

# **Suicide and work related stress in Victoria**

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## **Accompanying documents to this report**

*Suicide and work related stress in  
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## Table of Contents

<b>1. Introduction.....</b>	<b>3</b>
<b>2. Method.....</b>	<b>5</b>
<b>3. Results</b>	
3.1 Database.....	6
3.2 Analysis.....	6
<b>4. Interventions.....</b>	<b>17</b>
<b>5. Strengths and limitations.....</b>	<b>18</b>
<b>6. Recommendations.....</b>	<b>18</b>
<b>References .....</b>	<b>19</b>

**List of Tables**

**Table 1.** Suicides and work related causes of stress.....9

**Table 2.** Work related suicides and non-work related causes of stress.....10

**Table 3.** Suicides associated with work-related cause of stress by gender - % of stress cause.....12

**Table 4.** Suicides associated with work-related causes of stress by gender - % of gender.....13

**Table 5.** Main work-related stress cause by ANZSCO occupation\*.....14

**Table 6.** Method of suicide by stressor type.....16

**List of Figures**

**Figure 1** Case identification for work related stressor suicides.....11

**Figure 2** Suicides associated with work-related stress: Age group by gender.....21

## 1. INTRODUCTION

### Definition

The World Health Organization defines stress as “the reaction people may have when presented with demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope”.

Stress is the second most common cause of workplace compensation claims in Australia, after manual handling. The issue has comprehensive coverage including by Worksafe Victoria, there being several guides on preventing work related-stress for the private and public sector featured on their website (<http://www.worksafe.vic.gov.au>). However there appeared to be only one mention of suicide (as a possible harmful outcome in Attachment 3. A Guide for employers in the public sector). There have been numerous studies in the academic literature of work stress. A PsychInfo library search for the period 2002 to September 2011 for the keywords *stress\** and *work\** identified 16,387 references. There were 411 when the term *suicide* was added.

### Suicides and work stress

Bottomley et al. (2002) found in their analysis of 109 Victorian Coroners work related suicides for the years 1989-2000 that the most frequent work difficulty was “stress at work” (n=23); then work troubles, problems, difficulties (21). Other work stress relevant major groupings were performance pressures (10), job dissatisfaction (8) and long hours (7). Most of the suicides considered work related were also experiencing at least one non-work related stressor eg relationship, issues, health issues, substance abuse.

Woo & Postolache (2008) reviewed the evidence around the impact of occupational factors on mood disorders and suicide and the efficacy of interventions and identified the following factors: shift work can increase the risk of developing or aggravating mood disorders, at least in vulnerable individuals; employees who perceive they are

treated unfairly by their supervisors are at increased risk of poor mental health; and lack of social support is related to depression.

Amagasa et al (2005) reviewed and summarised 22 insurance and legal reports filed by psychiatrists on employee suicides that were related to heavy workloads. Long working hours were recognised in 19 suicides, low social support in 18, high psychological demand in 18 and low decision latitude in 17 cases. The subjects had depressive episodes by ICD-10 criteria and showed suicidal signs.

A report on the Queensland commercial building and construction industry (CBCI) identified that construction workers have a tendency towards elevated suicide rates, compared to the general male working age population. This was amplified in young CBCI workers, whose suicide risk was approximately twice that of age-matched cohorts. It appears that work-related factors (e.g. long working hours, pressure), interpersonal factors (e.g. relationship problems), and individual factors (e.g. alcohol and substance abuse) interact to contribute to suicide risk in this male-dominated, blue-collar industry (AISRAP, 2006).

### **Stress**

McCalister (2003) noted that high levels of job stress correlated to high levels of job dissatisfaction which is influenced by co-worker support, supervisor support, work stress and personality disposition.

There are many Japanese studies supporting the contribution of work stress to psychological distress. For example, Kawakami & Haratani (1999) reported that more than half of Japanese employees reported job-related distress. Working ten hours or longer per day was associated with lower satisfaction in working life among men in managerial occupations. Among middle-aged working men, those who worked 50 hours or longer per week had higher levels of irritation, anxiety, loss of interest and exhaustion. Feelings that the job is unsuitable, a lack of control over the

workplace and poor human relations at work were associated with depression, a well documented risk factor for suicide.

Bottomley et al. (2002) and Hartshorn (1997) noted that “Stressful jobs are rarely the sole cause of an employee’s suicide. How an individual copes with the pressures of the job is influenced by many factors such as employee’s personality, prior experiences, personal support system and the balance and satisfaction the employee finds in other aspects of their life”.

### **Data sources**

The Victorian Work Related Fatalities Database (VWRFD) is a record of both intentional and unintentional injury deaths reported to the Victorian Coroner that have a work related component. Where there are co-existing factors such as relationship problems or mental health issues, the suicide is still coded as work-related. However if there are many other stressors listed or the coroner named a particular other stressor such as relationship breakdown or terminal illness as the major stressor then the suicide has not been classified as work-related. Non work related factors may have been noted in addition to those that are work- related (Bugeja et al. 2009). Included in this study are suicides that have workplace stress reported in the police summary of circumstances or the coroners findings as a cause or phrases noted such as work related ‘dissatisfied, unhappy, stressed, depressed, anxious or pressured’ but otherwise unspecified, PTSD, excessive workload or work hours or work conditions affecting lifestyle eg shift work, geographical separation from family.

### **Aim**

The research aimed to provide an overview of all Victorian suicides associated with work related stress between July 2000 and December 2008 that have been closed by the Coroner and make recommendations for prevention.

## 2. METHOD

i) Work related suicides that had been closed by the Coroner as at 19th December 2010 were extracted from the VWRFD for the most complete data collection period (July 2000-December 2008).

ii) To the extent to which this could be determined from the Coroner's records, work relatedness had been determined by a hierarchy of *work agent*, *work stressor*, *commercial transport* and then *work location* response variables. Secondary work relatedness had also been recorded. The work stressor suicides were extracted.

iii) For each work related stressor suicide in the extracted dataset up to two work related stressor types were coded, in order of contribution to the suicide. Another variable 'work stressor type' was added to record if the stressor was the sole work related stressor or one of multiple stressors, the other stressors being non-work related e.g. mental health issues.

iv) Work related stressor type categories, determined to be relevant to this study of *general/other work stress* from the previous report to Worksafe "Work Related Suicide Stressors" were extracted (Figure 1). These *general/other work stress* suicides were analysed for the following variables: work related and non-work related causes of stress, gender, age-group, occupation and suicide method used.

v) Analyses were undertaken using Microsoft Excel 2007 and SPSS Statistics version 19.0.

## 3. RESULTS

### 3.1 Database

There were 2,024 work related fatalities that had been closed by the Coroner on the VWRFD for the period July 2000 to December 2008. Of these, 730 (36.1%) were suicides and 378 (18.7%) were work related stressor suicides where stressors were of primary work-relatedness.

### 3.2 Analysis

From the work stressor suicides (Figure 1) there were 92 suicides coded as being associated with *general/other work stress* for the period July 2000 to December 2008, an average of ten per year. Of these suicides the majority, 53 (58%) mentioned multiple stresses in the case report, of which at least one was a work-related stress. There were also 39 suicides (42%) which specified a single work-related stress in the case report (Table 1). For the majority of suicides, 54 (59%) the specific details of the work-related stress were not reported. This *unspecified* work-related stress included mention of dissatisfaction or unhappiness with work, or work-related depression, anxiety or pressure as a contributing factor in the suicide. Other work-related stressors included: Post Traumatic Stress Disorder (PTSD) following a work-related incident, reduction in hours and excessive workload or working long hours, anxiety related to performance and anxiety about returning to work after a break (Table 1).



Table 1 Suicides and work related causes of stress

Work-related causes and/or reports of stress	Multiple causes of stress including work-related**(N)	Single work-related cause of stress (N)	Total (N)
General unspecified work-related stress, depressed, anxious, unhappy, dissatisfied, or pressured	29	25	54
PTSD – depression or anxiety following an incident	3	3	6
Hours had been cut back	*	3	5
Performance Anxiety	5	0	5
WorkCover claimant for anxiety/depression	3	*	5
Excessive workload or work hours	4	*	5
Return to Work Anxiety	3	0	3
Not coping with or mismatched to job	*	*	3
Lack of recognition of contribution/ Work conditions affecting lifestyle / Unwanted change to position or department/ Change of pay arrangement	3	3	6
<b>Total</b>	<b>53</b>	<b>39</b>	<b>92</b>

Source: VWRFD Closed cases, July 2000 – December 2008

\*Cell counts less than 3 cannot be noted.

\*\* Primary stressor type only

The non work-related stressors of the 53 suicides which had multiple stressors included in the case reports are summarised in Table 2. The most common co-existing suicide triggers mentioned were psychological difficulties or depression (22, 42%), a history of mental illness or psychiatric treatment (10, 19%), relationship breakdown (9, 17%) and financial difficulties (7, 13%). Multiple non work-related causes of stress were mentioned in 21 (40%) of suicides.

Table 2. Work related suicides and non-work related causes of stress

<b>Non work- related causes of stress</b>	<b>Stressor 1 (N)</b>	<b>Stressor 2 (N)</b>	<b>Total</b>
Psychological difficulties/ depression	22	*	24
Mental illness/ psychiatric history	10	0	10
Relationship breakdown	9	4	13
Financial difficulties	7	5	12
Loss of a significant relationship	*	*	4
Alcohol/drug use	*	*	4
WorkCover	0	4	4
Other	1	1	2
<b>Total</b>	<b>53</b>	<b>20</b>	<b>73</b>

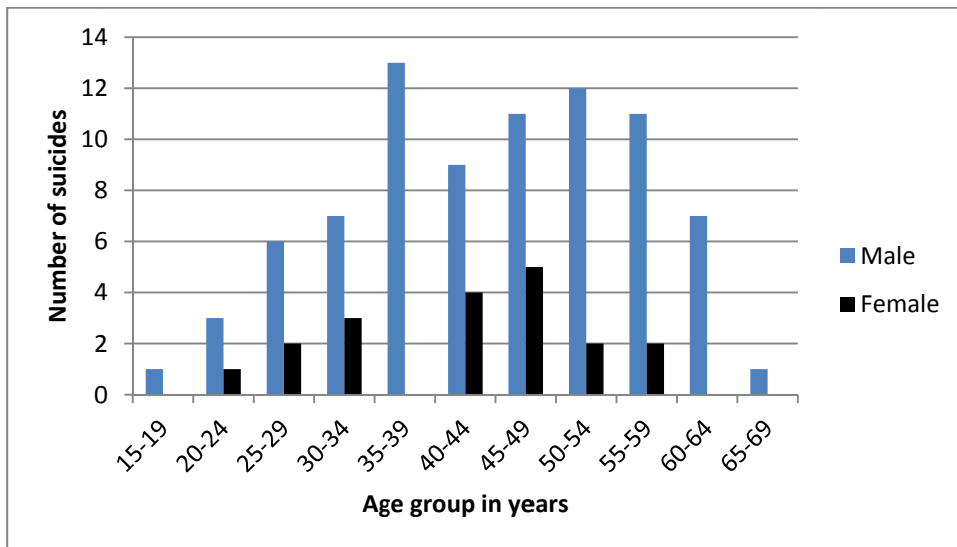
Source: VWRFD Closed cases, July 2000 – December 2008

\*Cell counts less than 3 cannot be noted.

### **Age and gender**

The majority of suicides (11, 12%) were males in the 35-39 year age group whereas in females the highest number of suicides (5, 5%) was in the 45-49 year old age group (Figure 2)

Figure 2. Suicides associated with work-related stress: Age group by gender



Source: VWRFD Closed cases, July 2000 – December 2008

Four times as many male suicides were associated with general work-related stress than female suicides (79% male vs 21% female) (Table 4).

Table 3. Suicides associated with work-related cause of stress by gender - % of stress cause

Work-related cause of stress**	Gender				Total N
	Male		Female		
	N	%	N	%	
General unspecified work-related stress, depressed, anxious, unhappy, dissatisfied, or pressured	43	79.6	11	20.4	54
PTSD – depression or anxiety following an incident	3	50	3	50	6
Hours had been cut back	5	100	0	0	5
Performance Anxiety	4	80	*	*	5
WorkCover claimant for anxiety/depression	5	100	0	0	5
Excessive workload or work hours	4	80	*	20	5
Not coping with or mismatched to job	3	100	0	0	3
Return to Work Anxiety	*	66.7	*	*	3
Lack of recognition of contribution/ Work conditions affecting lifestyle/ Unwanted change to position or department/Change of pay arrangement	4	*	*	*	6
<b>Total</b>	<b>73</b>	<b>79.3</b>	<b>19</b>	<b>20.7</b>	<b>92</b>

Source: VWRFD Closed cases, July 2000 – December 2008

\*Cell counts less than 3 cannot be noted.

\*\* Primary cause of stress only

Of the stressors mentioned in case reports, approximately the same proportion of male and female suicides (58% each) were associated with *general unspecified* work-stress (Table 5). Females were proportionally more likely to have had PTSD after a work-related incident (16% vs 4%). Only male suicides were associated with WorkCover claims for depression or anxiety and stress as a result of hours being cut back, or from not coping or being mismatched to their jobs, as well as changes to pay or unwanted changes to position or department. Males and females were equally likely to have had stress associated with performance anxiety, or excessive hours or workload.

Table 4. Suicides associated with work-related causes of stress by gender - % of gender

Work-related cause of stress**	Gender				Total
	Male		Female		
	N	%	N	%	
General unspecified work-related stress, depressed, anxious, unhappy, dissatisfied, or pressured	43	58.9	11	57.9	54
PTSD – depression or anxiety following an incident	3	4.1	3	15.8	6
Hours had been cut back	5	6.8	0	0	5
Performance Anxiety	4	5.5	*	*	5
WorkCover claimant for anxiety/depression	5	6.8	0	0	5
Excessive workload or work hours	4	5.5	*	*	5
Not coping with or mismatched to job	3	4.1	0	0	3
Return to Work Anxiety/	*	*	*	*	3
Lack of recognition of contribution/ Work conditions affecting lifestyle/ Unwanted change to position or department/ Change of pay arrangement	4	*	*	*	6
<b>Total</b>	<b>73</b>	<b>100</b>	<b>19</b>	<b>100</b>	<b>92</b>

Source: VWRFD Closed cases, July 2000 – December 2008

\*Cell counts less than 3 cannot be noted.

\*\* Primary stress cause only

### Major Occupational Groupings (ANZSCO)

Work stress major Australia and New Zealand Standard Classification of Occupations (ANZSCO) groupings were most commonly professionals (n=24), managers (17), technicians and trade workers (13), community and personal services workers (12) machinery operators and drivers (7), labourers (7) and clerical and administrative workers (5). Eleven were not actually employed at the time of suicide (ie ANZSCO *Not Applicable*) and their previous occupation implicated in the work stress is therefore included here. Professionals, Managers and Community and

Personal Service Workers were most likely to be affected by general unspecified work-related stress (Table 5).

Table 5. Main work-related stress cause by ANZSCO occupation\*

<b>Work-related stress type**</b>	<b>N</b>	<b>Most common major occupational ANZSCO grouping***</b>
General unspecified work-related stress, depressed, anxious, unhappy, dissatisfied, or pressured	54	Professionals (17), Managers (11), Community & Personal Service Workers (8), Technician and trade workers (6), Labourers (4), Clerical and admin workers (3), Machinery operators and drivers (3), (Frequencies include 7 N/A)
PTSD – depression or anxiety following an incident	6	Community & Personal Service Workers (*)
Hours had been cut back	5	Varied
Performance Anxiety	5	Varied
WorkCover claimant for anxiety/depression	5	Professional (*)
Excessive workload or work hours	5	Varied
Not coping with or mismatched to job	3	Technicians & Trade workers (3)
Return to Work Anxiety	3	*
Lack of recognition of contribution/ Work conditions affecting lifestyle/ Unwanted change to position or department/ Change of pay arrangement	6	
<b>Total</b>	92	

Source: VWRFD Closed cases, July 2000 – December 2008

\*Cell counts less than 3 cannot be noted.

\*\* Primary stressor type only

\*\*\* Includes 11 whose major ANZSCO grouping was actually Not Applicable at their time of death but previous occupation implicated in work stress included here.

Where there were sufficient numbers (>=3) the following could be reported for the various occupational coding systems on the VWRFD for the 54 general/unspecified

work-related stress as in Table 5. For current occupation and NCIS usual occupation: builders (3), cabinet makers (3) and truck drivers (3), student (3) and retired (4). For ANZSCO occupation as above but also retail managers (3). Minor ANZSCO grouping also wood trades workers (3). Sub-major ANZSCO grouping: Design, engineering, science and transport professionals (7), hospital, retail and service managers (5), specialist managers (5), construction trades workers (4), business, human resources and marketing professionals (4), other technician and trades workers (4), protective service workers (4), road and rail drivers (4), carers and aides (3), factory process workers (3), inquiry clerks and receptionists (30) and legal, social and welfare professionals (3).

### **Method of Suicide**

Hanging (54.3%) (51% all Victorian suicides) was the most common suicide method followed by motor vehicle exhaust gas (21.7%) (10.9% all Victorian suicides) (Table 6). Although population sizes are likely to be too low to exhibit statistical significance being a group with probable high vehicle ownership reflects motor vehicle exhaust gas choice of method.

Table 6. Method of suicide by stressor type

Suicide Method	General unspecified work-related stress	PTSD	Hours cut back	Performance Anxiety	WorkCover claimant	Excessive workload / work hours	Not coping with or mismatched to job	Return to Work Anxiety	Lack of recognition of contribution/ Work conditions affecting lifestyle/ Unwanted change to position or department/ Change of pay arrangement	Total
Hanging	31	*	*	3	*	3	*	*	5	50
Gases and other vapours (mostly motor vehicle exhaust gas)	14	*	*	0	0	*	*	*	0	20
Drug overdose	*	*	*	*	*	0	0	0	0	7
Firearms	*	0	*	0	*	0	0	*	0	5
Struck by train	*	0	0	*	*	0	0	0	*	5
Jumping from high places	3	0	0	0	0	0	0	0	0	3
Drowning	*	*	0	0	0	0	0	0	0	*
<b>Total</b>	<b>54</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>92</b>

\*Cell counts less than 3 cannot be noted.

Source: VWRFD Closed cases, July 2000 – December 2008



#### **4. INTERVENTIONS**

Although not specifically focussing on suicide a VicHealth study (2006) involved the review of 90 published job stress intervention studies and concluded that a systems approach to job stress is more effective than other alternatives yielding benefits to individuals such as decreased stress and improved health and organizations.

Systems approaches to job stress combining individually-focussed interventions with organisational interventions were found to be the most effective. The proportion of interventions taking a systems approach has increased in recent years.

Two award-winning suicide prevention interventions for men in the building and construction industry were presented at the 4<sup>th</sup> Asia Pacific Conference of the IASP. 17-20 November. Brisbane:

1) Incolink is a Life Care Skills program that has been delivered to over 15,000 apprentices in rural and regional Victoria. A Victoria University evaluation indicated that the program is effective in increasing awareness and knowledge of suicide risk factors and promoting self-seeking behaviour and that the key components leading to effectiveness included the program's holistic approach that targeted multi-risk factors. Tailoring the program to specific needs of young men, their learning styles (eg narrative approach) and delivering the program in workplaces were also found to be effective (Corney,T, 2010).

Mates in Construction is a program developed by OzHelp Queensland to deal with suicide in the construction industry. It followed on from the AISRAP (2006) report. The program aims to raise awareness, facilitate getting help and ensure the help is appropriate to the needs of the worker. All workers are General Awareness Trained (GAT) providing a base understanding of the need to look after their own and their mates mental health and well-being – What does it look like when your mate is doing it tough? Workers self nominate as “Connectors” – A mate who can keep you safe while connecting you to help. One in 20 workers is trained as a Connector. The connectors can contact “ASSIST” workers – generally site nurses, safety officers, union officials etc who can intervene, construct a safe plan and refer the worker for

further help. The award winning program now involves 6500 workers. The programs' experience is that men will seek help if offered in a culturally appropriate manner (Gullestrup et al, 2010).

## **5. STRENGTHS AND LIMITATIONS**

Limitations of this study are: 1) Some work related stress suicides may not have been captured in the VWRFD where work stress was not identified by police or coroners and 2) NCIS circumstances and findings attachments are variable in the information they provide when reviewed for additional information on work related stress.

## **6. RECOMMENDATIONS**

1. The general principle of public health measures to support the whole population to reduce work stress should assist in reducing these suicides.
2. Death investigators should consider work stress explicitly during suicide investigations.
3. Worksafe compensation data and hard copy Coroners manual files could be investigated and surveys conducted to supplement the data obtained in this study.
4. An investigation of Australia-wide work related stress suicides on the National Coronial Information System could provide more robust results although it is currently complex to find relevant cases on this system.
5. Victoria's Incolink Life Care Suicide Prevention program and Queensland's Mates in Construction program be investigated for possible wider adoption.
6. Identify specific intervention points for prevention of harmful levels of work stress such as guidelines for management of excessive work hours or work overload, return to work etc.

Emphasize interventions that are systems approaches to job stress combining individually-focused interventions with organizational interventions.

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**FIGURE 1: CASE IDENTIFICATION FOR WORK RELATED STRESSOR SUICIDES**

