

# Appendix 2: Standard errors and relative standard errors

Table A2.1: Prevalence (P), standard error (SE) and relative standard error (RSE) relating to totals, by sex, Western Australia, 1998

Population estimate ( <i>'000s</i> )	Western Australia total			Males			Females		
	P (%)	SE ( <i>'000</i> )	RSE (%)	P (%)	SE ( <i>'000</i> )	RSE (%)	P (%)	SE ( <i>'000</i> )	RSE (%)
1,400	95.7	15	1.1	—	—	—	—	—	—
1,200	82.1	28	2.3	—	—	—	—	—	—
1,000	68.4	34	3.4	—	—	—	—	—	—
750	51.3	36	4.8	—	—	—	—	—	—
600	41.0	36	6.0	82.0	20	3.3	82.2	17	2.8
500	34.2	35	6.9	68.3	24	4.7	68.5	20	4.0
400	27.4	32	8.1	54.6	25	6.3	54.8	22	5.4
300	20.5	29	9.8	41.0	25	8.3	41.1	21	7.1
200	13.7	25	12.5	27.3	23	11.3	27.4	19	9.7
100	6.8	18	18.3	13.7	17	17.5	13.7	15	14.9
90	6.2	18	19.5	12.3	17	18.6	12.3	14	15.9
80	5.5	17	20.7	10.9	16	19.9	11.0	14	17.0
70	4.8	16	22.2	9.6	15	21.4	9.6	13	18.3
60	4.1	14	24.0	8.2	14	23.3	8.2	12	19.9
50	3.4	13	26.4	6.8	13	25.7	6.8	11	22.0
40	2.7	12	29.5	5.5	12	28.9	5.5	10	24.7
30	2.1	10	34.8	4.1	10	33.6	4.1	9	28.8
20	1.4	9	42.7	2.7	8	41.5	2.7	7	35.5
10	0.7	6	60.6	1.4	6	59.1	1.4	5	50.5

Note: Light shading indicates caution in using estimates; darker shading indicates unreliable for most practical purposes.

Since the estimates in this publication are based on information obtained from occupants of sample dwellings, they are subject to sampling variability; that is, they may differ from the figures that would have been produced if all dwellings had been included in the survey. One measurement of the likely difference is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of dwellings was included. There are about two chances in three that a sample estimate will differ by less than one SE from the figure that would have been obtained if all dwellings had been included, and about 19 chances in 20 that the difference will be less than two SEs. Another measure of the likely difference is the relative standard error (RSE), which is obtained by expressing the SE as a percentage of the estimate.

Space does not allow for the separate indication of the SEs of all estimates in this publication. A table of SEs and RSEs for estimates of numbers of persons is given in Table A2.1 and A2.2. These figures will not give a precise measure of the SE for a particular estimate but will provide an indication of its magnitude. Based on these indicative SEs, results marked with an asterisk in the tables are associated with an RSE of greater than 50%. An example of the calculation and use of SEs follows (ABS 1997).

Table 2.6 shows that in 1998 the survey estimated that 69% of population aged 14 years and over in Western Australia had used tobacco at least once in their lifetime, or 1,000,000 persons. The estimate is relatively close to the prevalence value of 68.4% as shown in Table A2.1. The standard error for this estimated prevalence is 34,000 which means that there are

about two chances in three (67%) that the estimated prevalence of smoking would fall within one SE of true population prevalence. In other words, the estimated prevalence is within plus or minus one SE of the estimated of 1,000,000 persons in Western Australia, that is somewhere between 966,000 and 1,034,000 persons. Similarly, we are 95% confident that the estimated number of persons aged 14 years and over who had used tobacco at least once in their life in Western Australia will be between 932,000 and 1,068,000 persons.

**Table A2.2: Prevalence (P), standard error (SE) and relative standard error (RSE) relating to age groups, Western Australia, 1998**

Population estimate ('000s)	Age groups												RSE (%)
	14-19			20-29			30-39			40+			
	P (%)	SE ('000)	RSE (%)	P (%)	SE ('000)	RSE (%)	P (%)	SE ('000)	RSE (%)	P (%)	SE ('000)	RSE (%)	
700	—	—	—	—	—	—	—	—	—	96.2	12	1.8	—
600	—	—	—	—	—	—	—	—	—	82.5	25	4.1	—
500	—	—	—	—	—	—	—	—	—	68.7	30	6.1	—
450	—	—	—	—	—	—	—	—	—	61.9	32	7.1	94
400	—	—	—	—	—	—	—	—	—	55.0	33	8.1	83
350	—	—	—	—	—	—	—	—	—	48.1	33	9.3	73
300	—	—	—	—	—	—	—	—	—	41.2	32	10.7	62
250	—	—	—	87.8	10	3.9	86.5	7	2.9	34.4	31	12.4	52
200	—	—	—	70.2	13	6.7	69.2	10	4.9	27.5	29	14.6	41
150	93.1	4	2.4	52.7	15	9.8	51.9	11	7.1	20.6	26	17.6	31
100	62.1	7	6.7	35.1	14	14.1	34.6	10	10.1	13.7	23	22.5	20
90	55.9	7	7.7	31.6	14	15.2	31.1	10	10.9	12.4	22	23.9	18
80	49.6	7	8.7	28.1	13	16.6	27.7	9	11.9	11.0	20	25.6	16
70	43.4	7	9.8	24.6	13	18.1	24.2	9	13.0	9.6	19	27.6	14
60	37.2	7	11.2	21.1	12	20.0	20.8	9	14.4	8.2	18	30.0	12
50	31.0	6	12.9	17.6	11	22.4	17.3	8	16.1	6.9	17	33.1	10
40	24.8	6	15.0	14.0	10	25.6	13.8	7	18.3	5.5	15	37.3	8
30	18.6	5	18.0	10.5	9	30.2	10.4	6	21.6	4.1	13	43.4	6
20	12.4	5	22.9	7.0	8	37.7	6.9	5	26.9	2.7	11	53.5	4
10	6.2	3	33.5	3.5	5	54.2	3.5	4	38.8	1.4	8	76.2	2
5	3.1	2	48.2	1.8	4	77.4	1.7	3	55.4	—	—	—	1

Note: Light shading indicates caution in using estimates; darker shading indicates unreliable for most practical purposes.