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NEW ISSUE

WORK-RELATED INJURIES AND ILLNESSES, NEW SOUTH WALES, OCTOBER 1993

MAIN FEATURES

The Work-Related Injuries and Illnesses survey was conducted throughout New South Wales in October 1993. The survey covered persons who were either currently working or had worked in the last 12 months.

Major findings from this survey were:

Awareness of workers' compensation benefits

- An estimated 82% of currently employed persons stated that they were aware that they were covered by workers' compensation.
- However, of those people who stated that they were aware, 47% were not sure or didn't know which scheme actually covered them.
- The level of workers' compensation awareness varied across industries, ranging from 41% of people employed in Agriculture, forestry, fishing and hunting to over 95% of people employed in Electricity, gas and water (100%); Communication (97%); and Public administration and defence (96%).

Incidence of injuries/illnesses

- Over the last 12 months 231,300 persons reported that they had suffered a work-related injury or illness. This represents 8.3% of all persons who were employed at some time within that 12 month period.
- For the most recent injury reported in the last 12 months; 39% of injured persons stated that they suffered sprains, strains and/or torn ligaments or muscles and 15% suffered cuts and open or puncture wounds.

Injured persons and workers' compensation

- Of those people injured, 108,300 or 47% had applied for workers' compensation.
- For those injured persons that didn't apply for workers' compensation (123,000 persons), 52% stated that it was because the injury was minor or it was not necessary.
- Nearly half (49%) of injured persons who didn't apply for or didn't receive workers' compensation benefits did not seek any other type of assistance, while 22% used Medicare as a source of assistance.

Extent of rehabilitation services used

- Some 73% of injured persons did not seek or receive any type of rehabilitation assistance. Of those that did receive rehabilitation assistance the most common type of assistance received was that their work duties were modified (temporarily or permanently).

INQUIRIES • *for further information about statistics in this publication and the availability of related unpublished statistics, please contact Jill Tomlinson on Sydney (02) 268 4388.*

• *for information about other ABS statistics and services please refer to the back page of this publication.*

NOTES

This publication contains results relating to the Work-Related Injuries and Illnesses survey conducted throughout NSW in October 1993. The major objectives of the survey were to assess the level of awareness of workers, to their compensation rights when injured at work, to quantify the level to which workers' compensation is not sought by those injured at work and to determine whether rehabilitation had been undertaken by injured workers.

Explanatory and Technical Notes for these data are located on pages 8-10.

GREG BRAY
Deputy Commonwealth Statistician

SECTION 1: AWARENESS OF WORKERS' COMPENSATION

TABLE 1.1 CURRENTLY EMPLOYED PERSONS: WHETHER THEY THINK THEY ARE COVERED BY WORKERS' COMPENSATION BY INDUSTRY, NSW, OCTOBER 1993

Industry	Number ('000)				Proportion (per cent)			
	Yes	No	Don't know/ not sure	Total	Yes	No	Don't know/ not sure	Total
Agriculture, forestry, fishing and hunting	37.0	47.4	*6.3	90.7	40.8	52.3	*6.9	100.0
Mining	24.9	*1.5	*0.7	27.2	91.8	*5.7	*2.6	100.0
Manufacturing	332.1	17.8	19.0	368.9	90.0	4.8	5.1	100.0
Electricity, gas and water	36.5	—	—	36.5	100.0	—	—	100.0
Construction	117.7	44.7	12.0	174.5	67.5	25.6	6.9	100.0
Wholesale and retail trade	384.0	65.9	45.6	495.5	77.5	13.3	9.2	100.0
Transport and storage	107.3	18.0	*4.6	129.9	82.6	13.9	*3.5	100.0
Communication	38.4	*0.3	*0.9	39.6	96.9	*0.8	*2.3	100.0
Finance, property and business services	261.2	32.2	16.2	309.5	84.4	10.4	5.2	100.0
Public administration and defence	97.4	*1.7	*1.9	101.1	96.4	*1.7	*1.9	100.0
Community services	408.4	25.3	20.1	453.8	90.0	5.6	4.4	100.0
Recreation, personal and other services	145.9	27.0	15.8	188.7	77.3	14.3	8.4	100.0
Not stated	62.9	17.1	9.9	89.9	69.9	19.1	11.0	100.0
Total	2,053.7	299.1	153.0	2,505.7	82.0	11.9	6.1	100.0

TABLE 1.2 CURRENTLY EMPLOYED PERSONS: WHETHER THEY THINK THEY ARE COVERED BY WORKERS' COMPENSATION BY OCCUPATION, NSW, OCTOBER 1993

Occupation	Number ('000)				Proportion (per cent)			
	Yes	No	Don't know/ not sure	Total	Yes	No	Don't know/ not sure	Total
Managers and administrators	201.6	81.8	14.4	297.8	67.7	27.5	4.8	100.0
Professionals	305.6	35.3	13.5	354.4	86.2	10.0	3.8	100.0
Para-professionals	134.8	*6.3	*3.9	145.0	93.0	*4.4	*2.7	100.0
Tradespersons	286.2	54.1	18.0	358.3	79.9	15.1	5.0	100.0
Clerks	371.3	21.3	20.8	413.4	89.8	5.2	5.0	100.0
Sales and personal service workers	274.2	35.4	34.4	344.0	79.7	10.3	10.0	100.0
Plant and machine operators, and drivers	142.2	20.6	9.9	172.6	82.4	11.9	5.7	100.0
Labourers and related workers	274.9	27.3	28.2	330.4	83.2	8.3	8.5	100.0
Not stated	62.9	17.1	9.9	89.9	69.9	19.1	11.0	100.0
Total	2,053.7	299.1	153.0	2,505.7	82.0	11.9	6.1	100.0

TABLE 1.3 CURRENTLY EMPLOYED PERSONS: WHETHER THEY THINK THEY ARE COVERED BY WORKERS' COMPENSATION BY MAIN LANGUAGE SPOKEN AT HOME, NSW, OCTOBER 1993

<i>Main language spoken at home</i>	<i>Number ('000)</i>				<i>Proportion (per cent)</i>			
	<i>Yes</i>	<i>No</i>	<i>Don't know/ not sure</i>	<i>Total</i>	<i>Yes</i>	<i>No</i>	<i>Don't know/ not sure</i>	<i>Total</i>
English	1,879.2	265.0	128.0	2,272.1	82.7	11.7	5.6	100.0
<i>Non English languages—</i>								
Arabic/Lebanese	14.4	*4.6	*2.5	21.4	67.2	*21.4	*11.5	100.0
Chinese languages	32.9	7.2	8.3	48.5	67.9	14.9	17.2	100.0
Greek	15.8	*2.8	*2.9	21.5	73.6	*13.1	*13.3	100.0
Italian	15.1	*1.0	—	16.0	94.0	*6.0	—	100.0
Vietnamese	7.4	*2.4	*1.0	10.7	69.1	*22.0	*8.9	100.0
Other	88.9	16.2	10.4	115.5	77.0	14.0	9.0	100.0
<i>Total</i>	<i>174.5</i>	<i>34.2</i>	<i>25.1</i>	<i>233.6</i>	<i>74.7</i>	<i>14.6</i>	<i>10.7</i>	<i>100.0</i>
Total	2,053.7	299.1	153.0	2,505.7	82.0	11.9	6.1	100.0

TABLE 1.4 CURRENTLY EMPLOYED PERSONS WHO THINK THEY ARE COVERED BY WORKERS' COMPENSATION: SCHEME BY WHICH THEY THINK THEY ARE COVERED, NSW, OCTOBER 1993

<i>Scheme by which they think they are covered</i>	<i>Number ('000)</i>	<i>Proportion (per cent)</i>
NSW WorkCover	858.8	41.8
Comcare	81.3	4.0
Other type of scheme specified	155.8	7.6
<i>Total aware of scheme</i>	<i>1,095.9</i>	<i>53.4</i>
Don't know/not sure	957.7	46.6
Total	2,053.7	100.0

TABLE 1.5 CURRENTLY EMPLOYED PERSONS WHO THINK THEY ARE COVERED BY WORKERS' COMPENSATION AND ARE AWARE OF THE SCHEME WHICH COVERS THEM: SOURCES FROM WHICH THEY LEARNED THIS INFORMATION, NSW, OCTOBER 1993

<i>Sources from which they learned about scheme</i>	<i>Number ('000)</i>	<i>Proportion (per cent)</i>
Employer seminar/discussions	480.8	43.9
Discussions with friends	204.9	18.7
Workers' union	214.3	19.6
Brochures, posters or reading materials	247.8	22.6
Discussion with doctor/therapist	21.6	2.0
Other	127.8	11.7
Total (a)	1,095.9	100.0

(a) As persons may report more than one source, categories will not add to the total.

SECTION 2: INJURED PERSONS

Injured persons refers to persons suffering from work-related accidents and/or illnesses. Work-related accidents include injuries resulting from accidents at place of work, while commuting to or from work, during work breaks or outside place of work but while on work duty. These could include sprains, cuts, bruises, fractures, etc. Work-related illnesses include all illnesses contracted due to work, for example, industrial deafness, repetitive strain injuries (RSI), hernias and skin diseases.

TABLE 2.1 PERSONS WHO ARE WORKING OR HAVE WORKED IN THE LAST 12 MONTHS: WHETHER THEY HAVE BEEN INJURED AT WORK BY AGE AND SEX, NSW, OCTOBER 1993

Age	Number ('000)			Proportion (per cent)		
	Injured	Non-injured	Total	Injured	Non-injured	Total
MALES						
15-24 years	24.2	267.6	291.8	8.3	91.7	100.0
25-34 years	40.9	366.3	407.2	10.0	90.0	100.0
35-44 years	39.9	367.2	407.2	9.8	90.2	100.0
45-54 years	32.0	280.3	312.3	10.2	89.8	100.0
55-64 years	12.9	134.1	147.0	8.8	91.2	100.0
65 years or over	*0.6	27.0	27.6	*2.2	97.8	100.0
<i>All males</i>	<i>150.5</i>	<i>1,442.5</i>	<i>1,593.0</i>	<i>9.4</i>	<i>90.6</i>	<i>100.0</i>
FEMALES						
15-24 years	17.2	246.9	264.2	6.5	93.5	100.0
25-34 years	21.5	289.2	310.8	6.9	93.1	100.0
35-44 years	17.4	297.7	315.1	5.5	94.5	100.0
45-54 years	14.4	212.0	226.4	6.4	93.6	100.0
55-64 years	8.4	61.5	69.9	12.0	88.0	100.0
65 years or over	*1.8	12.7	14.4	*12.3	87.7	100.0
<i>All females</i>	<i>80.8</i>	<i>1,120.0</i>	<i>1,200.8</i>	<i>6.7</i>	<i>93.3</i>	<i>100.0</i>
PERSONS						
15-24 years	41.4	514.5	556.0	7.4	92.6	100.0
25-34 years	62.4	655.5	718.0	8.7	91.3	100.0
35-44 years	57.4	664.9	722.3	7.9	92.1	100.0
45-54 years	46.4	492.3	538.7	8.6	91.4	100.0
55-64 years	21.3	195.6	216.9	9.8	90.2	100.0
65 years or over	*2.4	39.7	42.0	*5.7	94.5	100.0
<i>All persons</i>	<i>231.3</i>	<i>2,562.5</i>	<i>2,793.8</i>	<i>8.3</i>	<i>91.7</i>	<i>100.0</i>

TABLE 2.2 PERSONS WHO HAVE BEEN INJURED AT WORK IN THE LAST 12 MONTHS: NUMBER OF INCIDENTS THAT OCCURRED, NSW, OCTOBER 1993

Number of incidents	Number ('000)	Proportion (per cent)
One injury	178.5	77.2
Two injuries	35.1	15.2
Three injuries or more	17.8	7.7
Total	231.3	100.0

TABLE 2.3 PERSONS WHO HAVE BEEN INJURED AT WORK IN THE LAST 12 MONTHS: TYPE OF MOST RECENT INJURY, NSW, OCTOBER 1993

<i>Type of injury</i>	<i>Number ('000)</i>	<i>Proportion (per cent)</i>
Injury and poisoning—		
Sprains, strains and/or torn ligaments or muscles	90.7	39.2
Cuts, open wounds or puncture wounds	33.9	14.6
Bruising and/or crushing injuries	22.9	9.9
Broken or fractured bones, dislocations	12.3	5.3
Other	16.7	7.2
<i>Total injury and poisoning</i>	<i>176.4</i>	<i>76.3</i>
Diseases of the nervous system and sense organ	10.0	4.3
Diseases of the musculoskeletal system and the connective tissue	13.3	5.8
Diseases of the skin and subcutaneous tissue	*5.5	*2.4
Diseases of the digestive system	*4.6	*2.0
Diseases of the respiratory system	*4.3	*1.9
Diseases of the circulatory system	*0.3	*0.1
Neoplasms	*0.7	*0.3
Mental disorders and stress	8.7	3.8
Other diseases	7.4	3.2
Total	231.3	100.0

TABLE 2.4 PERSONS WHO HAVE BEEN INJURED AT WORK IN THE LAST 12 MONTHS: WHETHER APPLIED FOR WORKERS' COMPENSATION BENEFITS BY INDUSTRY, NSW, OCTOBER 1993

<i>Industry</i>	<i>Number ('000)</i>			<i>Proportion (per cent)</i>		
	<i>Applied</i>	<i>Did not apply</i>	<i>Total</i>	<i>Applied</i>	<i>Did not apply</i>	<i>Total</i>
Agriculture, forestry, fishing and hunting	*1.7	7.3	8.9	*18.5	81.5	100.0
Mining	*4.1	*2.3	*6.5	*64.0	*36.0	*100.0
Manufacturing	18.8	17.9	36.7	51.1	48.9	100.0
Electricity, gas and water	*2.9	*2.8	*5.7	*50.7	*49.3	*100.0
Construction	11.2	14.2	25.5	44.0	56.0	100.0
Wholesale and retail trade	14.5	21.2	35.7	40.6	59.4	100.0
Transport and storage	7.5	*3.8	11.3	66.2	*33.8	100.0
Communication	*5.4	*1.6	7.0	*76.6	*23.4	100.0
Finance, property and business services	7.6	9.4	17.0	44.5	55.5	100.0
Public administration and defence	9.0	*6.6	15.5	57.8	*42.2	100.0
Community services	18.2	23.8	42.0	43.3	56.7	100.0
Recreation, personal and other services	7.6	11.9	19.5	39.1	60.9	100.0
Total	108.3	123.0	231.3	46.8	53.2	100.0

TABLE 2.5 PERSONS WHO HAVE BEEN INJURED AT WORK IN THE LAST 12 MONTHS: WHETHER APPLIED FOR WORKERS' COMPENSATION BENEFITS BY OCCUPATION, NSW, OCTOBER 1993

<i>Occupation</i>	<i>Number ('000)</i>			<i>Proportion (per cent)</i>		
	<i>Applied</i>	<i>Did not apply</i>	<i>Total</i>	<i>Applied</i>	<i>Did not apply</i>	<i>Total</i>
Managers and administrators	*2.6	8.3	10.9	*23.6	76.4	100.0
Professionals	7.7	17.2	24.9	30.9	69.1	100.0
Para-professionals	*6.2	10.8	16.9	*36.4	63.6	100.0
Tradespersons	21.6	34.2	55.8	38.6	61.4	100.0
Clerks	14.6	15.5	30.1	48.4	51.6	100.0
Sales and personal service workers	11.3	11.0	22.4	50.6	49.4	100.0
Plant and machine operators, and drivers	17.0	7.8	24.8	68.5	31.5	100.0
Labourers and related workers	27.5	18.1	45.6	60.3	39.8	100.0
Total	108.3	123.0	231.3	46.8	53.2	100.0

TABLE 2.6 INJURED PERSONS WHO DID NOT APPLY FOR WORKERS' COMPENSATION: MAIN REASON WHY THEY DID NOT APPLY FOR WORKERS' COMPENSATION, NSW, OCTOBER 1993

<i>Main reason did not apply for workers' compensation</i>	<i>Number ('000)</i>	<i>Proportion (per cent)</i>
Self-employed—not eligible	17.7	14.4
Minor injury/ not necessary	64.3	52.3
Not aware of workers' compensation	*3.3	*2.6
Afraid of possible retrenchment	10.0	8.1
Did not think eligible	13.7	11.1
Concerned about what others might think	*3.6	*2.9
Other	10.6	8.6
Total	123.0	100.0

TABLE 2.7 INJURED PERSONS WHO DID NOT APPLY FOR OR RECEIVE ANY WORKERS' COMPENSATION BENEFITS: OTHER SOURCES OF ASSISTANCE SOUGHT, NSW, OCTOBER 1993

<i>Other sources of assistance</i>	<i>Number ('000)</i>	<i>Proportion (per cent)</i>
Sought assistance—		
Personal accident/health insurance	11.6	7.8
Medicare	32.0	21.5
Dept. of Social Security—sickness/other benefits	*5.5	*3.7
Employer—regular sick leave	29.5	19.8
Other	9.6	6.4
<i>Total who sought assistance (a)</i>	<i>75.8</i>	<i>50.6</i>
Did not seek any assistance	73.4	49.4
Total	149.1	100.0

(a) As persons may report more than one source, categories will not add to the total.

TABLE 2.8 PERSONS WHO HAVE BEEN INJURED AT WORK IN THE LAST 12 MONTHS: WHO ADVISED THEM TO SEEK REHABILITATION ASSISTANCE, NSW, OCTOBER 1993

<i>Person who advised injured persons to seek rehabilitation assistance</i>	<i>Number ('000)</i>	<i>Proportion (per cent)</i>
Sought assistance—		
Employer	20.4	8.8
Doctor	36.1	15.6
Insurer	*5.4	*2.4
Workers Union	*3.9	*1.7
Other	7.1	3.1
<i>Total persons who received advice (a)</i>	<i>59.1</i>	<i>25.6</i>
No advice necessary/received	172.2	74.5
Total	231.3	100.0

(a) Total will not add as person may have sought advice from different people.

TABLE 2.9 PERSONS WHO HAVE BEEN INJURED AT WORK IN THE LAST 12 MONTHS: TYPES OF REHABILITATION ASSISTANCE RECEIVED, NSW, OCTOBER 1993

<i>Types of rehabilitation assistance received</i>	<i>Number ('000)</i>	<i>Proportion (per cent)</i>
Sought assistance—		
Employer discussed injury with doctor/therapist	18.4	8.0
Training at TAFE/college for another job	*0.9	*0.4
Training at work place for another job	*1.2	*0.5
Help from a rehabilitation agency	13.6	5.9
Modified work duties (temporary or permanent)	26.7	11.6
Modified working hours (temporary or permanent)	10.8	4.7
Provided with special equipment	*5.3	*2.3
Other	*6.1	*2.6
<i>Total persons who received assistance (a)</i>	<i>62.4</i>	<i>27.0</i>
No assistance necessary/received	168.9	73.0
Total	231.3	100.0

(a) Total will not add as person may have received more than one type of rehabilitation assistance.

EXPLANATORY NOTES

Introduction

This publication contains results from a survey of work-related injuries and illnesses which was conducted throughout New South Wales in October 1993 as a supplement to the ABS Australia-wide Monthly Population Survey (MPS). This supplementary survey was conducted at the request of the WorkCover Authority of New South Wales.

2. The aim of the survey was to collect data on the level of awareness of workers to their rights to claim workers' compensation when injured at work, to quantify the level to which workers' compensation is not sought by those injured at work, to determine the reasons for not claiming workers' compensation when eligible to do so and also to determine the extent to which rehabilitation has been undertaken by injured workers.

Survey methodology

3. The survey was conducted using all the private dwellings (houses, flats, etc.) included in the MPS for New South Wales. The MPS was conducted during the two weeks commencing Monday, 12 October 1993.

4. Work-related Injuries and Illnesses questionnaires were delivered to the selected households by MPS interviewers, for completion by respondents who were in scope (refer paragraph 6) and then return by mail.

5. Information was sought from approximately 8,800 persons of whom approximately 7,100 (80%) responded. Examination of successive waves of responses did not indicate any serious problem of non-response bias. Special estimation procedures were employed to reduce the effect of non-response.

Scope

6. The survey conducted included all persons aged 15 years and over who were either currently working or had worked, for at least two weeks or more, in the last 12 months, except:

- (a) visitors to the dwelling selected;
- (b) members of the permanent defence forces;
- (c) certain diplomatic personnel of overseas governments, customarily excluded from censuses and surveys;
- (d) overseas residents in Australia; and
- (e) members of non-Australian defence forces (and their dependants) stationed in Australia.

7. Residents of other non-private dwellings such as hospitals, motels and jails (included in the MPS) were excluded from this survey.

Definitions

8. *Currently employed persons* includes:

- (a) persons aged 15 and over who worked for one hour or more for pay, profit or commission in a job or business, or on a farm (comprising employees, employers and self-employed persons); or
- (b) were employees who had a job but were not at work and were: on paid leave; on leave without pay for less than four weeks at the time of the survey; stood down without pay because of bad weather or plant breakdown at their place of employment for less than four weeks at the time of survey; on strike or locked out; on workers' compensation; and expected to be returning to their job; or receiving wages or salary while undertaking full-time study; or
- (c) were employers or self-employed persons who had a job business or farm but were not at work.

9. *Injured persons* refers to persons suffering from work-related accidents and/or illnesses. Work-related accidents include injuries resulting from accidents at place of work, while commuting to or from work, during work breaks or outside place of work but while on work duty. These could include, sprains, cuts, bruises, fractures, etc. Work-related illnesses include all illnesses contracted due to work, for example, industrial deafness, repetitive strain injuries (RSI), hernias and skin diseases.

10. *WorkCover Scheme* is the NSW workers' compensation system established under the workers' Compensation Act 1987 and associated legislation.

11. *Comcare* is the Commonwealth Commission established to administer safety rehabilitation and compensation for Commonwealth employees.

12. *Type of injury* is based on the 'Type of Occurrence Classification System', produced by Worksafe Australia, which is the Australian standard for recording occupational injuries and diseases.

Estimation procedure

13. Estimates derived from this survey are obtained in two stages. In the first stage, adjustment of non-response was carried out based on the demographic composition of the MPS sample, as well as on analysis of the effect of reminder action on the responses obtained.

14. The second stage is a complex ratio estimation procedure, which ensures that the survey estimates conform to an independently estimated distribution of the population by age, sex and part of state, rather than to the age, sex and part of state distribution among respondents.

Reliability of estimates

15. Estimates in this publication are subject to sampling and non-sampling errors. For information on these sources of error and the reliability of the estimates, refer to the Technical Note on Data Reliability overleaf.

Related publications

16. The ABS produces a wide range of publications on social and demographic statistics. Other ABS publications which relate to this survey topic include:

Employment Injuries, New South Wales, 1982-83 to 1984-85 (6311.1)

Employment Injuries, Queensland, 1991-92 (6301.3)

Industrial Accidents, Western Australia, 1987-88 (6301.5)

Employment Injuries, Tasmania, 1991-92 (6301.6)

Additional data

17. The ABS can make available information from this survey which is not published. This includes data relating to:

- competency of spoken English
- employment status at time of injury
- place where the injury occurred
- time off work required as a result of injury
- effect of injury on work duties.

18. In general, a charge is made for providing unpublished information. For further information please phone Jill Tomlinson on (02) 268 4388 or contact the ABS as shown in the Inquiries Section at the front of this publication.

Symbols and other usages

— nil or rounded to zero

- * estimate is subject to a relative standard error of 25 per cent or more. (See the Technical Note on Data Reliability overleaf.)

19. Figures have been rounded, and discrepancies may occur between sums of the component items and totals shown.

20. In some tables, an individual person may fall into more than one of the listed categories. The sum of the numbers in all categories may therefore exceed the total number of persons shown in the table.

TECHNICAL NOTE ON DATA RELIABILITY

Sources of Error

There are a number of possible sources of error in sample surveys and these can be classified into two types: sampling error and non-sampling error.

Non-sampling errors

2. Non-sampling errors may arise as a result of errors in the reporting, recording or processing of the data and can occur even if there is a complete enumeration of the population. Non-sampling errors can be introduced through: inadequacies in the questionnaire; non-response; inaccurate reporting by respondents; errors in the application of survey procedures; incorrect recording of answers; and, errors in data entry and processing.

3. It is difficult to measure size of the non-sampling errors and the extent of these errors could vary considerably in significance from survey to survey and from question to question. However, every effort is made in the design of the survey and development of survey procedures to minimise the effect of these errors.

Sampling errors

4. Sampling error is the error which occurs by chance because the data were only obtained from a sample, not the entire population.

Standard errors

5. One measure of the variability of estimates which occurs as a result of surveying only a sample of the population is the standard error (SE). There are about two chances in three that a survey estimate is within one standard error of the figure that would have been obtained if all persons had been included, and about nineteen chances in twenty that it is within two standard errors. That is, if all persons had been included, there are 19 chances in 20 that the figure obtained would have been in the range—

$$x - 2 SE(x) \text{ to } x + 2 SE(x)$$

(where x is the estimate)

The standard error of an estimate can be obtained from the table below. Linear interpolation should be used to calculate the standard error of estimates falling between the sizes of estimates listed in the table

Relative standard errors

6. The standard error can also be expressed as a percentage of the estimate and this is known as the relative standard error (RSE). The RSE is determined by dividing the standard error of an estimate $SE(x)$ by the estimate x and expressing it as a percentage. That is—

$$RSE(x) = \frac{100 SE(x)}{x}$$

(where x is the estimate)

7. Proportions and percentages formed from the ratio of two estimates are also subject to sampling error. The size of the error depends on the accuracy of both the numerator and the denominator. The formula for the RSE of a proportion or percentage is—

$$RSE\left(\frac{x}{y}\right) = \sqrt{[RSE(x)]^2 + [RSE(y)]^2}$$

8. For all tables in this publication, only estimates with relative standard errors of 25 per cent or less, and percentages based on such estimates, are considered sufficiently reliable for most purposes. However, estimates and percentages with larger relative standard errors have been included and are preceded by an * to indicate that they are subject to high standard errors and should be used with caution.

9. The table below provides a guide for the calculations of standard errors and relative standard errors for the estimates in this publication.

STANDARD ERRORS OF ESTIMATES OF PERSONS, NEW SOUTH WALES, OCTOBER 1993

Size of estimate (persons)	Standard error (number)	Relative standard error (per cent)
500	470	94.1
1,000	670	66.9
1,100	700	63.8
1,200	730	61.0
1,300	760	58.6
1,400	790	56.5
1,500	820	54.5
1,600	840	52.8
1,700	870	51.2
1,800	890	49.7
1,900	920	48.3
2,000	940	47.1
2,100	960	45.9
2,200	990	44.8
2,300	1,000	43.8
2,400	1,050	42.8
2,500	1,050	41.9
3,000	1,150	38.1
3,500	1,250	35.2
4,000	1,300	32.8
4,500	1,400	30.8
5,000	1,450	29.1
6,000	1,600	26.4
8,000	1,800	22.6
10,000	2,000	20.0
20,000	2,700	13.6
30,000	3,250	10.8
40,000	3,650	9.2
50,000	4,000	8.0
10,0000	5,300	5.3
20,0000	7,000	3.5
30,0000	8,200	2.7
40,0000	9,100	2.3
50,0000	9,900	2.0
1,000,000	12,700	1.3
2,000,000	16,100	0.8





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