). *Developing valid injury outcome indicators. A report for the New Zealand Injury Prevention Strategy Injury Prevention Research Unit*. Dunedin, New Zealand: Department of Preventive and Social Medicine, University of Otago.

107. Stephenson, S., Langley, J., & Trotter, M. (2005). *Impact of injury in New Zealand*. Dunedin: Injury Prevention Research Unit, Department of Preventive and Social Medicine, Dunedin School of Medicine, University of Otago.

108. Pearce, N., Dryson, E., Feyer, A.-M., Gander, P., McCracken, S., & Wagstaffe, M. (2005). *The burden of occupational disease and injury in New Zealand: Report to the Associate Minister of Labour.* Wellington: NOHSAC.

109. Langley, J., Stephenson, S., Thorpe, C., & Davie, G. (2006). 'Accuracy of injury coding under ICD-9 for New Zealand public hospital discharges'. *Injury Prevention, 12*, 58–61.

110. Slater, T., Bradshaw, L., Fishwick, D., Cheng, S., Kimbell-Dunn, M., Erkinjuntti-Pekkanen, R., Douwes, J., & Pearce, N. (2000). 'Occupational respiratory symptoms in New Zealand hairdressers'. *Occupational Medicine, 50*, 586–90.

111. Lo, K., & Lamm, F. (2005). 'Occupational stress in the hospitality industry: An employment relations perspective'. *New Zealand Journal of Employment Relations, 30* (1), 23–48.

112. Thomas, P. (1990). ‘Safety in smaller manufacturing establishments’. *Employment Gazette, January*, 20–25.

113. Mayhew, C., & Quinlan, M. (1998). *Outsourcing and occupational health and safety: A comparative study of factory-based and outworkers in the Australian TCF industry*. Sydney: Industrial Relations Research Centre, University of New South Wales.

114. Quinlan, M. (2003). *The global expansion of precarious employment: Meeting the regulatory challenge.* Paper presented to the Australian Council of Trade Unions, 2 September. http://www.actu.asn.au/public/ohs/quinlan.html.

115. Burgess, J., & Campbell, I. (1998). ‘The nature and dimensions of precarious employment in Australia’. *Journal of Labour and Industry, 8* (3), 5–22.

116. Tucker, D. (2002). *‘Precarious’ non-standard employment – a review of the literature*. Retrieved 12 December 2007 from http://www.dol.govt.nz/PDFs/PrecariousNSWorkLitReview.pdf.

117. Blaiklock, A.J., Kiro, C.A., Belgrave, M., Low, W., Davenport, E., & Hassall, I.B. (2002). *When the invisible hand rocks the cradle: New Zealand children in a time of change.* Retrieved 14 November 2007 from: http://www.unicef-irc.org/publications/pdf/iwp93.pdf.

118. Caritas Aotearoa New Zealand. (2003). *Protecting children at work: Children’s work survey.* Wellington: Author.

119. Caritas Aotearoa New Zealand. (2006). *Delivering the goods: Responses to a survey of newspaper and leaflet delivery workers aged 10–16 years.* Wellington: Author.

120. Arend, R.J., & Wisner, J.D. (2005). ‘Small business and supply chain management: Is there a fit?’. *Journal of Business Venturing, 20*, 403–436.

121. Lamm, F. (2008). ‘OHS compliance in the small business sector: Matching compliance behaviour with OHS initiatives’. *Resilience* (French), forthcoming.

122. Quinlan, M., & Gunningham, N. (in press). *The changing world of work and emergent occupational disease and injury risks in New Zealand: A benchmark review*.

123. Robson, L.S., Shannon, H.S., Goldenhar, L.M., & Hale, A.R. (2001). *Guide to evaluating the effectiveness of strategies for preventing work injuries.* Retrieved 15 April 2006 from http://www.cdc.gov/niosh/docs/2001-119/pdfs/2001-119.pdf.

124. Lamm, F., Massey, C., & Perry, M. (2007). ‘Is there a link between workplace health and safety and firm performance and productivity?’. *New Zealand Journal of Employment Relations, 32* (1), 72–86.

125. Cryer, C. (1995). 'The epidemiology of work-related injury'. In C. Slappendel (Ed.), *Health and safety in New Zealand workplaces* (pp.15–60). Palmerston North, New Zealand: Dunmore Press.

126. Slappendel, C. (1995). 'Dominant theories of work-related injury causation'. In C. Slappendel (Ed.), *Health and safety in New Zealand workplaces* (pp. 213–247). Palmerston North, New Zealand: Dunmore Press.

127. Maré, D., & Papps, K. (2002). 'The effects of occupational safety and health interventions'. *Labour Market Bulletin, 2*, 57–100.

128. Waller, J.A. (1994). 'Public health then and now: Reflections on a half century of injury control'. *American Journal of Public Health, 84* (4), 664–670.

129. Mayhew, C. (1997b). 'Small business occupational health and safety information provision'. *Journal of Occupational Health and Safety, Australia and New Zealand, 13* (4), 361–373.

130. Tait, R., & Walker, D. (1998). 'Risk assessment in small enterprises: A study of attitudes and resources implications'. *Institution of Occupational Safety and Health Journal, 2* (1), 37–44.

131. Gunningham, N. (1999). *CEO and supervisor drivers: Review of the literature and current practice*. Canberra: Australian Government Publishing Service.

132. Smallman, C., & John, G. (2001). 'British directors' perspectives on the impact of health and safety corporate performance'. *Safety Science, 38* (3), 227–239.

133. Shannon, H.S., Robson, L.S., & Guastello, S.J. (1999). 'Methodological criteria for evaluating occupational safety intervention research'. *Safety Science, 31* (2), 161–179.

134. Department of Labour. (2006a). *Annual Report*. Wellington.

135. Gunningham and Associates. (2008). *Review of key characteristics that determine the efficacy of OHS instruments. Technical report prepared for the National Occupational Health and Safety Advisory Committee* (NOHSAC Technical Report 9). Wellington: NOHSAC.

136. Department of Labour. (2008c). *Hazard handler tool*. Retrieved 25 September 2008 from http://www.dol.govt.nz/onlinetools/hazard.asp.

137. Gander, P., Signal, L., & Garden, A. (2008). *Baseline survey of companies participating in the LTNZ Fatigue Management Systems Trial*. Wellington: Land Transport New Zealand and FMS Project Steering Group.

138. Morgaine, K., Langley, J.D., & McGee, R.O. (2006). 'The FarmSafe programme in New Zealand: Process evaluation of year one (2003)'. *Safety Science, 44* (4), 359–371.

139. Pashigian, P. (1984). 'The effect of environmental regulation on optimal plant size and factor shares'. *Journal of Law and Economics, 27* (1), 1–28.

140. Evans, D.S. (1986). 'The differential effect of regulation across plant size: Comment on Pashigian'. *Journal of Law and Economics, 29* (2), 186–209.

141. Kawakami, T. (2006). 'Networking grassroots efforts to improve safety and health in informal economy workplaces in Asia'. *Industrial Health, 44*, 42–47.

142. Suman R. (2007). Safety culture and accident analysis – a socio-management approach based on organizational safety social capital'. *Journal of Hazardous Materials, 142*, 730–740.

143. Samant, Y., Parker, D., Brosseau, L., Pan, W., Xi, M., & Haugan, D. (2006). 'Profile of machine safety in small metal fabrication businesses'. *American Journal of Industrial Medicine 49*, 352–359.

144. Quinlan, M., Mayhew, C., & Bohle, P. (2001). 'The global expansion of precarious employment, work disorganisation and occupational health: A review of recent research'. *International Journal of Health Services, 31* (2), 335–414.

145. Walters, D., Nichols, T., Connor, J., Tasiran, A., & Surhan, C. (2005). *The role and effectiveness of safety representatives in influencing workplace health and safety* (Contract Research Report No. 363). London: HSE.

146. Hasle, P., Kines, P., & Andersen, L.P. (2008). Small enterprise owners' accident causation attribution and prevention. *Safety Science*, in press, corrected proof.

147. Mayhew, C. (2002). 'OHS challenges in Australian small businesses: Old problems and emerging risks'. *Safety Science Monitor, 6* (1), 26–37.

148. Champoux, D., & Brun, J.-P. (2003). 'Occupational health and safety management in small size enterprises: An overview of the situation and avenues for intervention and research'. *Safety Science, 41*, 301–318.

149. Schmögnerová, B. (2002). Opening statement by Mrs Brigita Schmögnerová, Executive Secretary of the UN Economic Commission for Europe at the 13th International Conference on Small and Medium Enterprises, Gibraltar.

150. NORA. (1996). *National occupational health research agenda*. Cincinnati: National Institute for Occupational Safety and Health.

151. NOHSC. (2002). *National OHS Strategy, National Research Action Plan*, updated March 2005.

152. ILO. (1998). *Recommendation No. 189. Job creation in small to medium-sized enterprises*. Geneva: Author.

153. HSC. (2004). *A strategy for workplace health and safety in Great Britain to 2010 and beyond*. Retrieved 2 March 2008 from http://www.hse.gov.uk/consult/condocs/strategycd.pdf.

154. Lentz, T.J., Sieber, W.K., Jones, J.H., Piacitelli, G.M., & Catlett, L.R. (2001). 'Occupational health and safety surveillance: Surveillance of safety and health programs and needs in small US businesses'. *Applied Occupational and Environmental Hygiene, 16* (11), 1016–1021.

155. Oldershaw P. (2002). *Control Banding Workshop*. A joint workshop held by BIOH and IOHA supported by HSE, WHO, ILO, London, UK.

156. Barbeau, E.M., Wallace, L., Lederman, R., Lightman, N., Stoddard, A., & Sorensen, G. (2004). 'Recruiting small manufacturing worksites that employ multiethnic, low-wage workforces into a cancer prevention research trial'. *Preventing Chronic Disease: Public Health Research, Practice and Policy, 1* (3), 1–9.

157. Dyson, R. Hon (Minister for ACC). (2006). *Progress in implementing the New Zealand Injury Prevention Strategy for the period 1 July 2005 to 30 June 2006: Report of the Minister for ACC to the House of Representatives.* Wellington: Accident Compensation Corporation.

158. Cairncross, G., & Buultjens, J. (2006). 'Enterprise bargaining under the Workplace Relations Act 1996 in construction and hospitality small businesses: a comparative study'. *Journal of Industrial Relations*, *48* (4), 475–489

159. Johnstone, R., & Quinlan, M. (2006). 'The OHS regulatory challenges posed by agency workers: Evidence from Australia'. *Employee Relations, 28* (3), 273–289

160. James, P., Johnstone, R., Quinlan, M., & Walters, D. (2007). 'Regulating supply chains to improve health and safety'. *Industrial Law Journal, 32* (2), 163–187.

161. Antonsson, A.-B., Birgersdotter, L., & Bornberger-Dankvardt, S. (2002). *Small enterprises in Sweden: Health and safety and the significance of intermediaries in preventive health and safety* (1st ed.). Stockholm: National Institute for Working Life.

162. Hasle, P., Bach, E., Sorensen, O.H., & Roepstorff, C. (2005). *Arbejdsmiljo i sma virksomhederen analyse af forskellen mellem og store virksomheder.* Copenhagen, Denmark: Arbejdsmiljoinstituttet.

163. Brosseau, L.M., Parker, D.L., Lazovich, D., Dugan, S., Milton, T., & Pan, W. (2001). 'Inhalable dust exposure, tasks, and use of ventilation in small woodworking shops: A pilot study'. *American Industrial Hygiene Association Journal, 62* (3), 322–329.

164. Brosseau, L.M., Parker, D.L., Lazovich, D., Milton, T., & Dugan, S. (2002). 'Designing intervention effectiveness studies for occupational health and safety:

The Minnesota wood dust study'. *American Journal of Industrial Medicine, 41*, 54–61.

165. Seneviratne, M., & Phoon, W.O. (2006). 'Exposure assessment in SMEs: A low-cost approach to bring OHS services to small-scale enterprises'. *Industrial Health, 44*, 27–30.

166. Malkin, R., Lentz, T.J., Topmiller, J., Hudock, S.D., & Niemeier, R.W. (2006). 'The characterization of airborne occupational safety and health hazards in selected small businesses: Manufacturing wood pallets'. *Industrial Health, 44*, 58–63.

167. Takeuchi, Y. (2006). 'Control of hazardous substances at small workplaces'. *Industrial Health, 44*, 48–52.

168. Brooke I. (1998). 'A UK scheme to help small firms control health risks from chemicals: Toxicological considerations'. *Annals of Occupational Hygiene, 42*, 377–90.

169. Maidment, S.C. (1998). 'Occupational hygiene considerations in the development of a structured approach to select chemical control strategies'. *Annals of Occupational Hygiene, 42*, 391–400.

170. Dunham, M.L., Bullock, W.H., & Oestenstad, R.K. (2001). ‚A practical approach to exposure assessment programs in the private sector: A partial validation study of a qualitative chemical exposure assessment model'. *Applied Occupational and Environmental Hygiene, 16* (2), 257–262.

171. Balsat, A., DeGreave, J., & Mairiaux, P. (2003). 'A structural strategy for assessing chemical risks, suitable for small and medium-sized enterprises'. *Annals of Occupational Hygiene, 46*, 119–125.

172. LaMontagne, A.D., Youngstrom, R.A., Lewiton, M., Stoddard, A.M., Perry, M.J., Christiani, D.C., & Sorensen, G. (2003). 'An exposure prevention rating method for intervention needs assessment and effectiveness evaluation'. *Applied Occupational and Environmental Hygiene, 18*, 523–534.

173. LaMontagne, A., Barbeau, E., Youngstrom, R., Lewiton, M., Stoddard, A., McLellan, D., Wallace, L., & Sorensen, G. (2004). 'Assessing and intervening on OSH programmes: Effectiveness evaluation of the Wellworks-2 intervention in 15 manufacturing worksites'. *Occupational Environmental Medicine, 61*, 651–660.

174. Lentz, T.J., & Wenzl, T.B. (2006). ‚Occupational health and safety surveillance: Surveillance of safety and health programs and needs in small US businesses'. *Journal of Occupational and Environmental Medicine, 3*, D8–D14.

175. Mendeloff, J., Nelson, C., Ko, K., & Haviland, A. (2006). *Small business and workplace fatality risk: An exploratory analysis*. Santa Monica: Rand Corporation.

176. Holizki, T., Nelson, L., & McDonald, R. (2006). 'Injury rate as an indicator of business success'. *Industrial Health, 44*, 166–168.

177. Wald, P.H., & Stave, G.M. (2002). *Physical and biological hazards of the workplace* (2nd Ed.). New York: Wiley-Interscience.

178. Eakin, J.M., & MacEachen, E. (1998). 'Health and social relations of work: A study of the health-related experiences of employees in small workplaces'. *Sociology of Health and Illness, 20* (6), 896–914.

179. Limborg, H.J. (2003). *One big family: Making the small business an attractive workplace*. Bilbao: The European Agency for Safety and Health at Work.

180. Kubo, N., Usami, T., Haruyama, Y., Muuto, T., Kimura, K., Yukawa, S., Kimura, T., & Yamane, N. (2006). 'Characteristics of lifestyle and health status of workers in small-scale enterprises in Japan'. *Industrial Health, 44,* 161–165.

181. Gardner, D.H. (1999). 'Barriers to the implementation of management systems: Lessons from the past'. *Quality Assurance: Good Practice, Regulation and Law, 8* (1), 3–10.

182. Lamm, F. (2000b). *Occupational health and safety in Queensland and New Zealand small businesses: Influential factors that lead to occupational health and safety compliance and practice.* Doctor of Philosophy, University of New South Wales, Sydney, Australia.

183. Larsson, T.J. (2003). 'Is small business a safety problem?'. *Safety Science Monitor, 7* (1), 1–23.

184. Cameron, A., & Massey, C. (1999). *Small and medium-sized enterprises: A New Zealand perspective.* Auckland: Addison Wesley Longman.

185. Institute for Employment Studies. (2005). *Annual survey of small businesses. UK,* Brighton.

186. Kitching, J., & Blackburn, R. (n.d.). *The nature of training and motivation to train in small firms.* Retrieved 30 May 2007 from http://www.sopo.org/PDFs/RR330.pdf.

187. Vickers, I., James, P., Smallbone, D., & Baldock, R. (2005). 'Understanding small firm responses to regulation: The case of workplace health and safety'. *Policy Studies, 26* (2), 149–169.

188. Pratt, B. (2006). *Barriers and enablers to control of hazardous chemicals in small and medium enterprises (SMEs)*. Retrieved 29 May 2007 from http://www.ascc.gov.au/NR/rdonlyres/DFD837D6-0D02-4018-960F-5A9ED5D65F45/0/ReportBarriersEnablers_July06.pdf.

189. Haugh, H., & McKee, L. (2004). ‘The cultural paradigm of the smaller firm’. *Journal of Small Business Management, 42* (4), 377–394.

190. Mayhew, C. (2000). ‘OHS in Australian "micro" small businesses: Evidence from 9 research studies’. *Journal of Occupational Health and Safety, Australia and New Zealand, 16* (4), 297–305.

191. Mayhew, C., & Young, C. (1999). ‘The impact of an intensive mailed OHS information campaign on small business cabinetmakers. *Journal of Occupational Health and Safety, Australia and New Zealand, 15* (1), 47–52.

192. Mayhew, C., Quinlan, M., & Bennett, L. (1996). *The effects of sub–contracting/outsourcing upon OH&S*. Sydney: Industrial Relations Research Centre Monograph, University of New South Wales.

193. Caple, D. (1996). *Identification of the most effective methods for disseminating known solutions across industries*. Victoria: WorkSafe.

194. Wyatt, A. (1993). *Dissemination, application, implementation and evaluation of Worksafe Australia funded OHS research*. Report to Worksafe Australia.

195. Grammeno, G. (1991). *The relationship between occupational health and safety and business size: A preliminary investigation*. Unpublished Master of Public Health Treatise, University of Sydney, Sydney, Australia.

196. Lamm, F. (1997). ‘Small businesses and OSH advisors’. *British Journal of Safety Science, 25* (1), 153–161.

197. MacMahon, J. (1996). ‘Employee relations in small firms in Ireland: An exploratory study of small manufacturing firms’. *Employee Relations, 18* (5), 66–80.

198. Headd, B. (2000). ‘The characteristics of small-business employees’. *Monthly Labor Review, 123* (4), 13–18.

199. Fonteyn, P.N., Olsberg, D., & Cross, J.A. (1997). ‘Small business owners’ knowledge of their occupational health and safety (OHS) legislative responsibilities’. *International Journal of Occupational Safety and Ergonomics, 3*, 41–57.

200. Russell, R.M., Maidment, S.C., Brooke, I., Topping, M.D. (1998). ‘An introduction to a UK scheme to help small firms control health risks from chemicals’. *Annals of Occupational Hygiene, 42*, 367–76.

201. Topping, M.D., Williams, C.R., & Devine, J.M. (1998). ‘Industry’s perception and use of occupational exposure limits’. *Annals of Occupational Hygiene, 42* (6), 357–366.

202. Swuste, P., Hale, A., & Pantry, S. (2003). 'Solbase: A databank of solutions for occupational hazards and risks'. *Annals of Occupational Hygiene, 47* (7), 541–547.

203. Jones, M.L., Reynolds, S.J., Burmeister, L.F., Lewis, M.Q., Whitten, P.S., Scarth, R.D., & Zwerling, C. (1999). 'Application of a subjective health and safety rating system to Iowa farm operations'. *Applied Occupational Environmental Hygiene, 14* (2), 852–867.

204. Brown, T.P., Ruston, L., Williams, H.C., & English, J.S.C. (2006). 'Intervention development in occupational research: An example from the printing industry'. *Occupational and Environmental Medicine, 63*, 261–266.

205. Mukherjee, S., Overman, L., Leviton, L., & Hilyer, B. (2000). 'Evaluation of worker safety and health training'. *American Journal of Industrial Medicine, 38*, 155–163.

206. Perry, M.J., & Layde, P.M. (2003). 'Farm pesticides: Outcomes of a randomized controlled intervention to reduce risks'. *American Journal of Preventive Medicine, 24* (4), 310–315.

207. Sinclair, R.C., Smith, R., Colligan, M., Prince, M., Nguyen, T., & Stayner, L. (2003). 'Evaluation of a safety training programme in three food service companies'. *Journal of Safety Research, 34*, 547–558.

208. Roelofs, C., Moure-Eraso, R., & Ellenbecker, M. (2000). 'Pollution prevention and the work environment: The Massachusetts experience'. *Applied Occupational Environmental Hygiene, 15* (11), 843–850.

209. Jones, R.M., & Nicas, M. (2006). 'Evaluation of COSHH Essentials for vapour degreasing and bag filling operations'. *Annals of Occupational Hygiene, 50* (2), 137–147.

210. LaMontagne, A.D. (2003a). *Improving occupational health and safety policy through intervention research*. Working Paper 18. Canberra: ANU, National Research Centre for OHS Regulation.

211. LaMontagne, A.D., Stoddard, A.M., Youngstrom, R.A., Lewiton, M., & Sorensen, G. (2005). 'Improving the prevention and control of hazardous substances exposures: A randomised controlled trial in manufacturing worksites'. *American Journal of Industrial Medicine, 48*, 282–292.

212. Sorensen, G., Thompson, B., Glanz, K., Feng, Z., Kinne, S., DiClemente, C., Emmons, K., Heimendinger, J., Probart, C., & Lichtenstein, E. (1996). ‚Work site-based cancer prevention: Primary results from the Working Well trial'. *American Journal of Public Health, 86* (7), 938–947.

213. Sorensen, G., Stoddard, A., Hunt, M.K., Hebert, J.R., Ockene, J.K., Avrunin, J.S., Himmelstein, J., & Hammond, S.K. (1998). 'The effects of a health

promotion-health protection intervention on behaviour change: The WellWorks study'. *American Journal of Public Health, 88* (11), 1685–1690.

214. Sorensen, G., Stoddard, A.M., LaMontagne, A.D., Emmons, K., Hunt, M.K., Youngstrom, R., McLellan, D., & Christiani, D.C. (2002). 'A comprehensive worksite cancer prevention intervention: Behaviour change results from a randomized controlled trial'. *Cancer Causes and Control, 13* (6), 493–502.

215. Sorensen, G., Barbeau, E., Stoddard, A.M., Hunt, M.K., Kapingst, K., & Wallace, L. (2005). 'Promoting behaviour change among working-class multiethnic workers: Results of the healthy directions-small business study'. *American Journal of Public Health, 95* (8), 1389–1395.

216. Brosseau, L.M., & Li, S.Y. (2005). 'Small business owners' health and safety intentions: A cross-sectional survey'. *Environmental Health, 4*, 23.

217. Rivilis, I., Van Eerd, D., Cullen, K., Donald, C.C., Irvine, E., Tyson, J., & Mahood, Q. (2008). 'Effectiveness of participatory ergonomic interventions on health outcomes: a systematic review'. *Applied Ergonomics, 39*, 342–358.

218. Vassie, L., & Cox, S. (1998). 'Small and medium size enterprises (SME) interest in voluntary certification schemes for health and safety management: Preliminary results'. *Safety Science, 29* (1), 67–73.

219. McKinney, P. (2002). *Expanding HSE's ability to communicate with small firms: A targeted approach* (No. 420/2002). Sudbury, United Kingdom: HSE.

220. Lansdown, T., Deighan, C., & Brotherton, C. (2007). *Health and safety in the small to medium-sized enterprise: Psychosocial opportunities for intervention* (Research Report 578). Sudbury, UK: HSE.

221. European Agency for Safety and Health at Work (EASHW). (2005). *Promoting health and safety in European small and medium sized enterprises (SMEs)*. Retrieved 5 March 2008 from http://osha.europa.eu/en/publications/reports/ag05001/view.

222. Borley, J. (1997). 'A health and safety system which works for small firms'. *Journal of the Royal Society for Health, 117* (4), 211–215.

223. Wright, M., Marsden, S., Collier, D., & Hopkins, C. (2003). *Identification of industry sectors in which employers perceive their building operates* (Contract Research Report). London: HSE.

224. Wright, M., Norton-Doyle, J., Marsden, S., Bendig, M., & Shaw, J. (2005). *Development of a SME version of the corporate health and safety performance index* (Summary report No. CRR 393). London: HSE.

225. Tait, R., & Walker, D. (2000b). Marketing health and safety management expertise to small enterprises. *Safety Science, 36* (2), 95–110.

226. HSE. (1974). *Health and Safety at Work Act* (UK Working practice regulation). Sudbury, United Kingdom: HSE.

227. HSE. (2000). *Manual handling: solutions you can handle* (Report No. HSE (G) 115). Sudbury, United Kingdom: HSE.

228. Vassie, L., Thomas, J.M., & Oliver, A. (2000). 'Health and safety management in UK and Spanish SMEs: A comparative study'. *Journal of Safety Research, 31* (1), 35–43.

229. Fairman, R., & Yapp, C. (2005). *Making an impact on SME compliance behaviour: An evaluation on the effect of interventions upon compliance to health and safety legislation in small and medium-sized enterprises* (Contract Research Report No. 336). Sudbury, United Kingdom: HSE Books.

230. Walters, D. (2002). *Working safely in small businesses in Europe: Towards a sustainable system for worker participation and representation*. European Trade Union Confederation: Trade Union Technical Bureau.

231. Tischer, M., Bredendiek-Kamper, S., & Poppek, U. (2003). 'Evaluation of the HSE COSHH essentials exposure predictive model on the basis of BAuA field studies and existing substances exposure data'. *Annals of Occupational Hygiene, 47* (7), 557–569.

232. Health and Safety Laboratory 2001

233. Jackson, C.A. (2004). *The evaluation of occupational health advice in primary health care* (Contract Research Report No. 242). London: HSE Books.

234. Kirby, P. (2002). *Roving safety reps teaching workplaces other reps don't: Developing and sustaining systems in prevention in small enterprises in Great Britain*. United Kingdom: Trade Union Congress.

235. Ward, R., & Lancaster, R. (2004). *Evaluation of safe and healthy working in its first year*. Scotland: NHS.

236. HSE. (2006). *Business Involvement Programme – Review and Forward Look: Evaluation of the Small Business Trade Association Forum*. HSC/06/03.

237. HSE. (2007). *Workplace Health Connect.* January 2008 Progress Report.

238. Shaw, N., & Turner, R. (2003). *The work safety advisors pilot* (Contract Research Report No. 144). Sudbury, United Kingdom: HSE.

239. Inland Revenue. (2005). *Annual Report 2005*. Retrieved 12 June 2006 from http://www.ird.govt.nz/aboutir/reports/annual-report/annual-report-2005.

240. Brinkerhoff, R. (2003). *The success case method: Find out quickly what's working and what's not.* USA: Berrett-Koehler Publishers.

241. Ministry of Fisheries. (2007). *The New Zealand Fishing Industry*. Retrieved from http://www.fish.govt.nz/en-nz/Commercial/default.htm.

242. Statistics New Zealand. (2008b). New *Zealand Business Demography Statistics (Structural): At February 2007*. Retrieved from http://www.stats.govt.nz/datasets/business/business-demographic-statistics.htm.

243. Maritime New Zealand. (2002). *Annual Report for the year ended 30 June 2002*. Retrieved 12 April 2008 from http://www.maritimenz.govt.nz/publications/general/2002AnnualReport.pdf.

244. Maritime New Zealand. (2006). *Commercial accidents and incidents: Statistical summary and analysis, 2004–2006*. Retrieved from www.maritimenz.govt.nz/publications/accidents/Accident_stats_04_06.pdf.

245. Maritime New Zealand. (2008). *Annual Report: 2007–2008*. Wellington.

246. Maritime New Zealand. (2004). *Maritime Safety Authority of New Zealand Annual Report for the year ended 30 June 2004*. Retrieved 2 May 2008 from http://www.msa.govt.nz/publications/general/2004AnnualReport.pdf.

247. Office of the Controller and Auditor-General. (2005). *Maritime Safety Authority: Progress in implanting recommendations of the review of safe ship management systems*. Retrieved 7 March 2008 from http://www.oag.govt.nz/2005/maritime/docs/maritime.pdf.

248. Transport Accident Investigation Commission. (2007). *Annual Report of the Transport Accident Investigation Commission for the period 1 July 2006 to 30 June 2007*. Retrieved 11 March 2008 from http://www.taic.org.nz/LinkClick.aspx?fileticket=uGikgCKHLyE%3d&tabid=156&mid=575.

249. Transport Accident Investigation Commission. (n.d.). *Report 06-204, fishing vessel, Kotuku, capsize and sinking, Foveaux Strait, 13 May 2006.* Retrieved 14 May 2008 from http://www.taic.org.nz/MarineReports/tabid/87/ctl/Detail/mid/484/InvNumber/2006-204/Page/0/Default.aspx?SkinSrc=[G]skins%2ftaicMarine%2fskin_marine.

250. Department of Labour. (2007b). *Working better: Annual Report for the year ended 30 June 2007*. Retrieved 5 March 2008 from http://www.dol.govt.nz/PDFs/annualreport0607.pdf.

251. Romeri, E., Baker, A., & Griffiths, C. (2007). *Alcohol-related deaths by occupation, England and Wales, 2001–05*. Retrieved 12 May 2008 from http://www.statistics.gov.uk/articles/hsq/Alcohol_related_deaths_by_occupation.pdf.

252. Transport Accident Investigation Commission. (n.d.). *Report 06-203, fishing vessel Venture, grounding, Tipi Bay, Tory Channel, 19 April 2006*. Retrieved 12 April 2008 from

http://www.taic.org.nz/MarineReports/tabid/87/ctl/Detail/mid/484/InvNumber/2006-203/Page/1/Default.aspx?SkinSrc=[G]skins%2ftaicMarine%2fskin_marine.

253. Goldenhar, L.M., LaMontagne, A.D., Katz, T., Heaney, C., & Landsbergis, P. (2001). 'The intervention research process in occupational safety and health: An overview from the NORA Intervention Effectiveness Research Team'. *Journal of Occupational and Environmental Medicine, 43* (7), 616–622.

254. LaMontagne, A.D. (2000). 'Evaluation of OSHA health standards'. In B.S. Levy & D.H. Wegman (Eds.), *Occupational health: Recognizing and preventing work-related disease* (pp.134–135). Philadelphia: Lippincott Williams & Wilkins.

255. Winder, C. (1999). 'The long road to hazardous substances regulation'. *Journal of Occupational Health and Safety, Australia New Zealand, 15* (2), 99–102.

256. Zwerling, C., Daltroy, L., Fine, L., Johnston, J.J., Melius, J., & Silverstein, B.A. (1997). 'Design and conduct of occupational injury intervention studies: A review of evaluation strategies'. *American Journal of Industrial Medicine, 32*, 164–179.

257. LaMontagne, A.D., & Needleman, C. (1996). 'Overcoming practical challenges in intervention research in occupational health and safety'. *American Journal of Industrial Medicine, 29* (4), 367–72.

258. LaMontagne, A.D. (2003b). *Evaluating government OHS interventions, A one-day NOHSC workshop.* Canberra: National Occupational Health and Safety Commission.

259. LaMontagne, A.D., & Shaw, A. (2004). *Evaluating OHS interventions: A Worksafe Victoria Intervention Evaluation Framework*. Melbourne: Victorian WorkCover Authority.

260. Tanczos, P. (2003). *Information paper* (No. ACTS/15/2003). London: HSE.

261. Martin, C. (2004). *Evaluation of the health promoting health service framework.* Scotland: NHS.

262. Tait, R., & Walker, D. (2000a). *An evaluation of the safety information centre approach in providing health and safety advice to small firms* (No. CRR: 308/2000). London: HSE.

NOHSAC

National Occupational Health and Safety Advisory Committee

Komiti Tohutohu Mahi A-Motu Hauora me te Haumaru