



Technical Supplement

Healthcare in Focus
how NSW compares internationally

Annual performance report: December 2010

Summary

This supplement to *Healthcare in Focus: how NSW compares internationally*, the Bureau of Health Information's inaugural annual performance report, describes the methods and technical terms used to compute the descriptive statistics and performance indicators reported. This supplement is technical in nature, and is intended for audiences interested in the creation of health information.

One of the Bureau's Determination of Functions set out by the Minister for Health in November 2009, is to "publish reports benchmarking the performance of the NSW public health system with comparable systems". *Healthcare in Focus* examines the performance of NSW relative to other jurisdictions in Australia or abroad.

To produce the report, the Bureau has relied on three sources of data:

- Health and healthcare performance data already published by governments. The source of these data is indicated when used.
- The 2010 Commonwealth Fund International Health Policy Survey,¹ which is conducted each year by the Commonwealth Fund, a United States philanthropic organisation. The methods used to conduct that survey are described in this report.
- The Organisation for Economic Co-operation and Development (OECD) data library. These data reflect health system expenditure, capacity and achievements in OECD member countries.²

The Bureau used SAS / STAT™ software³ for the statistical analysis of data published in the report.

2010 Commonwealth Fund International Health Policy Survey

Each year, the Commonwealth Fund, a philanthropic organisation in the United States, commissions an international survey to support public benchmarking of performance in comparable OECD nations. The Bureau invested in that survey to ensure the number of NSW participants was sufficient for robust estimates to compare the performance of the NSW health system to 10 other countries.

The 2010 Commonwealth Fund International Health Policy (IHP) Survey was conducted by Harris Interactive Inc. for the Commonwealth Fund. Telephone interviews were conducted with representative samples of more than 19,000 adults age 18 and over in Australia, Canada, France, Germany, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States. Fieldwork in all countries took place between March 3 and June 14, 2010.

The following description of the methods used to conduct the survey is based on the methods report prepared by Harris Interactive.⁴

The survey assessed public confidence in the health care system including access to care, cost, and quality of care.⁴ Specifically, the survey explored the following:

- The public's overall views about and confidence in the health care system;
- Patients' access to primary and preventive care, including promptness of attention, such as the availability of same-day appointments, evening and weekend appointments, and emergency room waiting times;

- Patients' overall health and medical conditions;
- Patients' relationship with their regular doctor, including experience with healthcare co-ordination;
- Patients' use of, and experience with, specialists;
- Patients' experience of care in hospitals and emergency departments;
- Patients' experiences with medication and medical errors, and;
- Health care insurance coverage, affordability of care, experience of administrative / financial burdens, and out-of-pocket costs.⁴

Sample design, data collection and survey procedures⁴

Sampling frame, sampling strategy, sample size and response rates for each participating country are summarised in [Table 1, Appendix 1](#).

The survey used a common questionnaire that was translated and adjusted for country-specific wording as needed. For data collection in Australia, Germany, New Zealand, and the United Kingdom, web-based computer-assisted telephone interviewing (CATI) was used. In Canada, France, the Netherlands, Norway, Sweden, Switzerland and the United States, traditional CATI was used.

The advantages of both CATI systems are that they permit online data entry and editing of telephone interviews. Questionnaires are programmed into the system and the following are assessed:

- 1) Question and response series
- 2) Skip patterns
- 3) Question rotation
- 4) Range checks
- 5) Mathematical checks
- 6) Consistency checks
- 7) Special edit procedures.

Telephone interviewing procedures⁴

Survey data collection for Canada and the United States was conducted by a professional interviewing centre in southern California.

Interviewing in Australia, France, Germany, the Netherlands, New Zealand, Norway, Sweden, Switzerland and the UK was conducted by professional interviewing centres located in each country.

In order to manage the sample efficiently and to maintain as high a response rate as possible within timeline and budget guidelines, the following parameters were established in all countries and adhered to in most: (a) only the necessary amount of sample was purchased and used so that all sample records were used efficiently and completely before being abandoned for a fresh sample (b) all sample records were called eight times or more before being abandoned as unusable, and (c) where it

was legal or culturally acceptable, attempts were made to convert soft refusals (e.g. by having more experienced and successful interviewers repeat calls to numbers initially noted as a refusal).

Editing and cleaning the data⁴

The data processing staff at Harris Interactive performed computerised edits and additional cleaning for the entire data set. Their edit programs act as a verification of the skip instructions and other data checks that are written into the CATI program. The edit programs list any errors by case number, question number, and type. These are then resolved by senior electronic data processing personnel, who inspect the original file and make appropriate corrections. Complete records are kept of all such procedures.

Survey research is also susceptible to errors such as data handling errors and interviewer recording errors. The procedures followed by Harris Interactive described above are intended to keep errors to a minimum.

Weighting the data⁴

Final samples were weighted to reflect the distribution of the adult population in each country. The characteristics and population used to calculate weights for each country are summarised in [Table 2, Appendix 1](#). Australian data were weighted by education, age, sex, rurality and region, and were weighted to the Australian Bureau of Statistics population estimates for 2006. [Table 3 in Appendix 1](#) shows the weighted and unweighted proportions for the Australian data.

The Bureau received de-identified unit record data from the survey. Bureau staff verified the performance estimates calculated by Harris Interactive for the selected indicators used in the Bureau's report.

Reliability of survey estimates

The results from any survey are subject to sampling variation. The magnitude of this variation is measurable and is affected by the number of interviews involved.

The response rate for the IHP 2010 survey varies from 13% in Norway to 54% in Switzerland ([Table 1, Appendix 1](#)). A high response rate may reduce the risk of bias and increase the likelihood that the sample is representative of the population. However, many studies^{5,6,7} have looked at the difference in survey estimates resulting from exhaustive effort to increase response rate. These studies concluded that:

- High response rate did not substantially affect the level of data representativeness
- It is not valid to focus on response rates alone in determining the quality of survey data
- Cost-effectiveness of a high response rate is poor.

In 2007, Statistics Canada included some questions from the IHP 2007 in its Canadian Survey of Experiences with Primary Health Care and achieved a 76% response rate compared to 25% for the IHP 2007 survey. Sutherland and Leatherman compared estimates from both surveys.⁸ There were no substantial differences between the estimates from the two surveys.

Confidence intervals

According to Schoen et al.⁹ the margin of sampling error for country averages in the IHP 2010 is approximately plus or minus 2% for Australia, Canada, Sweden and the United States. It is estimated to be plus or minus 3% for other countries at the 95% confidence level.

The Bureau calculated confidence intervals around estimates for safety indicators and those on self-reported chronic conditions, using the SAS / STAT™ software procedure SURVEYMEANS.³ The results are shown in [Table 4 and 5, Appendix 1](#). The width of confidence intervals of the estimates, for questions asked of all adults, varied from 2% to 8%. Estimates from questions asked of subsets of the participants have wider confidence intervals.

Organisation for Economic Co-operation and Development (OECD) data library

The definitions of performance indicators used by the OECD are available at www.ecosante.org/oecd.htm

Data for NSW were obtained for comparison with OECD data from the OECD website in two ways. The source of data is shown under each graph.

Firstly, some performance measures have previously been calculated by the Australian Institute of Health and Welfare (AIHW) for Australia as a whole for inclusion in the OECD website. The Bureau commissioned the AIHW to calculate performance measures for NSW and for the rest of Australia using the same methods. Mortality and PYLL rates were age standardised, using the OECD standard population 1980 ([Table 1, Appendix 2](#)) to enable fairer comparisons between NSW and the rest of Australia and other countries. These indicators included:

- Mortality for all causes and selected specific causes of death
- Potential years of life lost (PYLL) for all causes and selected specific causes of death
- Health care expenditure.

Secondly, the Bureau calculated performance

measures involving procedures and hospitalisations for NSW, using data from NSW Health data collections accessed from the Health Outcomes Information Statistical Toolkit (HOIST), Centre for Epidemiology and Research and NSW Department of Health. Data for the Caesarean section rate were obtained from the NSW Midwives Data Collection; data for the other indicators were obtained from the NSW Admitted Patient Data Collection. The following rates were calculated (details summarised in [Table 3, Appendix 2](#)).

- Caesarean sections per 1,000 live births
- Hip and knee replacements per 100,000 population
- Chronic Obstructive Pulmonary Disease per 100,000 population
- Lower limb amputations per 100,000 population, people aged 15 years and older, age and sex standardised to the OECD 2005 standard population ([Table 2, Appendix 2](#)).

For these indicators, OECD data definitions were used ([Table 3, Appendix 2](#)). Where relevant, the OECD standard population was used to support fair comparisons ([Table 2, Appendix 3](#)).

Appendix 1: Commonwealth Fund Survey 2010

Table 1: Sample frame, sampling strategy, sample size and response rate by country, Commonwealth Fund Survey 2010⁴

Country	Language(s)	Sampling frame	Sampling strategy*	Sample size	Response rate
Australia	English	Listed residential phone numbers from the most up to date electronic white pages national database (EWP).	Multi-stage sampling, with lists of numbers drawn randomly for locations.	3552	26%
Canada	English & French	Random Digit Dialing sample supplied by ASDE Survey Sampler Inc.	Random respondent selection within the household.	3302	29%
France	French	listed residential phone numbers from the most current electronic white pages database (WEGNER white pages).	Calls were made by randomly selecting telephone numbers.	1402	21%
Germany	German	Random Digit Dialing created using a simple Excel sheet to generate a list of 100,000 valid telephone numbers.	Randomly selecting telephone numbers.	1005	20%
Netherlands	Dutch	Fieldwork was conducted by IntoMart GfK using a random sample of residential phone numbers listed in the phone book (Cdfongids).	A stratification procedure was used based on province/region.	1001	21%
New Zealand	English	Listed residential phone numbers from the most up to date electronic white pages national database (EWP).	Multi-stage sampling, with lists of numbers drawn randomly for locations.	1000	30%
Norway	Norwegian	Fieldwork was conducted by TNS using the Lindorff population base.	Selection for the RDD sample involved a two-stage random sampling approach.	1058	13%
Sweden	Swedish	Fieldwork was conducted by IB-IMRI using the PAR registry list of the total population. Telephone numbers were matched via a telephone number index.	The random sample was based on an index of the total population.	2100	42%
Switzerland	German, French & Italian	Fieldwork was conducted by MIS Trend using the Swiss Household sample, based on landline directories, prepared by the Swiss Federal Office of Statistics.	A stratified random sample, based on groupings of cantons, according to the population proportions, was used.	1306	54%
United Kingdom (England, Scotland, Wales and Northern Ireland)	English	The Random Digit Dialing sample was created using a simple Excel sheet to generate a list of 100,000 valid UK telephone numbers.	Telephone numbers were drawn randomly from generated list.	1511	24%
United States (excluding Alaska and Hawaii)	English & Spanish	The study relied upon a stratified sampling process to produce a representative sample of persons in telephone households.	Households were selected through computerised RDD provided by Survey Sampling International (SSI).	2501	26%

* Within a household, the person with the most recent birthday was selected to participate in the survey.

Table 2: Characteristics and population used for weighting by country, Commonwealth Fund Survey 2010⁴

Country	Weighted by
Australia	Education, age, sex, rurality and region. Weighted to the Australian Bureau of Statistics Population Estimates for 2006.
Canada	Education, age, sex, knowledge of official language and region to reflect the demographic composition of the 2006 Canadian census.
France	Age, sex, region, and education to reflect the distribution of the National Institute for Statistics and Economic Studies, France, 2007.
Germany	Age, sex, education, region, and household size according to the Statistisches Bundesamt 2006.
Netherlands	Age, sex, region, and education according to the Statistical Yearbook of the Netherlands 2004.
New Zealand	Age, sex, education and region based on targets derived from Statistics New Zealand's 2006 census data.
Norway	Age, sex, education and region based on targets derived from Statistics Norway 2008 (education) & 2010 (age and region).
Sweden	Age, sex, education and region based on targets derived from Statistics Sweden 2008/2009.
Switzerland	Age, sex, education, region, and household size based on targets derived from the Federal Statistical Office, Neuchâtel 2008. (The target for education is from Eurostat.)
United Kingdom (England, Scotland, Wales and Northern Ireland)	Age, sex, region, and education based on targets derived from the 2001 United Kingdom Office of National Statistics census data.
United States (excluding Alaska and Hawaii)	Age, sex, race, education, region, and household size to reflect the demographic composition of the United States population using the March 2009 Current Population Survey from the United States Census Bureau. A pre-weighting value for number of telephone lines was also used.

Table 3: Comparison of weighted and unweighted data for Australia, Commonwealth Fund Survey 2010⁴

	Base	Weighted	Unweighted
		3552	3552
Sex			
Male		49	34
Female		51	66
Age			
18-24		10	4
25-34		18	9
35-49		27	23
50-64		25	30
65 plus		20	34
Education			
High School or less		54	50
Some college		20	22
College graduate or higher		24	26
Rurality*			
Major city		66	63
Other		34	37
Region			
New South Wales		33	44
Victoria		25	20
Queensland		20	15
South Australia		7	7
Western Australia		10	9
Tasmania		2	2
Northern Territory		1	-
Australian Capital Territory		2	2

* Also called urbanicity.

Table 4: Reported occurrence of medical mistakes: Percentage and 95% confidence intervals of respondents who answered “yes” to questions relating to medical safety in the Commonwealth Fund Survey 2010. All adults who participated in the survey were asked these questions. These indicators are included in Chapter 3: Safety¹¹

Country	In the past two years, was there a time you thought a medical mistake was made in your treatment or care?	In the past 2 years, have you experienced delays in being notified about abnormal test results?	In the past 2 years, have you been given incorrect results for a diagnostic or lab test?	In the past 2 years, have you ever been given the wrong medication or wrong dose by a doctor, nurse, hospital or pharmacist?
Canada	8 (6, 9)	10 (8, 11)	4 (3, 5)	6 (5, 7)
France	6 (4, 8)	3 (2, 4)	3 (2, 4)	9 (6, 11)
Germany	6 (4, 8)	5 (3, 7)	2 (1, 3)	2 (1, 3)
Netherlands	5 (3, 6)	4 (2, 5)	3 (2, 4)	4 (3, 6)
New Zealand	6 (4, 7)	6 (4, 9)	2 (1, 4)	5 (3, 6)
Norway	11 (8, 13)	9 (6, 12)	3 (2, 5)	8 (6, 10)
NSW	10 (8, 11)	6 (4, 7)	3 (2, 4)	5 (4, 6)
Rest of Australia	8 (6, 9)	5 (4, 7)	2 (1, 3)	4 (3, 6)
Sweden	6 (5, 7)	8 (6, 10)	2 (1, 3)	5 (3, 6)
Switzerland	8 (6, 10)	2 (1, 4)	3 (2, 5)	5 (3, 7)
United Kingdom	3 (2, 4)	6 (4, 8)	3 (1, 4)	2 (1, 3)
United States	10 (8, 11)	9 (7, 10)	5 (4, 6)	6 (5, 8)

Table 5: Reported prevalence of chronic disease: Percentage and 95% confidence intervals of respondents who answered “yes” to questions relating to health status in the Commonwealth Fund Survey 2010. All adults who participated in the survey were asked these questions. These indicators are included in Chapter 1: Setting the scene¹¹

Country	Have you ever been told by a doctor that you have:								
	Arthritis	Asthma	Cancer	Depression	Diabetes	Heart disease	Hyper-tension	High cholesterol	At least one condition
Canada	21 (20, 23)	13 (11, 14)	6 (5, 7)	16 (14, 17)	8 (7, 9)	7 (6, 8)	23 (21, 24)	21 (19, 22)	58 (56, 60)
France	10 (7, 13)	14 (11, 17)	6 (4, 8)	21 (17, 24)	7 (5, 9)	10 (7, 13)	24 (20, 28)	21 (17, 24)	60 (56, 64)
Germany	10 (7, 12)	8 (6, 10)	6 (4, 8)	8 (6, 10)	9 (7, 11)	9 (7, 11)	25 (22, 28)	19 (17, 22)	49 (46, 53)
Netherlands	8 (6, 10)	12 (10, 14)	6 (4, 7)	18 (15, 21)	7 (5, 9)	8 (6, 10)	25 (22, 29)	18 (16, 21)	56 (52, 60)
New Zealand	22 (19, 25)	14 (11, 17)	9 (7, 10)	15 (12, 18)	7 (5, 9)	10 (8, 12)	26 (23, 29)	23 (20, 26)	62 (58, 66)
Norway	15 (12, 18)	17 (14, 20)	8 (6, 10)	16 (13, 19)	7 (5, 10)	10 (8, 13)	25 (21, 28)	22 (19, 25)	58 (54, 62)
NSW	27 (24, 29)	17 (14, 19)	9 (8, 11)	22 (19, 24)	10 (8, 12)	9 (7, 10)	30 (27, 32)	27 (24, 30)	67 (63, 70)
Rest of Australia	27 (25, 29)	15 (13, 17)	9 (8, 11)	20 (18, 22)	8 (7, 10)	9 (7, 10)	26 (24, 29)	23 (21, 25)	64 (62, 67)
Sweden	14 (12, 15)	12 (11, 14)	7 (5, 8)	17 (15, 19)	8 (6, 9)	9 (8, 10)	26 (24, 28)	18 (16, 20)	57 (54, 60)
Switzerland	7 (5, 9)	10 (8, 12)	5 (4, 6)	11 (9, 14)	5 (3, 6)	7 (6, 9)	21 (18, 24)	18 (16, 21)	48 (45, 52)
United Kingdom	11 (9, 13)	6 (5, 8)	5 (4, 7)	8 (6, 9)	10 (8, 12)	6 (5, 8)	18 (16, 21)	16 (13, 18)	43 (40, 46)
United States	25 (23, 26)	12 (11, 14)	9 (7, 10)	19 (17, 20)	11 (9, 12)	11 (9, 12)	30 (27, 32)	31 (29, 33)	64 (61, 66)

Appendix 2: OECD

The following standard population was used to calculate age-standardised rates for mortality and for Potential years of Life Lost (PYLL):

Table 1: Total OECD Population 1980²

Age (years)	Population
0	1.62
1-4	6.32
5-9	8.09
10-14	8.3
15-19	8.56
20-24	8.2
25-29	7.81
30-34	7.63
35-39	6.31
40-44	5.83
45-49	5.56
50-54	5.46
55-59	5.08
60-64	3.89
65-69	3.88
70-74	3.18
75-79	2.26
80-84	1.23
85+	0.77
Total	100

The following standard population was used to calculate age and sex standardised amputation rates:

Table 2: Standard OECD Population 2005²

Standard population OECD 2005			
Age group	Male	Female	Total
15-19	40,625,795	38,773,417	79,399,212
20-24	41,743,145	40,258,194	82,001,339
25-29	41,941,848	40,948,668	82,890,516
30-34	43,389,484	42,704,755	86,094,239
35-39	43,371,817	42,895,601	86,267,418
40-44	43,161,119	43,109,483	86,270,602
45-49	40,248,518	40,649,038	80,897,556
50-54	36,427,644	37,364,408	73,792,052
55-59	33,380,411	34,689,310	68,069,721
60-64	26,289,839	28,254,493	54,544,332
65-69	22,346,079	25,279,333	47,625,412
70-74	18,074,327	22,236,819	40,311,146
75-79	13,607,727	19,097,765	32,705,492
80-84	8,425,270	14,684,935	23,110,205
85+	5,282,533	12,504,426	17,786,959
Total	458,315,556	483,450,645	941,766,201

Table 3: Data source and other detailed information about health indicators calculated by the Bureau using OECD definition^{12,13}

Indicator	Data source	Year	Age group	Diagnosis code	Procedure code	NSW Population*	Notes
Caesarean sections per 1000 live births	MDC**	Calendar year 1998 to 2008	All	NA	NA	NA	Live birth is defined as weight more than 400 grams and gestational age more than 20 weeks. Multiple births are counted as single births.
Hip replacement procedures per 100,000 population	APDC***	Calendar year 2008	all age groups	NA	ICD 10: 1489, 1492 in any procedure field (up to 50)	30 June 2008	Same day admissions are excluded
Knee replacement procedures per 100,000 population	APDC	Calendar year 2008	all age groups	NA	ICD10: 1519, 1523, 1518 (49518-00, 49519-00), 1524 (49527-00) in any procedure field (up to 50)	30 June 2008	Same day admissions are excluded
Lower limb amputations due to diabetes per 100,000 population, people aged 15 years and older, age and sex standardised to the OECD 2005 standard population	APDC	Calendar year 2007	15 years and over	ICD-10-AM: E10-E14 in any diagnosis field	ICD 9: 84.10-84.19 equivalent to ICD10 44370-00, 44367-00, 44367-02, 44361-00, 44361-01, 44358-00, 44364-00, 44364-01, 44338-00 in any procedure field.	30 June 2007. The standard population is OECD 2005 (Table 2, appendix B)	Exclude trauma diagnosis codes S78.0, S78.1, S78.9, S88.0, S88.1, S88.9, S98.0, S98.1, S98.2, S98.3, S98.4, T05.3, T05.4, T05.5, T13.6 in any external cause field. Same day admissions are excluded.
Chronic obstructive pulmonary disease and bronchitis	APDC	Calendar year 2008	All age groups	ICD-10-AM, J40-J44, J47, in first diagnosis only	NA	30 June 2008	Same day admissions are excluded.

* Australian Bureau of Statistics population data (HOIST).

** MDC: NSW Midwives Data Collection (HOIST).

** APDC: Admitted Patients data Collection (HOIST).

References

1. The Commonwealth Fund. [2010 International Health Policy Survey](#) [online] 2010 [cited 26 November 2010]. Available from www.commonwealthfund.org/Content/Surveys/2010/Nov/2010-International-Survey.aspx
2. Organisation for Economic Cooperation and Development. [Health Data 2010](#) [online] 2010 [cited 26 November 2010]. Available from www.oecd-ilibrary.org/content/datacollection/health-data-en
3. SAS Institute. [The SAS System for Windows, version 9.1.3](#) Cary (NC). SAS Institute 2005. (Note: SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration).
4. Harris Interactive. [International Health Perspectives 2010: Methods Report](#). [Unpublished] 2010.
5. Lee S, Brown ER, Grant D, Belin TR, Brick JM. [Exploring nonresponse bias in a health survey using neighborhood characteristics](#). Am J Public Health. 2009 Oct; 99(10):1811-7
6. Davern M, McAlpine D, Beebe TJ, Ziegenfuss J, Rockwood T, Call KT. [Are lower response rates hazardous to your health survey? An analysis of three state telephone health surveys](#). Health Serv Res. 2010; Oct; 45(5 Pt 1):1324-44.
7. Bjertnaes OA, Iversen HH, Bukholm G. [International health policy survey in 11 countries: assessment of non-response bias in the Norwegian sample](#). BMC Health Serv Res. 2010; 10 (10):38.
8. Sutherland K, Leatherman S. [Quality of Healthcare in Canada: a chartbook](#). Ottawa: Canadian Health Services Research Foundation; 2008
9. Schoen C, Osborn R, Squires D, Doty M, Pierson R, Applebaum S. [How health insurance design affects access to care and costs, by income, in eleven countries](#). Health Affairs 2010. 29(12): 1-11
10. [Health Outcomes Information and Statistical Toolkit \(HOIST\)](#). Centre For Epidemiology and Research, Public Health Division, NSW Health Department
11. Bureau of Health Information. [Focus on Healthcare: how does NSW compare internationally](#). Sydney: Bureau of Health Information; 2010.
12. World Health Organization. [International Classification of Diseases, 9th revision](#). Geneva: WHO, 1977.
13. World Health Organization. [International Statistical Classification of Diseases and Related Health Problems, 10th revision](#). Geneva: WHO, 1992.

About the Bureau

The Bureau of Health Information was established by the NSW Government in 2009 as an independent, board-governed organisation. The Bureau aims to be the leading source of information on the performance of the public health system in NSW.

The Bureau's Board

- Professor Bruce Armstrong AM (Chair)
- Professor Jane Hall
- Mrs Liz Rummery AM
- Dr Don Weatherburn
- Ms Sue West
- Dr Diane Watson (Chief Executive)

The Bureau's Mission

The Bureau provides the community, healthcare professionals and the NSW Parliament with timely, accurate and comparable information about the performance of the NSW public health system in ways that enhance the system's accountability and inform efforts to increase its beneficial impact on the health and wellbeing of people in NSW.

To contact the Bureau of Health Information

Telephone: +61 2 8644 2100

Fax: +61 2 8644 2119

Email: enquiries@bhi.nsw.gov.au

Web: www.bhi.nsw.gov.au

Postal address:

PO Box 1770
Chatswood
New South Wales 2057
Australia

Business address:

Zenith Centre Tower A
821 Pacific Highway
Chatswood
New South Wales 2067
Australia

The Bureau of Health Information is a statutory health corporation. The conclusions in this report are those of the Bureau of Health Information and no official endorsement by the NSW Minister for Health, the NSW Department of Health or any other NSW statutory health corporation is intended or should be inferred.