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IS SMALL BUSINESS A SAFETY PROBLEM?

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ABSTRACT

Common beliefs in relation to safety in small business are of two types; a) small businesses are more unsafe, apply unsafe practices, and thus have a higher incidence of occupational injury and a higher average severity of injury, and b) small business have poor knowledge of, and exhibit low compliance with, laws, rules and regulations, and are increasingly difficult to control.

A survey of 100 small business operators in the suburbs of Melbourne, Australia was undertaken. Ten different industries - farming, nurseries, fishing, printing, metal manufacturing, concreting, electrical work, cleaning services, cafes and restaurants, women's hairdressing - were included in the regional sample. The face-to-face conducted interview included questions on educational background, business experience, number and type of staff, own ill health, perceptions of hazards, experience of work-related injury or ill-health in the company, comparison of risks at work with risks outside work, claims experience, knowledge of experience rating system, attitudes to investment in risk-reduction, to safety and productivity, attitudes to the nature of safety problems at work, willingness to pay, decision-making style, relation between debts and assets in the business, recent and future investment in safety, and contacts with government bodies, insurers and OH&S professionals.

Small business operators seemed to know quite well which type of risks they, and their family and staff, are exposed to. Educational background, the long average trade/ business experience, the risk exposure from the practical and hands-on type of work that virtually all owners/managers in this study do, their experience of work-related ill-health and traumatic injury, together with the perceived risks reported from the different industries, support this. When claims cost was checked against size of remuneration it was indicated that there could be a systematic under-reporting of minor-medium claims from small businesses, particularly from businesses smaller than AUD120,000 in remuneration, ie. the typical company-size of this study.

The study generates no real proof that size of an industrial establishment in itself is an important factor for OH&S. Some industrial activities and processes define size - small or large - and the hazards generated in the process, and the actual risk exposure, will explain the incidence and type of occupational trauma and disease. However, some occupational groups, particularly in high-risk areas, tend to under-estimate or be prepared to bear the high inherent health risks of their trade. Concreting is an example in this study. Farmers have a tradition of high risk acceptance, which is combined with a low resource level.

It is crucial for successful approaches to improved work environment and safety in small business to accept that most small business operators have reasonable capacity, knowledge and experience to handle the risks in their own operations. To be relevant and useful to small business, the emphasis of the OH&S information should shift from the legalistic formal administration of safety to the practical solution of typical and high-priority technical risk problems in specific industries. In view of the social characteristics of small

business, and their pervasive inclusion of work in family and general life, communication about OH&S in small business should shift its focus from the traditional industrial relations and workers' compensation arguments to a genuine 24-hour perspective of public and family health.

1. BACKGROUND

Increasing proportions of the work-force in many industrial countries have become marginal, or more loosely attached, to the labour market. Full-time employment in large public and private corporations has decreased. Partial or temporary unemployment, partial or temporary self-employment, and small family-based enterprises have become more common. The size of the informal, untaxed and uncontrolled economic sector is considerable and probably increasing. These trends are clearly discernible in many modern economies, including Australia's.

With the increasing fragmenting of economic activity comes naturally the pulverisation of risk. Active risk management in the large organisation has often implied the shedding of especially hazardous tasks onto external and mostly small sub-contractors. The issues of work-related traumatic injury, workers' compensation and safety at work in relation to small business have become increasingly relevant and also more widely reported in Australia (VWA Advisory Committee, 1994; Stanley et al, 1996; Mayhew, 1997; Mayhew et al, 1997).

In a report to the Victorian Workcover Advisory Committee on "Incentives for Accident Prevention Among Small and Medium Sized Employers" (VWA Advisory Committee, 1994), the authors concluded that SME:s had lower claims incidence than large employers and higher average claims costs than large employers. The authors of this report attribute the higher average claims cost among small businesses to poorer "return-to-work" options and a lack of information about prevention and risk management, which would in turn generate more serious and costly injuries. In commenting upon the positive correlation between size and claims incidence, apart from accepting the logic of increased exposure of more staff to hazards resulting in more injuries, the authors raise the issue of claims suppression (opus cited p 17-18).

Potentially, several aspects crucial to decision making in small business might help explain the high average claims costs. We can be almost certain that there are structurally and size-biased exposure to hazards among some types of industry; some high-risk activities are always done by independent (small) operators. There might be under-reporting of minor-medium severity injuries due to the inability of the owner/manager to take time off in a small business; e.g. studies indicate that Farmers only report serious injuries (Larsson, 1990). There might be potential claims suppression due to perceptions on the experience rating aspects of the premium system.

Recently published studies provide evidence on the risk exposure, knowledge of and attitudes to occupational hazards among repair garages, cafes and restaurants, newsagents, building contractors, cabinetmakers and shopfitters, and demolishers (Mayhew, 1997; Mayhew et al, 1997; Mayhew & Quinlan, 2001). The aim of these studies has been to assess what barriers exist to implementation of solutions to OH&S problems, and which are the optimal ways to communicate OH&S to small business operators. The authors' main conclusions are that

- OH&S messages have failed to penetrate the very small businesses because the methods used are inappropriate, ie. based on those employed with large business,
- the very small business owner/manager is generally unaware of the OH&S legislative framework; they know, use or understand very little about OH&S,
- local, face-to-face, industry-specific OH&S advice seems to be a viable way to improve OH&S performance among small business.

The management literature on small business, however, points to specific traits of the small business operator's decision-making which are relevant to OH&S and the management of risk. It seems that:

- Ethical decisions among small business owners have been shown to be more dependent upon the private sphere, family and individual beliefs than among professional managers (Quinn, 1997).

- Entrepreneurs from smaller firms tend to be less “comprehensive” in their decision behavior, ie. less likely to follow a formal rational decision process, than professional managers from larger firms (Smith et al, 1988).
- Family business owners tend to refrain from drawing money from the business, they are less career-oriented, more centralised in their decision-making, and less likely to seek external advice than professional managers (Dyer, 1986; Leach, 1991; Cromie et al, 1995).
- In family firms the assignment of tasks, the grouping of work activities, the flow of tasks and information, and the control of work processes are informally organised (Whisler, 1988).
- Owners of small firms tend to interact with and influence their staff directly, whereas professional managers, who are required to justify their actions to boards, shareholders, and external organisations, initiate numerous formal reporting procedures to cope with their responsibilities (Goffee & Scase, 1985).

There is no simple relation between high-risk occupational activities and the size of the enterprise. Much of what is written and discussed about OH&S in small business implies that the lack of safety officers, formal structures for company administration, the lack of formal procedures for HR and OH&S management, and the lack of formalised industrial relations constitute barriers to improved work environment and workers’ health. However, there is not much empirical or scientific proof for this and it might be more a reflection of frustrated communications efforts than a proper analysis of the true state of OH&S in small business.

Since the 1970s change of paradigm in government control of industrial safety, the “duty of care” compliance control approach has been specifically tailored for the OH&S administrative resources of the large industrial corporations (Gun, 1992; Larsson, 1997). Out-sourcing, sub-contracting and self-insurance among large corporations in Australia and elsewhere has increased, and as growing proportions of the labour force are self-employed, in small business or have been forced into informal or temporary employment, the compliance control arm of government has been left with inadequate tools to do the job effectively.

Very little integrated analysis of the economic, social and human conditions of the self-employed, or of the people in small family businesses, has been published. A large number of questions about working conditions, attitudes to risks and ill-health, and values and attitudes in relation to work and life in general among these groups still need to be pursued.

The options for occupational injury prevention in small business need to be empirically assessed. Management knowledge, attitudes and decisions in relation to, and the micro-economic requisites for, occupational injury prevention should be better understood. The aim of this survey among a number of different types of small business operators in Victoria has been to draw conclusions about the most appropriate and efficient ways of influencing decisions on occupational health and safety matters among owners/ managers of Victorian small businesses.

2. METHOD AND MATERIAL

A survey was collected among 100 small business operators in the suburbs of Melbourne in 1997. Ten different industries were included in the regional sample, which was made up from all establishments registered with the Victorian Workcover Authority with a total remuneration of less than AUD400,000.- in the greater Dandenong and Mornington Peninsula areas. The industries are listed in Table 1.

Industry	Code	VWA Premium Rate (95/96)
Farming		
• combined sheep/cereal grains	A 0182 A	4.78
• combined meat cattle/grains	A 0183 C	1.26
• combined sheep/meat cattle	A 0184 F	3.95
• meat cattle	A 0186 K	3.95
• milk cattle	A 0187 L	2.70
Nurseries	A 0195 L	2.70
Ocean and coastal Fishing	A 0433 J	3.95
Commercial printing	C 2644 V	1.52
Metal manufacturing		
• metal containers	C 3151 R	4.78
• metal coating and finishing	C 3164 A	3.26
• boiler and plate work	C 3166 F	5.78
• fabricated metal products	C 3168 K	2.70
• motor vehicle bodies, caravans	C 3232 T	4.78
• materials handling equipment	C 3363 T	2.70
Concreting	E 4231 J	7.00
Electrical work	E 4253 W	1.84
Cleaning services	I 6364 X	3.26
Cafes and restaurants	L 9231 X	1.84
Women's hairdressing	L 9352 V	1.26

Table 1 Selected industries, industry codes and 1995/96 VWA premium rates (% of total remuneration)

The delineated geographical area in the 1995/96 files for the VWA contained 3,168 establishments fulfilling the requirements. A sample of 100 establishments were drawn for participation in such a way that visits could be efficiently undertaken, suburb by suburb. Establishments were approached by a mail-out to around 500 establishments, and interviews were booked with owner/managers via a follow-up telephone contact. Interviews were conducted face-to-face at the establishment and participants were paid a AUD35 gratuity for an estimated 40 minutes of interview time by the project.

However, the percentage of contacted companies refusing to participate was high. The relevant proportions of small business operators contacted and willing to participate in the study are given in Table 2.

Industry	Letters sent	No contact	Contact made	Declined %
Fishing	38	12	26	62
Farming	60	23	37	73
Nurseries	32	5	27	63
Cleaning	31	7	24	58
Restaurants	58	11	47	79
Hairdressing	34	1	33	70
Printing	70	21	49	80
Metal work	41	7	34	71
Concreting	53	18	35	72
Electrical	50	16	34	71
All	467	121	346	71

Table 2 Administration of the survey and response rates

Printers and Restaurateurs were the hardest to convince; Fishermen, Cleaners and Nurseries the easiest. The varying response rates could mirror structural conditions or simply attitudes to the importance of surveys in the area of OH&S. A similar variety of response rates is reported by Mayhew et al (1997) in their study of small business building contractors. A low interest in participating in surveys and market research is the norm in most countries.

In order to control for a positive bias in the sample, i.e. that participating companies would represent a better OH&S performance than non-participating companies, the claims rate of the participating companies was compared with all other, not participating small companies. It was found that, in fact, there was a higher proportion of claims among the interviewed small companies than among those not participating. This was true for the year 1995/96 as well as for the compounded period of 1993/94, 94/95 and 95/96. We conclude that, at least in terms of claims performance, the interviewed companies did not represent a positive bias.

However, large proportions of subjects declining participation make statistical analyses open to questions. It is important to point out that conclusions drawn from the results of this study must be drawn with care and in relation to industry operators willing to participate in a study of this kind.

A survey with questions covering educational background, business experience, number and type of staff, own ill health, perceptions of hazards, experience of work-related injury or ill-health in the company, comparison of risks at work with risks outside work, claims experience, knowledge of experience rating system, attitudes to investment in risk-reduction, to safety and productivity, attitudes to the nature of safety problems at work, willingness to pay, decision-making style, relation between debts and assets in the business, recent and future investment in safety, and contacts with government bodies, insurers and OH&S professionals.

Information on remuneration and claims experience pertaining to the fiscal years 1993/94 and 1995/96 for the different industry groups in the sample was collated and analysed with the help of VWA staff.

3. RESULTS

3.1 Background and education

Of the 100 small business operators 85 were men, 15 were women (one printer, 5 hairdressers, 4 restaurateurs, 2 cleaners and 3 farmers). Five of the interviews were with managers, who were managing on behalf of absent owners (one fishing boat, three farming establishments and one printing company). It was decided to include these in the analysis, since they all were in a position to make, or have a significant influence over, owners' decisions.

The average age among the interviewees was 44.6, varying somewhat, but not significantly, between the industries in the sample. The average time of experience in running their own business was 13.8 years, not significantly different between industries.

The educational background level varied considerably in the sample. Several owners of Nurseries had tertiary degrees and a few Farmers in the sample were doing other things besides farming (eg. Architect, CEO of industrial establishment). The distribution is shown in Table 3.

	Educational level			
	Basic	Apprentice/Trade	Cert/Dipl/Year 12	Tertiary degree
Fishing	4	3	2	1
Farming	3	-	4	3
Nurseries	-	-	7	3
Cleaning	3	1	4	2
Restaurants	3	3	2	2
Hairdressing	-	7	3	-
Printing	2	6	-	2
Metal work	2	5	2	1
Concreting	5	2	1	2
Electrical	-	9	-	1
	22	36	25	17

Table 3 Educational background level among the 100 small business operators interviewed

3.2 Staffing and size

The average total number of staff reported was 7.8, though 61% had four or less full time employees (themselves included). Forty-six reported that they had permanent part-time employees (67% of which had only one or two), forty-five had casual part-time staff (64% of which had only one or two), and forty-three had regular contractors (63% of which had one or two).

Thirty small business operators reported that they had apprentices; all hairdressers, six nurseries, five electricians, three metal industries and three restaurants.

Employment structure tends to vary depending on the requirements of the business, thus Table 4 describes the averages for different categories of staff in the sampled industries:

	Average numbers of different categories staff				
	Perm/Full time	Perm/Part time	Casual/Part time	Reg. contractors	Total staff
Fish	3.0	2.5	2.4	3.5	4.7
Farm	1.7	1.3	1.2	3.0	3.2
Nurs	6.7	2.8	10.4	1.6	10.4
Clean	3.3	10.2	6.3	3.6	10.8
Rest	3.5	6.8	10.0	1.7	13.9
Hair	7.7	1.9	2.0	1.0	9.8
Print	6.1	2.0	1.6	3.3	8.0
Metal	5.9	1.5	2.8	1.6	7.6
Concr	5.4	1.2	1.7	4.0	6.4
Electr	3.0	1.3	2.0	1.8	3.5
All	4.7	3.4	4.8	2.6	7.8

Table 4 Average numbers of different categories staff, including averages for the full sample. Note that “Regular contractors” are not included in “total staff”.

Only two companies reported that they had casual full time employees on their books; one Metal industry and one Concreting firm.

Seventy-one percent of those interviewed employed one or several members of their family in the company. Nine out of ten Cleaners, Restaurants and Concreting firms were family businesses; more than half the companies in the study were run by husbands and wives, and 22 employed several members of the close or extended family.

The remuneration distribution over the participating companies was even, but with half of the companies below an annual remuneration of AUD80,000.- Not surprisingly the Farmers had the lowest average, and the highest were among Nurseries and Printing companies.

	Annual remuneration reported to the VWA								Average
	<40'	20-59'	60-79'	80-99'	100-119'	120-159'	160-199'	200-400'	
Fish	2	1	4	1	-	2	-	-	73,551
Farm	4	3	2	1	-	-	-	-	45,543
Nurs	2	-	-	-	1	2	1	4	167,777
Clean	2	2	1	1	1	-	1	2	108,198
Rest	2	1	2	1	2	-	1	1	98,464
Hair	2	3	1	-	-	1	1	2	106,611
Print	-	1	-	1	3	3	-	2	162,213
Metal	-	2	2	1	2	-	2	1	128,481
Concr	-	-	1	2	2	3	2	-	123,178
Electr	2	3	3	1	1	-	-	-	64,905
All	16	16	16	9	12	11	8	12	107,893

Table 5 Distribution of, and average, remuneration among the companies participating in the study

The average weekly hours worked among the managers interviewed were reported to be 56.3, varying between 15 and 95 hours, and with half of the sample stating that they put in 60 hours or more per week. There was no significant variation between industries in this respect.

The staff average weekly hours were 38.1, and there was significant variation between industries due to systematic differences in the proportion of part-time employees. Cleaners and Restaurateurs have greater proportions of part-time staff and thus a lower average of weekly hours/staff.

3.3 Perceived hazards

A number of questions referred to the interviewee’s experience of injuries and ill-health, his/her own and among other staff. Twenty-six reported that they suffered from work-related ill-health; ten had back or related problems, eight suffered from some form of asthma/allergy, four had a hearing loss, three reported stress-related problems and one a hand injury. All industries, bar Printers, reported cases of own ill-health.

Nearly half (42) of the managers had suffered a work-related injury; the incidents seemingly representative of the various industry-specific exposures. Falls, cuts, injured backs in activities involving heavy manual handling (fishing, farming, nursery work, metal work, concreting, electrical work); cuts and burns (restaurants, hairdressers); caught fingers (printing); grit in eye, slip and fall, RSI (cleaning).

The average age among those suffering back problems - and among those who had suffered a work-related injury - did not differ from the average in the sample.

When asked about the most common and typical work-related injury in their company, ninety-eight named one, fifty-eight named two, eleven named three and three persons named four industry-typical injury causes.

The following tables present the typical injury risks in the participating industries, according to the interviewed managers:

Fishing		
■ Spikes and cuts from fish and knives	6	
■ Manual handling strain; moving surface	5	
■ Caught up or jammed in winches or gear	3	
■ Falls, hits, bruises; moving surface	2	
■ Decompression sickness	2	
■ Drowning	1	19
Farming		
■ Heavy manual handling	4	
■ Tractor accidents	4	
■ Kicked, butted or strains from handling cattle	4	
■ Machinery; hand injuries	2	
■ Cuts, bruises	2	
■ Four-wheel bikes accidents	1	
■ Grinding/welding: eye injuries	1	18

Nurseries

■ Back injuries from manual handling, lifting	6	
■ Vehicle accidents, incl. on the road	5	
■ Trips and falls	2	
■ Tractor accidents	1	
■ Chemical burns	1	
■ Shearing knife accident (tree farm)	1	16

Cleaners

■ Back injury, strain from lifting	5	
■ Slip and fall	5	
■ Cuts and bruises	1	
■ RSI; arms	1	
■ Hazards on industrial site; 3 rd parties	1	
■ Electrical shock from faulty cables on machines	1	
■ Chemicals in eye	1	
■ Hearing loss	1	16

Restaurants

■ Cuts	6	
■ Slip and falls	6	
■ Burns	4	16

Hairdressers

■ Dermatitis	6	
■ Cuts	5	
■ Back problems; work posture	3	
■ Chemicals	3	
■ RSI	1	
■ Infections from customers	1	
■ Electrical shock from equipment	1	
■ Asthma, allergy	1	21

Printing		
■ Fingers caught in press or other machine	10	
■ Cuts	3	
■ Slips and trips	2	
■ Manual handling, lifting	1	
■ Solvent in eye	1	17
Metal work		
■ Back injury from manual handling, lifting	5	
■ Cuts	4	
■ Burns	3	
■ Foreign body in eye	1	
■ Welding flash	1	
■ Breathing in toxic fumes	1	
■ Asthma; dust, coating powder	1	
■ Dermatitis	1	17
Concreting		
■ Back injury from manual handling, lifting	7	
■ Cuts	3	
■ Struck by machine	2	
■ Trip and fall	1	
■ Termite spray	1	
■ Hearing loss	1	15
Electrical work		
■ Fall off ladder	5	
■ Electrocutation	5	
■ Manual handling, lifting	3	
■ Cuts, bruises	3	
■ Slip on roof and fall	1	
■ Confined spaces; neck problem	1	18

Table 6 Perceived typical injury risks in the participating industries reported by 100 owner/managers

In order to compare the perceived risks among the participating industries with the actual outcomes in terms of injury claims over an extended period, a selected number of “afflictions” and “accident types” for

the industries in the study were compared with averages over all Victorian industries represented in the VWA claims data material (Table 7).

It seems that the reported typical injury risks conform quite well to the respective industry profiles in relation to afflictions and accident types.

Fishing and Printing report the typical hazards due to special machinery; Nurseries report their predominantly manual exposure; Cleaners report sprains, strains, overexertion and falls; Restaurants cuts, falls and burns; Hairdressers skin disease and burns. Metal work operators report in accordance with their multi-hazard exposure, and similarly do the Electricians. The Concreters report the obvious back injury risks of their profession, but fall below average in most reported afflictions and accident types (apart from deafness).

	Fish	Farm	Nurs	Clean	Rest	Hair	Print	Metal	Concr	Elec	Ave
Deafness	1.3	1.4	2.0	6.1	1.0	0.2	3.5	8.1	14.1	6.5	5.9
Sprains, strains	30.4	36.8	56.1	58.2	46.0	48.1	53.1	42.5	46.2	44.4	52.4
Open wounds	20.5	16.4	9.2	3.9	18.2	6.4	10.1	12.7	9.7	14.5	9.4
Fractures	14.4	18.5	8.0	8.1	8.2	6.0	7.6	7.0	7.3	8.5	6.3
Contusions	11.2	7.9	5.8	5.6	6.1	4.9	9.6	8.5	6.8	5.2	7.2
Burns	1.9	1.8	0.7	1.3	6.0	2.6	0.6	2.9	0.6	2.5	1.4
Skin disease	1.1	1.0	1.7	0.7	1.5	14.0	1.0	0.8	0.8	0.4	0.8
RSI	3.5	2.0	3.2	3.0	2.3	5.9	3.4	1.6	1.6	0.7	2.3
Fall of person	19.2	18.1	14.4	21.4	21.9	12.3	10.9	9.8	14.7	18.9	13.9
Falling objects	1.1	2.0	1.0	0.7	1.8	1.0	1.3	3.4	2.5	2.3	1.9
Step on/struck by	23.7	26.5	11.7	8.7	16.8	8.1	8.6	17.6	15.0	16.3	13.4
Caught	14.1	8.5	4.9	2.6	5.0	1.3	12.8	7.6	4.3	5.0	4.5
Overexertion	25.1	24.5	46.3	43.3	30.1	27.2	43.1	35.2	36.4	32.4	38.8

Table 7 Claims reported (as at 30 June 1997) by selected afflictions and selected types of accidents for the participating industries compared to the average for all industries (%); cumulative figures from 1985/86 onwards. Above-average proportions have been bolded (VWA Statistical Report 1996/97).

Seventy-two could recall a work-related injury among the staff, the median time since the injury being 12 months, and forty reported work-related injuries among the staff in the last 12 months.

Seventeen were aware of work-related ill-health among their present staff. Back problems were the most common (Fishing, Cleaning, Hairdressing, Metal work, Concreting, Electrical work) followed by dermatitis (Hairdressing, Restaurant and Concreting), hearing loss (Metal work) and mesothelioma (Electrical work).

When asked to rate the hazard level for the type of work their employees were engaged in, the hazard level was assessed as medium to low. If we compare the hazard level ratings given by the participants in the study to the claims frequency/\$m remuneration, the following picture emerges:

Industries according to perceived hazard in the study and actual claims incidence		
	Relative rating in the study	Claims/\$m remuneration
Fishing	1	1.0*
Farming	2	1.7
Metal work	3	1.6
Electrical	4	1.4
Restaurants	5	0.8*
Cleaning	6	1.4
Concreting	7	2.0*
Nurseries	8	1.0
Printing	9	0.6
Hairdressing	10	0.3

Table 8 Comparison between perceived hazard level and claims incidence in the 10 sampled industries. (* denotes deviating ratings)

According to the comparison in Table 8, most managers, unknowingly, assess the hazard level in their operations in accordance with the actual claims incidence level of their industry. However, there are interesting exceptions. It would seem that Concreters underestimate the hazards inherent in their operations. Fishermen and Restaurateurs, on the other hand, would seem to overestimate the hazards in their activity, or alternatively, they tend to underreport their injuries to the workers' compensation system.

The managers were also asked to rate work in terms of hazards in comparison to exposures outside work, eg. driving the car, gardening, riding a bicycle, mending the fence, swim in the surf and cleaning the gutters of the house. The point of this exercise was to examine hazard perceptions between individuals and industries.

Work here is

much less hazardous less hazardous same more hazardous much more hazardous

Driving the car?	37	47	10	5	1
Gardening?	3	16	38	36	7
Riding a bicycle?	16	56	15	10	3
Mending the fence?	6	24	40	26	4
Swim in the surf?	25	41	16	17	1
Cleaning the gutters of the house?	14	40	34	11	1

Table 9 Perceptions of hazard level at work compared to other exposures; %, n=100

The distributions in Table 9 imply that driving, cycling, surfing and cleaning gutters are high hazard items, considered on average to be more hazardous than work; gardening is a low hazard item (less hazardous than work) and mending the fence is a "neutral" item, ie. on average about the same hazard level as work.

If the "neutral" item is used to dichotomise the industries in the study according to their perceived hazard levels, the industries who rate themselves as high and low hazard jobs, respectively, are:

<i>High hazard jobs</i>	<i>Low hazard jobs</i>
Fishing	Hairdressing
Electrical work	Nurseries
Concreting	Cleaning
Farming	Printing
Metal work	Restaurants

Table 10 High and low hazard jobs according to the risk perceptions of the participants

3.4 Risk control and willingness to invest

About half the managers (48) agreed that there were potential risks in their operations which worried them and that they would like to eliminate or reduce. Twenty-eight reported that they were prepared to invest an average of AUD3,700 - towards this.

Only twenty-two could think of safety improvements which would also improve productivity; seventeen could put a figure on the improvement (an average of 20%). The examples given were primarily directed at improving productivity, but they also had strong safety aspects:

Some areas of concern (and/or investment) were:

Fishing

- extra, side-worn oxy bottle implies more relaxed, safer and deeper diving,
- a shelter to keep warm on-board while gutting makes you work safer,
- improved communication on-board/intercom improves maneuverability,
- improved training of crew; QA course
- moving to quota would make it safer and improve productivity 20%

Farming

- roll-bar on tractor
- welding and chemicals; more courses needed
- guards on old, un-guarded equipment
- improved dosage of chemicals would cover the training costs needed
- improving the cattle yard/runs would increase safety and productivity

Nurseries

- chemical spraying; sub-contracted to specialists
- reduction of manual handling by the introduction of forklifts
- forklift, tractors and front-end loader training
- operations palletised saved 2 staff; improved productivity by 20%
- trolley system reduced manual handling and improved productivity 15%
- bay loading system; 1-2%
- mechanised shearing would go 4 times faster (tree farm)

Cleaning

- sub-contractor's lack of control over the work environment
- scaffolding should be shade-clothed
- electrical safety; machines and equipment
- chemical hazards
- time and motion study done; mop bucket on wheels, vacuum back pack
- comfortable protective clothing in high pressure cleaning means 20%
- automatic scrubber for lino-floors (school holidays cleaning) - 50%
- custom-made trolleys to shift stack of chairs saves time and backs

Restaurants

- slippery floors; rubber-soled shoes among staff
- annual inspection of pressure cooker
- special sessions on knife skills needed
- strong cleaning agents to clean grills

Hairdressing

- slippery floors
- fumes and chemicals; forced ventilation
- hepatitis B/C; AIDS
- electrical safety; equipment

Printing

- use of solvents; forced ventilation
- UV radiation from machines; goggles
- old guillotines replaced, more than one person can use the new one - 5%
- lifting, unloading paper; electric pallet lifter
- bigger premises means safer loading, unloading and storing - 5%
- forklift improves productivity by 10%

Metal work

- stripping baths, fumes and forced ventilation
- guards on press
- spray powder and corrosive chemicals; information
- welding cords be put under the ceiling and along the walls
- new spray booths mean an improvement by 25%
- roller system to take off the labels from drums means 5%
- automatic feeders; one more machine and an improvement of 4%

Concreting

- hoist/crane to truck
- exhaust fumes in confined spaces; forced ventilation
- traffic risks at roadside sites;
- foam batts to rebate - 5%

Electrical work

- working on live wires; market demand
- good step-ladders
- hire scissor lift if required improves productivity by 60%

Sixty-eight said that they had invested capital in their business in the last 12 months, and half of these (36) indicated that they had invested in relation to safety (M=AUD2,000.-). The amounts invested varied a lot, and several of those reported were in relation to major upgrade of premises and processes. One Farmer in the sample had utilised the VWA-subsidy to retro-fit tractor roll-over protection.

Sixty-one said that they planned to invest capital in their business in the next 12 months, and half of these (27) planned to make investments in relation to safety (M=AUD4,500.-). Bigger vessels (Fishing), new spray booths for powder coating (Metal work), new colour printer saving one man (Printing), new hydraulic exhaust fan (Concreting) were all examples of planned major production upgrades, but with strong safety components.

To a query on their willingness to pay to prevent injuries in their company - based on the level of risk and their experience of work-related injuries - the average amount reported as a three year acceptable investment in prevention was AUD2,132.- (M=AUD2,000.-).

There was some variation between industries in the willingness to pay for prevention; the order according to Median values is reported in Table 11:

Industry	AUD willing to pay (Median)
1 Fishing	2,500
Nurseries	2,500
2 Metal work	2,250
Electrical work	2,250
3 Concreting	1,750
4 Printing	1,500
5 Farming	1,250
Cleaning	1,250
6 Restaurants	1,000
7 Hairdressing	625

Table 11 Willingness to pay for prevention over the next three years in the company; ordered Median values.

Farming is obviously low on this list, possibly related to the extreme self-reliance - and lack of funds - in this industry.

3.5 Attribution

When deciding on appropriate ways of influencing decisions among managers in relation to safety and the prevention of injuries it is important to know how these aspects of management are defined.

Safety problems were defined in the survey in terms of equipment/technology, resources/economy and staff/human resources. The following statements were given to the managers:

“Would you consider the potential safety problems in your operations to be related to....technology?ie. there are no good technical solutions readily available, or simply no other ways to perform the job!	Agree?				
	Totally	Somewhat	Hardly	Absolutely not	
	33	40	8	19	
.....economics?ie. lack of funds makes solutions unrealistic and possible investments are probably unprofitable!		12	33	6	49
.....human resources?ie. lack of skills, knowledge or training among the staff!		24	34	9	33

Table 12 Attitudes to the nature of safety problems

The technical attribution is the most popular; 73% agree (totally or somewhat) that their potential safety problems are technologically given. Fishing had the most affirmative average on this item, Restaurants the least.

Human resource problems are indicated by 58% (Fishing and Cleaning had the most affirmative average, Concreting the least); economic constraints seem less critical to safety; only 45% agree that they are (with Farming having the most affirmative average and Fishing the least).

Interestingly enough, even though we have indicated some variations between industries, none of these were significant. Furthermore, if high-risk and low-risk industries (see *Perceived hazards*) were compared, the averages were virtually identical.

This indicates that attitudes to the nature of occupational hazards tend to be general and stable across groups with different exposure and experience.

When asked to make a pie-chart describing the importance of the three factors (technology, economics, human resources) for safety in their workplace, a slightly amended version emerged. The median values given were 30% technology, 20% economics and 50% human resources. Again, no significant differences between industries emerged, and there were no differences at all between high-risk and low-risk industries.

The combined questions on attribution imply that managers see technology as the main component of safety management in their own company, but they see human resources (staff, ie. behavior) as the biggest general component in safety.

3.6 Attitudes to claims

Two thirds of the participants said that they normally would **not** report a minor injury (eg. victim fully recovered after a couple of days) to the workers' compensation system. In Fishing, Farming, Hairdressing and Concreting this was even more pronounced; 8-9 out of 10 in these industries said that they would not report minor injuries.

Only 14 had filed a claim with their workers' compensation insurer in the last 12 months. There were no reported claims from Fishing, Hairdressing, Printing or Electrical work in the sample.

Half of the managers (48%) thought that it was likely that the staff sometimes suffered minor work injuries without reporting it to them; only one in ten (11%) thought that staff sometimes reported injuries

sustained outside work as work-related. This was backed up by claims anecdotes from Fishing (2), Cleaning (4), Hairdressing (2), Metal work (2) and Electrical work (1).

Only 40 managers were aware of the VWA experience rated premium system, but 77 said that they believed that one claim filed over a twelve month period would influence their VWA premium.

Sixty managers said that they preferred to pay an injured employee directly, without reporting to Workcover, in the case of a minor injury.

Eighty-four managers reported that their staff was **not** unionized. Only Cleaning, Printing, Concreting and Electrical work reported unionized workers.

3.7 Decisions

Half the managers take normal operational decisions by themselves, 32 consult staff and 18 consult family; 54 managers handle appointments/retranchments themselves, 19 consult staff and 27 consult family.

Managers in Fishing, Cleaning, Concreting and Electrical work tend to decide without consultation in relation to normal operations; Managers in Concreting and Electrical work tend to take on or sack staff without consultation, and Managers in Farming tend to decide on medium-sized investment all by themselves. However, these deviations from the average were not statistically significant.

It was no surprise that when describing their role as managers on a scale between “self-sufficient” and “seek advice”, the average owner/manager was highly self-sufficient. Concreting and Electrical work had the highest average for self-sufficiency, Nurseries and Metal work the lowest (albeit still on the self-sufficient side).

Lack of resources is one obvious characteristic of many small enterprises. Owner/managers were asked to indicate the total debt and assets of their business, and on average the companies in the study owed 25.9% of their total worth. Just over half the participants (54) reported the size of their assets, which averaged AUD447,000.-

However, there seem to be significant differences between the industries in the study in terms of the proportion of debt in the company. Fishing and Farming were significantly less debt-ridden than the other industries; Restaurants, Hairdressing and Concreting were significantly more in hock than the others. Seven companies out of the hundred had more debts than assets; one Cleaning, three Restaurants, one Hairdressing and two Concreting.

3.8 Contacts in relation to OH&S

Eighty-seven of the companies had never contacted the Labour Inspectorate, Workcare/Workcover or their workers' compensation insurer; Fishing, Hairdressing and Concreting had no contacts at all.

When asked about their first contact, if confronted with a risk problem they could not solve, the the majority of companies suggested Inspectorate/Workcover as the primary contact, followed by the relevant Industry Association and the Workers' Compensation Insurer.

However, there was great diversity in terms of reported OH&S contact pattern between industries. Thus, primary contact with the Inspectorate/ Workcover was the most prevalent choice among Farming, Metal work, Concreting and Electrical work; the relevant Industry Association was the most frequent first choice among Nurseries, Hairdressing and Printing; the Workers' Compensation Insurer was the most popular first choice among Cleaning and Restaurants, whereas Fishing favoured their Local Business Colleagues.

Basic safety training and the services of ergonomists were considered the most important health and safety services for a majority of the companies. Again, there were priorities in terms of OH&S services mirroring the perceived specific problems in the respective industry. Thus Ergonomics was the top priority in Fishing, Farming and Concreting; Basic Safety Training the top priority in Hairdressing, Metal work and Electrical work; Dangerous Goods Management the top priority in Nurseries, Cleaning and Printing; and Risk Management the top priority in Restaurants.

3.9 VWA claims data

Considering the labour market structure in Victoria and the industries chosen for the study, it is hardly surprising to find that the <AUD400,000.- remuneration size covers an average of 97% of the establishments in these 10 industries throughout the State:

	N	N small	% small	Claims	C/\$m	C % <400'	C % 400'-1000'	C % >1000'
Fishing	293	291	99.9	15	1.0	5.2	-	-
Farming	7221	7218	99.9	291	1.7	2.8	-	-
Nurseries	614	581	95	66	1.0	5.0	50	57
Cleaning	3210	3105	97	299	1.4	3.5	50	70
Restaurants	4249	4076	96	323	0.8	3.9	33	62
Hairdressing	2455	2454	99.9	26	0.3	1.0	-	-
Printing	873	700	80	228	0.6	5.1	23.7	66
Metal work	1206	1019	84.5	542	1.6	10.0	48.6	78
Concreting	1048	1022	98	132	2.0	8.0	64	100
Electrical work	2120	2026	96	343	1.4	4.6	39	79
All above	23289	22492	97	2265	1.2			

Table 13 Number of employers registered with the VWA 1994/95, the proportion of employers with a remuneration <\$400,000.-, number of claims in 1994/95, claims per \$m remuneration, proportion of employers with claims in 1994/95 according to remuneration size.

Like the VWA Advisory Committee (1994) we can point to a strong relation between exposure and claims incidence, ie. in most industries there are more claims the larger the number of workers (as measured by remuneration).

All industries in our sample, with the notable exception of Hairdressing, show significant correlation between number of claims and total remuneration.

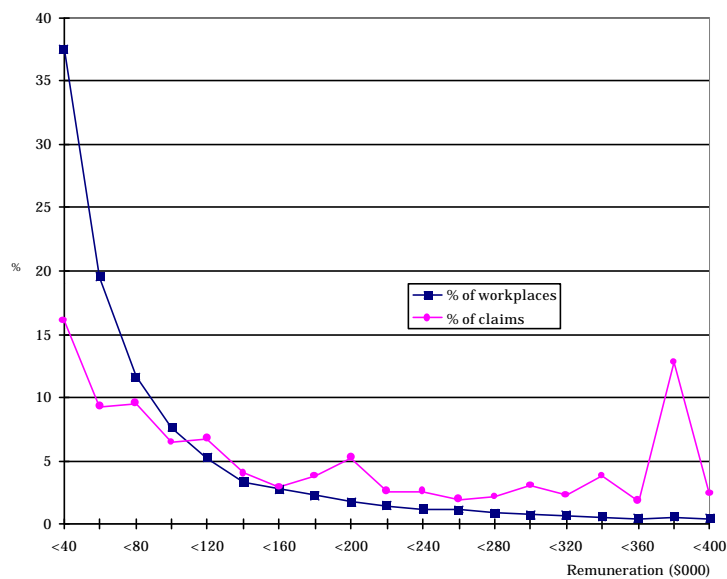


Figure 1 Workplaces and claims for the total number of establishments represented in the study distributed over remuneration sizes. Percentages based on the 1995/96 claims data. Establishments with remuneration less than \$7,500.- are excluded.

To illustrate this, Figure 1, based on the VWA claims data for 1995/96, show the percentage of workplaces and the percentage of claims distributed over remuneration levels between AUD20,000.- and AUD400,000.- for the ten industries in the study. The graphs indicate that number of claims follows size very closely, and that in most of the industries in the study, the really small workplaces have a smaller proportion of claims than expected.

In analysing the average claims cost for different sizes of operations, it is necessary to exclude companies with a remuneration level of less than AUD7,500.-, since such operators are not required to register for Workcover unless they have a claim, a rule which would guarantee an over-representation of the really small businesses in the claims material.

To control for a lack of minor-medium claims among small business, due to strategic claims management, which would create an inflated claims cost average, claims cost was checked against size of remuneration:

Remuneration by Claims cost; all claims VWA 1995/96						
Remuneration	Claims cost				Total	
	< \$5,000		≥ \$5,000			
\$7,500- \$40,000	702	61%	444	39%	1146	100%
\$40,001-\$120,000	1294	61%	815	39%	2109	100%
\$120,001-\$200,000	1004	65%	543	35%	1547	100%
\$200,001-\$600,000	3096	67%	1527	33%	4623	100%
>\$600,000	15264	72%	6067	28%	21331	100%
Total	21360		9396		30756	

Table 14 Relation between claims cost and size of remuneration, all VWA claims 1995/96. $\chi^2 = 174.55$ (df=4), Prob. 0.001.

The significant relation shown in Table 14 indicates one of two things: Either small companies have a higher propensity to generate severe injuries than larger companies, or, alternatively, there is a systematic under-reporting of minor-medium claims from small businesses, particularly from businesses smaller than AUD120,000 in remuneration, ie. the typical company-size of this study. We believe the second assumption to be more likely than the first.

4. DISCUSSION

The perspectives on small business in the literature are many and varied. It is obvious that small business is regarded as problematic from an occupational safety and health perspective. However, it is not clear how big the problems are, or how the characteristics of different types of small business operations, and the characteristics of the people working in small business, combine to create these problems.

Indeed, the core assumption of high risks, poor hazard management and a high incidence of occupational trauma and disease in small business - as opposed to lower risks, better hazard management and thus a low incidence of trauma and disease in large industrial establishments - seems hard to convincingly prove.

There is no real proof that size of an industrial establishment in itself would be an important factor for OH&S. Some industrial activities and processes define size - small or large - and the hazards generated in the process, and the actual risk exposure, will explain the incidence and type of occupational trauma and disease.

It is not necessarily true that work environment hazards become more pronounced in an operation because the owner/manager has poor knowledge about the Occupational Health and Safety Act. Similarly, competent legal and administrative safety management might have little to do with actual risk exposure and informal hazardous practices.

Many social, economical, and cultural factors are important in understanding and explaining the operations, including OH&S practices, of small business. But their potential OH&S problem depends mainly on *what* they do, not *how* they do it.

It is important to better understand the small business operator; the resource-poor but hard-working and obsessively pragmatic entrepreneur, who hates interference, who fills life with work and work with family and friends, who hocks the family home to provide business capital, and who survives in a competitive world by hands-on competence and long hours.

There are certainly much uncontrolled, unsafe, untaxed and often exploitative commercial activities going on in most countries, and such activities, of which there is ample anecdotal evidence and a long historical tradition in Australia, probably represents a growing concern. But this concern sometimes seems to unfairly fuel the discussion on small business.

4.1 Risk awareness and perceptions

Do the small business operators have enough knowledge about hazards and risk control? The results of this study indicate that those interviewed seemed to know quite well which type of risks they, and their family and staff, are exposed to. Educational background, the long average trade/ business experience, the risk exposure from the practical and hands-on type of work that virtually all owners/managers in this study do, their experience of work-related ill-health and traumatic injury, together with the perceived risks reported from the different industries support this.

Most small business operators also seem to have an intuitive and realistic picture of the relative risk level of their trade in relation to other industries and in relation to exposures outside work (Tables 6 - 10).

The attribution of safety to technological problems and restrictions (Table 12) indicates that tools, machines and equipment (ie. design, engineering and technical risk elimination and control) represent the main focus of attention in terms of hazard management for the small business operator. This is underpinned by the varied suggestions for improved risk control and investment.

Interesting comments in relation to structural arrangements and their importance to safety were voiced by many participants. Several Divers commented upon the change the introduction of fixed quota has made to risk coping and stress in the underwater search for Abalone, and Fishermen operating in presently unrestricted areas were positive to the introduction of more quota systems. Several Concreters berated the lack of an apprentice system in Concreting, which they felt would improve professional quality and safety.

Some occupational groups, particularly in high-risk areas, tend to under-estimate or be prepared to bear the high inherent health risks of their trade. Concreting is an example in this study (Table 8). Farmers have a tradition of high risk acceptance, which is combined with a low resource level (Table 11).

4.2 Risk control and investment

The willingness to invest in prevention seems to vary with perceived - and actual - risk exposure (Table 11). Many of the comments from the different industries show that safety-related investments done in the past 12 months were either in transport equipment like vehicles, vessels, engines, and trailers (Fishing, Farming, Nurseries, Cleaning, Concreting), forklifts and cargo handling systems (Nurseries), ventilation equipment (Printing, Metal work), floors (Restaurants, Hairdressers), or hydraulic work platforms/ scissor lifts (Electrical work).

The investment priorities seem to follow the perceived risks; ie. risks of severe or fatal trauma at sea, on the road, at heights, or from chemicals in confined spaces, and fall risks to staff and customers.

Resources to access safe solutions vary between industries. Some industries admit to being rich (Abalone-diving), others are losing money every year (Farming), and some are exposed to unsafe work environments and practices over which they have little control (Cleaning, Concreting, Electrical work). The attitude that money is no object in safety is common.

Decision-making seems, on the whole, to be based on, and directed towards, real risks. The major problem is that risk acceptance is too high among some industries, trades and occupational groups.

4.3 Injury incidence and claims behavior

Two out of three managers prefer to pay an employee with a minor injury directly, without reporting to VWA; three out of four believe that a claim would increase their VWA premium. The experience rating system, however, is rather complicated and does not cut in until remuneration is quite high (see Figure 2).

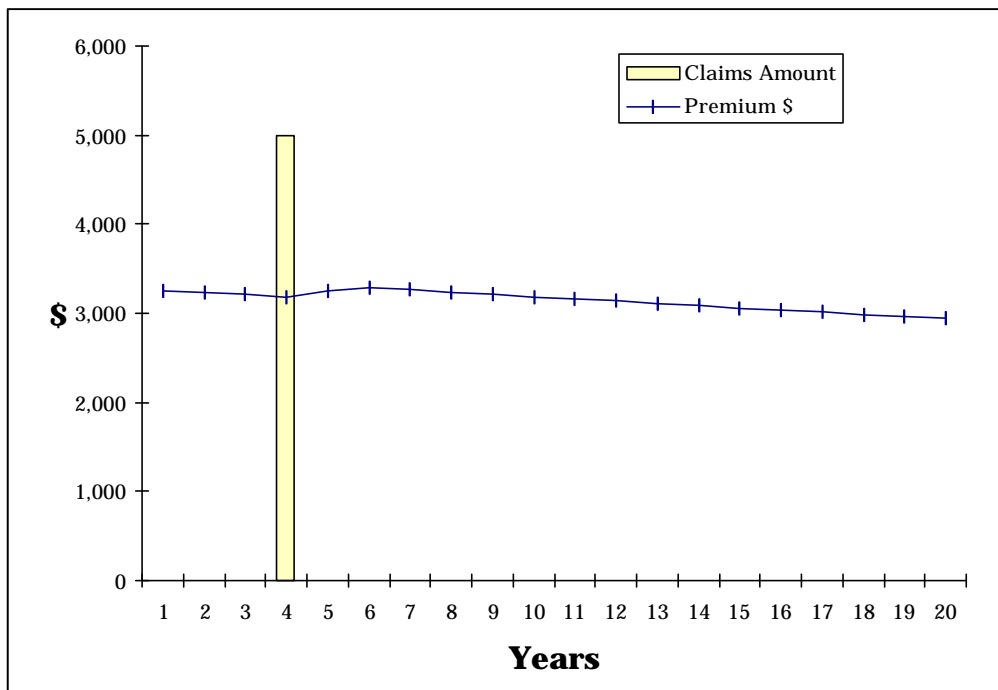


Figure 2 The effect of a \$5,000.- claim on the VWA premium in company with \$100,000.- remuneration and a set industry premium rate of 3.26%

The present excess in the VWA system of 10 days and AUD500.- of medical costs shifts a substantial proportion of the cost of traumatic occupational injury from the workers' compensation insurance to Medicare and the injured individual (Larsson & Betts, 1996).

It is probably fair to say that excess rules, together with the perceptions about the VWA experience rated premium system, have impacted on claims behavior; a large proportion of minor injuries in small business will not be insurance claims. In social, medical and injury prevention terms, this is not an altogether positive effect.

Workers' compensation is a major insurance component for the small family business. Nine out of ten Concreting firms in the study were family businesses, often run by brothers and wives. With an average annual remuneration of AUD123,000.-, and a VWA premium at 7%, workers' compensation insurance represents an cost of AUD8,600.- per annum. This is comparable to the annual cost of a good family car; private blue ribbon family health insurance for the two families in the Concreting firm would only cost about half of this.

Strategic insurance behavior, as well as risk coping behavior, when you are your own boss and your staff is your family, is presumably entirely different to the risk management strategy and the OH&S policy of the large employer. For the family company, workers' compensation insurance is a cover for the family members. Employer responsibilities coincide with family responsibilities, and messages about hazards and safety are directly received by those exposed. In a small family business, risk exposure, along with the responsibilities to cope with risks, cannot be delegated away to anonymous employees, over whom you exercise only limited control.

It is worth noting that there are distinct differences in "contact patterns" in relation to OH&S between the different industries in this study. In Fishing you talk to other Fishermen; in Hairdressing, Printing and Nurseries you contact your Industry Association; in Farming, Metal work, Concreting and Electrical work

you ring the VWA/Inspectorate; in Cleaning and Restaurants you contact your Insurer. This underlines the importance of respecting the specific structures and traditions of different trades and businesses when formulating successful intervention and work environment improvement strategies.

5. CONCLUSIONS AND RECOMMENDATIONS

It is crucial for successful approaches to improved work environment and safety in small business to understand that most small business operators have reasonable capacity, knowledge and experience to handle the risks in their own operations.

The practical, hands-on character of small business ownership, together with the strong involvement of close and extended family will define the perceptions of hazard and risk exposure. For operators of risk-exposed family businesses, safety will be a matter of responsibility to close and extended family.

Lack of knowledge in relation to OH&S laws, regulations and codes is only a problem if such knowledge is a requirement for finding solutions to the risk problems facing the small business operator. It would seem that the present general character of the "duty of care" legal framework is of little practical and applied problem-solving use to the small business operator.

To be relevant and useful to small business, the emphasis of the OH&S information should shift from the legalistic formal administration of safety to the practical solution of typical and high-priority technical risk problems in specific industries. The information included in the claims data of the workers' compensation insurance could potentially be applied for these purposes.

In view of the social characteristics of small business, and their pervasive inclusion of work in family and general life, there would probably be great improvements in successful communication about OH&S if there was a shift in focus from the traditional industrial relations and workers' compensation arguments to a genuine 24-hour perspective of public and family health.

The basic policy must be to make priorities for intervention, prevention and compliance control according to the distribution of hazardous exposure rather than according to the size of the company.

It is recommended that

- initiatives be taken to clearly *define the priorities for prevention in small business* - in terms of the industrial exposures which create especially severe and long-term injury - among Victorian small business operators,
- a special *OH&S and prevention services policy* be developed, together with relevant industry groups, *for small, risk-exposed family businesses* in Victoria,
- in developing OH&S services for small business, special attention be given to creating attractive *combinations of insurance, practical hazard management and family health* for small, risk-exposed family businesses in Victoria.
- a *practical intervention program* be launched and evaluated, directed at reducing the incidence, severity and cost to the community of the most prominent risks thus identified.

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