3.6 Methodology and guide for users

Health Determinants Queensland reports on the prevalence of health determinant indicators of population subgroups in Queensland. In addition, this report includes a profile for each health service district (HSD) in Queensland detailing key sociodemographic data and health status estimates, using synthetic estimation methods. This methodology and guide for users is included in all chapters of this report.

Selection criteria for inclusion of indicators in this report

The inclusion and sequence of indicators is structured using the National Health Performance Framework (Table 3.18). This was chosen for consistency with national and state directions, to help the reader find indicators of interest to their area of expertise through the various chapters, and to assist in systematic identification of challenges and points for intervention. This Framework has three tiers; Health status and outcomes; Determinants of health; and Health system performance.

The focus of this report is health determinants. Limited health outcome indicators are also presented. The key health outcome indicators not reported in Health Determinants Queensland 2004 are included in Health Indicators for Queensland 2001 and other documents, where specific references to these publications are quoted throughout the text. Links between health determinants and health outcomes are provided. Indicators of health system performance are beyond the scope of this publication.

Indicators listed in this report were selected on the basis of the following criteria:

- nationally/internationally accepted core indicators (ie. complies with National Health Data Dictionary (NHDD) definitions or have been reported in a recognised publication)
- relevance to the Queensland/Australian public health policy context
- available sources contain reliable, integral, representative data for the particular population sub-group
- the set of indicators reflect a balance between determinants and outcomes, with limited overlap with Health Indicators for Queensland: Southern, Central and Northern Zones 2007-9
- the wording can be understood by people who are in a position to take action
- the issue measured is such that action can be taken at a state or local level to address it.

The order of indicators in each chapter of Health Determinants Queensland is consistent with the National Health Performance Framework. Health status and outcome indicators are reported for the National Health Priority Areas, ordered from highest to lowest according to the burden of disease attributed to the area. In general, the order of indicators is based upon a combination of aggregates of indicators of similar aetiology or outcome, hierarchy based upon either breadth of indicator (eg all cancer mortality followed by breast cancer mortality) or sphere of impact (societal, household followed by individual), and alphabetical order. As this report focuses on modifiable determinants of health, the person-related factors dimension of the National Health Performance Framework is not included. All determinants of health indicators are reported in the domain where there is the greatest opportunity for health gains. Thus, physiological and biological factors which may be partially addressed through lifestyle behaviour change have been included in the health behaviour dimension of this report.
Table 3.18: National Health Performance Framework

<table>
<thead>
<tr>
<th>HEALTH STATUS AND OUTCOMES</th>
<th>How healthy are Australians? Is it the same for everyone? Where is the most opportunity for improvement?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health conditions</td>
<td>Human function</td>
</tr>
<tr>
<td>Prevalence of disease, disorder, injury or trauma or other health-related states.</td>
<td>Alterations to body, structure or function (impairment), activities (activity limitation) and participation (restrictions in participation).</td>
</tr>
<tr>
<td></td>
<td>Life expectancy and wellbeing</td>
</tr>
<tr>
<td></td>
<td>Broad measures of physical, mental, and social wellbeing of individuals and other derived indicators such as Disability Adjusted Life Expectancy (DALE).</td>
</tr>
<tr>
<td></td>
<td>Deaths</td>
</tr>
<tr>
<td></td>
<td>Age and/or condition specific mortality rates.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DETERMINANTS OF HEALTH</th>
<th>Are the factors determining health changing for the better? Do the determinants affect everyone in the same way? Where and for whom are they changing?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental factors</td>
<td>Socioeconomic factors</td>
</tr>
<tr>
<td>Physical, chemical and biological factors such as air, water, food and soil quality resulting from pollution and waste disposal.</td>
<td>Socioeconomic factors such as education, employment, per capita expenditure on health, and average weekly earnings.</td>
</tr>
<tr>
<td></td>
<td>Community capacity</td>
</tr>
<tr>
<td></td>
<td>Characteristics of communities and families such as population density, age distribution, health literacy, housing, community support services and transport.</td>
</tr>
<tr>
<td></td>
<td>Health behaviours</td>
</tr>
<tr>
<td></td>
<td>Attitudes, beliefs, knowledge and behaviours e.g. patterns of eating, physical activity, excess alcohol consumption and smoking.</td>
</tr>
<tr>
<td></td>
<td>Person-related factors</td>
</tr>
<tr>
<td></td>
<td>Genetic related susceptibility to disease and other factors such as blood pressure, cholesterol levels and body weight.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HEALTH SYSTEM PERFORMANCE</th>
<th>How well is the health system performing in delivering quality health actions to improve the health of all Australians? Is it the same for everyone?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>Appropriate</td>
</tr>
<tr>
<td>Care, intervention or action achieves desired outcome.</td>
<td>Care/intervention/action provided is relevant to the client's needs and based on established standards.</td>
</tr>
<tr>
<td>Responsive</td>
<td>Accessible</td>
</tr>
<tr>
<td>Service provides respect for persons and is client orientated and includes respect for dignity, confidentiality, participation in choices, promptness, quality of amenities, access to social support networks, and choice of provider.</td>
<td>Ability of people to obtain healthcare at the right place and right time irrespective of income, physical location and cultural background.</td>
</tr>
<tr>
<td>Continuous</td>
<td>Capable</td>
</tr>
<tr>
<td>Ability to provide uninterrupted, coordinated care or service across programs, practitioners, organisations and levels over time.</td>
<td>An individual's or service's capacity to provide a health service based on skills and knowledge.</td>
</tr>
<tr>
<td></td>
<td>Sustainable</td>
</tr>
<tr>
<td>System or organisation's capacity to provide infrastructure such as workforce, facilities and equipment, and be innovative and respond to emerging needs (research, monitoring).</td>
<td></td>
</tr>
</tbody>
</table>

Analysis
All mortality and hospital separation rates and ratios were calculated using the Health Information Analysis System (HIAS). HIAS calculates the direct age standardised rate per 100,000 population using the 1991 Australian population (persons) as the standard population, 95% confidence intervals for these
rates, actual and expected counts and rate ratios with 95% confidence limits. Year of death registration was used. Confidence intervals were estimated by assuming Normal approximations to the Poisson distribution. The Queensland population in the comparable year, by sex, was used as the standard population for calculation of standardised ratios, where the reference figure of 100 for Queensland was applied in all cases.

Throughout this report the term ‘significant’ is used to indicate ‘statistically significant’ rather than necessarily of clinical or public health importance. Determination of statistically significant differences was based on the standardised ratio, where differences are reported as statistically significant if the 95% confidence limits population group do not include 100.

All rates and ratios are reported to limited decimal points. Thus statistical significance for some differences may not be apparent from the reported data. No statistical methods were applied for adjustment of multiple comparisons. Therefore caution must be used in the interpretation of individual or small numbers of data points.

Due to the small population numbers in some disease or age groups, numbers for some specific causes of deaths or hospital separations were very small or zero in a single year. In an attempt to produce meaningful rates and reduce the fluctuation from year to year, three year averages were calculated instead of single year counts. Generally case numbers, and age standardised and age specific mortality and hospital separation rates are reported in the Health Determinants Queensland 2004 Statistical Report.

Poisson regression models in SPSS statistical software (version 10) were used to test for age adjusted linear trends in mortality and hospital separation rates in the period 1992-2001. The predictor variables in these multivariate analyses were single year of death or single year of hospital separation and age, which was generally expressed in five-year age groups as indicator variables. The outcome variable was the number of deaths or hospital separations, with the log of the age specific populations used as the offset variable in the Poisson model. The Poisson regression model assumed that the annual trend in rates was linear, and hence departures from this linear trend have not been tested. Linear trends were expressed in terms of the per cent change per year, based on the parameter estimates of the Poisson model. The standard errors of the parameter estimates were corrected for evident overdispersion. Confidence intervals (95%) for the per cent change per year were calculated using the parameter estimates of the Poisson model and standard error of those estimates.

**Comparability between ICD-9 and ICD-10**

In 1997, the ABS implemented an Automated Coding System (ACS) for cause of death coding. The coding system changed from ICD-9 to ICD-10. From 1999, deaths were coded using ICD-10 and from 1999/00 hospital separations were coded using ICD-CM-10. The comparability factors between data coded using ICD-9 and ICD-10 are listed in Table 3.19. These factors were generated from mortality data from the years of joint coding, 1997 and 1998.

There were differences in the number of deaths coded by the two systems for many mortality indicators in this report. However where the comparability factor was in the range 0.9 to 1.1, comparability issues were not highlighted in the text and Poisson trend analysis was reported. Where the comparability factor was outside this range, no Poisson trend analysis was reported and the issue of lack of comparability was noted in the text. An additional consideration for diabetes was the effect of changes in instructions to coders between ICD-10 version 1 and version 2 in 2000, resulting in a larger number of cases being coded as diabetes principle cause. Changes in hospital separation rates over the period prior to 2000 were reported. No comparisons of diabetes hospital separation rates prior to 2000 with rates after 2000 were conducted. Lack of comparability of coding for COPD between ICD-9 and ICD-10 precluded comparison of rates across the reporting period.
Attributable fractions

Attributable fractions, also referred to as aetiologic or aetiological fractions, are used to measure the impact of risk factors on morbidity and mortality. Calculation of fractions takes into account both the age and sex specific prevalence of a risk factor in the population of interest, and the strength of the relationship between the risk factor and outcome conditions (relative risk) for that age group and sex. The number of deaths or hospital separations caused by (or preventable for) a risk factor can then be calculated by multiplying the number of age and sex specific cases of each outcome condition related to the risk factor, by the corresponding attributable fraction.
Risk factors included in this report are alcohol, smoking, illicit drugs and physical inactivity. The attributable fractions for alcohol, smoking and illicit drugs were those created by the Australian Institute of Health and Welfare in 2001. The fractions were originally developed by Holman et al. and revised by English et al. Relative risk estimates of physical inactivity used to calculate Queensland fractions were developed by the World Health Organisation.

Indigenous health
Aboriginal populations and Torres Strait Islander populations have different health status. However, in this report these populations are generally reported together as Indigenous peoples. This report includes data and indicators to describe Indigenous health where the data is available, using methodologies listed below. It builds on information provided in earlier reports for Queensland Health.

Comparisons between the health of the population groups were performed using five proxies:

1. Stratification of Queensland into areas by the proportion of Census respondents who identified as Indigenous
2. Indigenous status field from the Queensland hospital admitted patient data collection
3. Utilisation of the locality field in the Queensland hospital admitted patient data collection to consider remote Indigenous communities
4. Reference to Australian Indigenous identified data
5. 2001 Census demographic data.

The first of these proxy methods was extensively used in the Whole of population and Indigenous peoples chapter. Statistical Local Areas (SLAs) were clustered into five groups based on the proportion of Indigenous population in the SLA, as derived from the 1996 census. These groups were: less than 5% Indigenous population; 5% to less than 10%; 10% to less than 20%; 20% to less than 40%; and, greater than 40% Indigenous population. These groups are indicated as less than 5%, 5-10%, 10-20%, 20-40%, and greater than 40%, respectively in this report.

The remaining four proxy methods were used exclusively in Chapter 5. Indigenous peoples.

Analysis for health service district profiles
The provision of appropriate health services is significantly enhanced by knowledge of the health status of the target population. The measurement of area specific health status or health service needs is difficult for small geographical areas. Measures of population health available from routine collections do not always allow for calculation of small area estimates. Periodic or ad hoc surveys generally do not provide small area estimates either, having usually been designed to generate population estimates at only a state or national level. Furthermore, health status in small populations is subject to considerable variation in numbers of cases, deaths or behaviours due to unexpected or non-representative events.

Assessment of the health status of an area requires consideration of two major components: the health status of all Queenslanders and the relative health status of the residents in the area in comparison with all Queenslanders. The health status of all Queenslanders in terms of health outcomes, risk factor prevalence and the burden of disease and injury attributable to diseases, injury and risk factors, are documented elsewhere in Health Determinants Queensland 2004, Health Indicators for Queensland, 2001 and other publications. However, the prevalence of health outcomes and health determinants for small populations is unknown and therefore cannot be compared with Queensland overall.

The health status of a population is largely predicted by the sociodemographic characteristics of the population. The key sociodemographic predictors of health status are age distribution of the population, sex distribution, proportion of Indigenous people, socioeconomic profile, and to a lesser extent, urban, rural or remote location.

The health status of each health service district (HSD) was estimated by determining the key sociodemographic characteristics of its population and comparing these to Queensland in conjunction with the epidemiology of health status indicators in the key sociodemographic groups within Health Determinants Queensland 2004. This same methodology could also be used to estimate the health status of populations within HSDs. This method of synthetic estimation relies on the fact that the health status of a population is largely predicted by sociodemographic characteristics of the population, and thus varies considerably across the state. This is because in Queensland and elsewhere, patterns of disease prevalence are strongly based on age and sex eg, older people are likely to develop coronary heart disease; males are more likely to have lung cancer etc.
To estimate the relative prevalence of key health outcomes and determinants in a population the following process was undertaken:

A. Determine the sociodemographic characteristics of the population, specifically:
   • age distribution
   • sex distribution
   • proportion of Indigenous people
   • socioeconomic advantage/disadvantage profile; and
   • classification as urban, rural or remote location, or accessibility category.

B. Source the distribution of health status indicators (deaths, hospital separations, risk and protective factor prevalence) between sociodemographic groups for Queensland in Health Determinants Queensland 2004.

C. Where the area has a greater proportion of a sociodemographic group in comparison with Queensland, determine those health status indicators that are more prevalent in that sociodemographic group.

For example:
If a population has a higher proportion than Queensland of Indigenous people, it is estimated that this population will have a higher prevalence of deaths due to all causes and in particular; cardiovascular disease, diabetes and suicide. Determinants of these conditions include tobacco smoking and overweight and obesity, excessive alcohol consumption and poor nutrition.

Note: This methodology only provides an estimate of health status in populations. In addition where the method indicates that in all probability a population will have an excess prevalence of a health status indicator, the method does not provide information on the health significance of this excess.

The state and HSD-level estimates of the prevalence of asthma, diabetes and overweight/obesity were based on the following data sources. Self report asthma in children (ages 0 to 9 years) from the 2001 National Health Survey (NHS 2001) was consistent with epidemiological studies in NSW, in which more rigorous clinical diagnosis techniques were adopted. The NHS 2001 was used, therefore, to derive both state and HSD level relativities for this condition. Measured diabetes status in adults (ages 25 years and older) from the AusDiab study was considered to be the most up-to-date and reliable source of the prevalence on diabetes at a state level. Due to sampling considerations, however, self-report diabetes from the NHS 2001 was chosen over AusDiab to derive HSD level relativities. Diabetes prevalence in Indigenous populations was calculated separately using information from the Well Person’s Health Check. Similarly, measured body mass index (BMI) from AusDiab was considered to be the most current and reliable source for the prevalence of overweight/obesity in adults (ages 20 years and older). Again, self report information from the NHS 2001 was used to derive HSD level relativities, except for Indigenous populations where a synthesis of information from the Well Person’s Health Check and the self report information from the Indigenous component of NHS 2001 was used. Due to the lack of current information (both measured or self report) on overweight/obesity in children (ages 5 to 14 years), state and HSD level estimates of the prevalence of this risk factor were derived using a synthesis of information on measured BMI from the 1995 National Nutrition Survey (NNS) and the relationship between self report childhood and adult obesity, and diabetes observed in the NHS 2001. Case numbers are based on the age and sex distribution of the HSD according to estimated resident population figures for 2001 and were calculated using simple and multinomial survey logistic regression techniques using index of socioeconomic advantage/disadvantage, proportion Indigenous population and accessibility score as covariates where appropriate.

Excess prevalence of sociodemographic factors and health status in HSDs
In Chapter 6, an excess population was determined for those HSDs where the proportion of a sociodemographic group was greater than the Qld mean. Of those HSDs where there was an excess proportion, half of the HSDs were called ‘greater than’ and the other half, ‘much greater than’. Excess sociodemographic groups were reported in the HSD profile if there were:
- much greater proportion of a current or projected age group (with age groups; 0-4, 5-14, 15-24, 65-74 and 75+ years);
- much greater proportion of a current sex;
- greater or much greater than proportion of Indigenous peoples;
- greater or much greater than proportion of people living in the most socioeconomically disadvantaged quintile;
- greater or much greater than proportion of people who speak a main language other than English at home;
- greater or much greater than proportion of people who speak a main language other than English at home and who speak English not well or not at all.

This same methodology was applied to the thematic mapping of age groups, Indigenous population and proportion of population in the socioeconomically disadvantaged quintile. In the maps however, excess was based on stratification by all Collection Districts in Queensland, rather than by HSDs as above. The minimum areas for shading were Collection Districts (an area of approximately 225 dwellings with fewer dwellings in rural areas as population densities decrease).

**Interventions to address the burden of risk factors**

Intervention sections are included in each of the five population based chapters of this report. These sections aim to provide the key audiences (health sector managers, planners and service managers, local government and other key partners) with a snapshot of the effective interventions that can and should be implemented to impact positively on the health determinants of Queensland or smaller populations. A whole of government approach has been taken; where the action by numerous partners is required to effectively meet the health needs of the population. Population health interventions to address the burden of disease and injury caused by the reported health determinants were derived from published national and state strategic documents, and other published international literature. Specifically where these interventions are currently implemented or proposed for Queensland Health, they are described in the Outcome Area Plans and Health Outcome Plans of Queensland Health.

**Data sources and specific limitations**

**ABS Cause of death**

Mortality data were derived from the Queensland Registrar of Births, Deaths and Marriages, where cause of death and usual residential address were recorded on death certificates. All disease specific mortality data were derived using the principal cause of death. In addition, deaths in 1999-2001 where diabetes was reported as an underlying cause in deaths were also reported. The external causes of injuries and poisoning are reported. These data were coded by the ABS using the International Classification of Diseases, version 10 (ICD-10) (Table 3.19). There have been two major changes in death coding practices by the ABS in the reported period; conversion from manual ICD-9 coding to automatic ICD-9 coding; and, conversion from ICD-9 to ICD-10. The comparability factors between data coded at the start and end of the reported period are listed in Table 3.19.

For consistency with national reporting, year of registration of the death rather than year of death is used for all indicators, except those for reporting of Indigenous health outcomes. Year of death is used for reporting of Indigenous health outcomes due to the variable time between death and registration in some Indigenous communities in Queensland.

**AusDiab**

The Australian Diabetes, Obesity and Lifestyle Study (AusDiab) was a national survey conducted in 2000 by the International Diabetes Institute. The objectives of the survey were to estimate the prevalence of diabetes and related conditions (using blood tests), to assess the distribution and relationships of cardiovascular risk factors and to assess trends in risk factor levels as compared with those obtained in previous surveys in Australia. The AusDiab study employed stratified cluster sampling to recruit subjects. In Queensland, 1,634 adults from six urban centres completed the biomedical examinations. The response rate in the study was low, with only 29% of those estimated to be eligible in the total population, 34% of those estimated to be eligible from contacted households and 50% of those invited actually completed the study. These response rates are just slightly below the national AusDiab rates.

Data from the Queensland cohort suggest that the Queensland-AusDiab participants may have been from lower socioeconomic disadvantaged areas and/or may have been more health conscious than the general Queensland population; with lower smoking rates and higher intakes of vegetables and fruit than the general population. These possible biases may result in underestimates of the true prevalence cardiovascular risk factors.
BETTERING THE EVALUATION AND CARE OF HEALTH (BEACH)

The BEACH project is an ongoing survey of general practice conducted by the Australian Institute of Health and Welfare (AIHW) and the General Practitioner Statistics Collection Unit, University of Sydney. Approximately 1,000 general practitioners (selected from the Medical Benefits Scheme provider database) from across Australia are surveyed annually. The program aims to establish an ongoing database of GP-patient encounter information and to assess patient risk factors and the relationship these factors have with health service activity.

CANCER DEATHS

Cancer death data was reported from the Queensland Registrar of Births, Deaths and Marriages, and is consistent with all other death data in this report. Cancer death data was also reported directly from other sources in Queensland Health where the Queensland Cancer Registry was used. The registry file is based on place of first diagnosis of the cancer, in contrast to the ABS coded file based on place of usual residence of death.

CENSUS OF POPULATION AND HOUSING

The national census is conducted every five years by the Australian Bureau of Statistics (ABS) to collect detailed demographic information about individuals which can be reported at levels ranging from small area through to national data. Data from the 1996 and 2001 census are reported. Age and sex distributions were derived from 2001 census and 2002 estimated resident populations (ERP). Indigenous population, birthplace, and language spoken at home were derived from the 2001 Census. Population growth and projections for health service districts reported in Chapter 6 Health service district profiles were derived from the 1996 Census. Denominator populations for rates and ratios were calculated using data from the 1991, 1996 and 2001 Census’ with estimations for the intervening years.

All maps in this report were prepared using Cdata 2001 software with MapInfo (version 7.0).

CANCER SCREENING: BREAST AND CERVICAL CANCER

Breast cancer screening information was derived from data collected at all BreastScreen Queensland Program sites throughout the State. It should be noted that mammographic services provided outside the BreastScreen Program are not included in this data. PAP smear data was derived from the PAP Smear Register.

CHILD HEALTH DENTAL SURVEY

The prevalence of dental caries in children was obtained from the National Child Health Dental survey conducted by the AIHW Dental Statistics and Research Unit, and reported using definitions consistent with the national survey reports. Although the results of the Child Health Dental survey provide an indication of the trends in oral diseases, the survey suffers from some fundamental design problems, including:

- the sample is drawn solely from children treated by school dental services and may therefore be unrepresentative of the child population
- different sampling regimes adopted by states and territories may mean that the results are not comparable
- potential biases may exist due to variations in the assessment of decay and lack of standardisation of the large number of examiners
- the small size of the sample precludes small area or regional analysis of the results
- variations exist in compliance with the sampling requirements.

COMMUNITY HOUSING AND INFRASTRUCTURE NEEDS SURVEY (CHINS)

This survey was undertaken by the ABS in 1999 and then again in 2001, following on from the 1992 Housing and Community Infrastructure Needs Survey commissioned by ATSIC. The 1999 survey was developed to provide a new baseline for data on the adequacy and condition of housing, infrastructure and facilities in discrete Indigenous communities, and the housing stock provided to Aboriginal and Torres Strait Islander peoples by Indigenous Housing Organisations (IHO). In 2001, this survey collected information for 616 IHOs, which managed a total of 21,287 permanent dwellings. This represented 1,216 discrete indigenous communities in 2001 and a total reported usual population of 108,085 people. Although called a survey, CHINS was a complete enumeration of all larger Indigenous housing
organisations and discrete communities. Smaller organisations were considered out of scope.\textsuperscript{138} Data were collected by personal interview, following extensive testing and validation to confirm the suitability of the survey method. Results from the validation process indicated that aggregated data are considered fit for the intended purpose. Data quality on some un-aggregated data items was considered unsatisfactory. This represents a limitation to the data.

**Crime and safety survey**
This survey was conducted by the ABS in 2002 throughout Australia. It focuses on those categories of serious crime that affect the largest number of people including household break-in, motor vehicle theft, assault and robbery. The survey was conducted as part of the ABS Monthly Population Survey where questions on labour force are asked and in scope respondents were then sent a paper questionnaire for self-completion. Information was sought from 54,000 persons (aged 15 years and older), of which 76\% responded. Household data was sought from 27,100 households with 20,400 (75\%) responding. A complex set of multistage weighting procedures was used to adjust for non-response and for the particular demographic characteristics of respondents to the Monthly Population Survey.

**General social survey**
Information about family and community involvement, perceptions of safety and experiences with crime was obtained from the General Social Survey conducted by the ABS. The survey was conducted throughout Australia from March to July 2002, and information collected by trained interviewers by personal interview with 15,500 people aged 18 years and over. The response rate (fully responding, adequate/complete) was 79.3\%. Individual information and household information was collected. Population estimates were weighted according to the age and sex distribution of the Queensland population and the number of adults per household. The results were not age standardised.

**Household, income and labour dynamics for Australia (HILDA)**
HILDA is a longitudinal survey, commenced in 2001, and is funded by the Commonwealth Department of Family and Community Services. This survey aims to support research questions related to three broad areas; income dynamics, labour market dynamics and family dynamics, and to undertake annual surveying for an undefined period. Data from the first wave was used in this report. Full responses were received from 6872 (in scope) Australian households comprising 13,969 individuals. Four questionnaires were utilised, three of which involved face to face interview with the fourth being a self-completion questionnaire. The household response rate was 58.8\% (full responders) and the person response rate within those households was 92.3\% (37\% for self-completion questionnaire). Population estimates were weighted to the Australian population according to age and sex and number of adults per household. The results were not age standardised.

**National drug strategy household survey**
The prevalence of alcohol consumption, tobacco smoking and illicit drug use were obtained from the 1998 and 2001 National Drug Strategy Household Survey, and reported using definitions consistent with the national survey reports. Population estimates were weighted according to the age and sex distribution of the 2000 Estimated Resident Population for Queensland, with adjustment for changes to the survey period. The results are not age standardised. These estimates are based on data obtained through the Australian Social Science Data Archives of the Australian National University. The data were deposited with the Archives by the AIHW. The estimates however have been calculated within the Alcohol, Tobacco and Other Drug Services Unit of Queensland Health, and the latter takes full responsibility for the analysis and interpretation.

**National health survey**
Information about the prevalence of health risk factors and health-related behaviours was obtained from the 1995 and 2001 National Health Surveys (NHS) conducted by the ABS. The 2001 survey was conducted by personal interview with people in 19,408 private dwellings in Australia, with completed questionnaires from 26,863 people from these dwellings.\textsuperscript{139} Household response rates for non sparse households was 89\% (including sample losses) and 58\% in sparse households (including sample losses). Person responses varied. Population estimates were weighted according to the age and sex distribution and the number of adults per household. Some age standardization was undertaken for reporting Indigenous and non Indigenous data.
National nutrition survey
Information relating to diet and items derived from measured height, weight and body circumference was obtained from the 1995 National Nutrition Survey (NNS) conducted by the ABS although jointly sponsored by the ABS and the Commonwealth Department of Health and Family Services. A sample of 13,800 people was invited to participate in the NNS having previously been included in the 1995 NHS. A sub sample of 1,490 NNS participants provided additional (day 2) food intake data. Detailed information was collected from people aged two years and older and nutrient information was later derived from reported food and beverage intake. Population estimates were weighted according to the age and sex distribution of the Queensland population and the number of adults per household. The results were not age standardised.

Recommended daily intakes (RDI) of micronutrients are the amounts of nutrients that should be available per head of a population group if the needs of practically all members of the population group are to be met. All RDIs calculated from the 1995 National Nutrition Survey are based upon the 1982-1988 revised nutrient intake requirements and the 1989 revised energy requirements. All RDIs are based upon estimates of requirements with a generous ‘safety factor’ added. RDIs for thiamine, riboflavin, niacin and vitamin B-6 are based on energy requirements in existence when these B vitamin recommendations were revised. Niacin values are presented as a single figure, the midpoint of the range adopted in 1984. Iron is expressed as a range to allow for differences in bioavailability of iron from different Australian foods. The RDIs for pregnancy are for the second and third trimesters. The following factors were used: thiamine - 0.1 mg/1000 kJ; riboflavin - 0.15 mg/1000 kJ; niacin - 1.6 mg/1000 kJ; vitamin B-6 - 0.02 mg/g protein (based on protein as 10-15 per cent of recommended energy intake).

National survey of mental health and wellbeing of adults
This survey was conducted by the ABS in 1997 as part of the National Mental Health Strategy. Approximately 10,600 people aged 18 years and older participated in the survey, representing a response rate of 78%. Mental health was measured in this survey using a modified version of the Composite International Diagnostic Interview. This is a comprehensive computer based interview for adults which can be used to assess current and lifetime prevalence of mental disorders through symptoms and their impact on day to day activities. Where standardisation of data was undertaken, the estimated total Australian population was used.

Notifiable conditions
Notifiable condition data were derived from the Queensland Health Notifiable Conditions System (NOCS). Crude notification rates for all years were calculated using estimated resident populations. Identification of Indigenous status remains poorly completed within NOCS.

Persons aged fifty years and over survey
This survey was conducted by the ABS throughout Queensland in 1998. It was a supplement to the Australia-wide Monthly Population Survey. The survey was conducted using a multi-stage area sample with information obtained from approximately 1,800 private dwellings with usual residents aged fifty years and over. One person per household was surveyed. Information was obtained by interview using trained interviewers. Estimation procedures accounted for independent estimated distributions of the total population by age, sex and area. This procedure compensates for under-enumeration and leads to more reliable estimates.

Perinatal death collection
Data on perinatal statistics are collected under State legislation. These data provide a source of information for research into obstetrics and neonatal care, and assist with the planning of Queensland’s health services. The data collection forms are forwarded to Queensland Health by all public hospitals, private hospitals and home birth practitioners.

Population projections
The Queensland Government population projections released in 2003, (based on Census 2001) were developed by the Queensland Centre for Population Research at the University of Queensland in conjunction with the Office of Economic and Statistical Research. These projections have been produced for Queensland Statistical Divisions and Local Government Areas, but are not currently available for Statistical Local Areas. Consequently all projections used in this report are those developed from the
1996 Census by Department of Information, Local government and Planning, with health service district groupings added by Health Information Centre, Queensland Health (and last updated August 2002).

**Queensland household gambling survey**
The Office of the government statistician conducted this survey in 2001 by computer assisted telephone interviewing. People 18 years and over were included, with a total of 13,082 completed interviews achieved, giving a response rate of 72.3%. Technical details have been published.141

**Queensland Health telephone surveys**
Self reported quality of life, general health, oral health, chronic disease status, health determinant prevalence and social capital were obtained from the Omnibus health surveys, conducted by Queensland Health between 1993 and 2003. The majority of surveys were conducted for a random sample of Queensland adults, aged 18 years and older, except where noted in Table 3.20. All surveys were conducted using computer-assisted telephone interview (CATI) methodology. Response rates for these surveys ranged from 72% to 92% (Table 3.20). For all adult health data, population estimates were weighted according to the age and sex distribution of the Queensland population for the relevant period, and the number of adults per household. For children related data, the estimates were weighted according to the age and sex of the child concerned. The results were not age standardised.

<table>
<thead>
<tr>
<th>Year</th>
<th>Survey title</th>
<th>Response rate</th>
<th>Number surveyed</th>
<th>Comments (eg oversampled rural)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>statewide Health Survey</td>
<td>72%</td>
<td>5,594</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>Parenting Survey</td>
<td>82%</td>
<td>4,010</td>
<td>Respondents were principal care-givers of children aged 0-12yrs</td>
</tr>
<tr>
<td>2000</td>
<td>Chronic Diseases-General Population Survey</td>
<td>80%</td>
<td>1,625</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>Sunsafe Survey</td>
<td>81%</td>
<td>1,534</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>Omnibus Survey</td>
<td>77%</td>
<td>3,083</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>Omnibus Survey</td>
<td>75%</td>
<td>2,481</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>Social Capital Survey</td>
<td>79%</td>
<td>2,667</td>
<td>Oversampling in rural and remote areas</td>
</tr>
<tr>
<td>2003</td>
<td>Omnibus-General Population</td>
<td>73%</td>
<td>1,575</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>Omnibus-Infant Nutrition</td>
<td>92%</td>
<td>1,200</td>
<td>Respondents were biological mothers of children 0-4yrs</td>
</tr>
<tr>
<td>2003</td>
<td>Omnibus-Child Health</td>
<td>87%</td>
<td>1,596</td>
<td>Respondents were principal care-givers of children aged 0-12yrs</td>
</tr>
</tbody>
</table>

Source: Epidemiology Services Unit, Health Information Centre, Queensland Health

**Queensland hospital admitted patient data collection**
Hospital separation data were derived from the Queensland Hospital Admitted Patient Data Collection, including private and public hospitals. All disease-specific hospital separations were derived using the principal diagnosis of inpatient episodes of care, except for episodes of care in 2000/01 where diabetes was identified as an underlying condition in episodes of care due to diabetes-related conditions. The external cause(s) of injury and poisoning is reported. All separations were coded using the International Classification of Diseases version 10 Clinical Modification (ICD-10-CM: Table 3.19).

**Recorded crime**
This publication presents national crime statistics relating to victims of a selected range of offences that have been recorded by police. Data on official crime reports are provided to the ABS in aggregated form by the reporting authorities in each jurisdiction. The aim of national crime statistics is to provide one view of crime (police reported) and to provide comparisons across states and territories and provide a basis for measuring changes over time. National crime statistics are produced annually. The offence categories are based on the Australian Standard Offence Classification. Rates are based on the Estimated Resident Population for each of the states and territories for the reference period. Variations in recording of crime occur across jurisdictions. However national crime statistics are compiled to maximise comparability.
Safety in the Home
This survey was conducted by the ABS in Queensland in 2001 as a supplement to the Australia-wide Monthly Population Survey. The supplementary survey provided a sample of approximately 4,700 dwellings from which a full response was obtained. Any responsible adult aged 15 years or over was interviewed either by telephone or personal interview.

Socioeconomic indices
The 1996 Index of Relative Socioeconomic Disadvantage[^142] was used to undertake mortality stratifications in the Whole of population chapter. The 2001 Index of Relative Socioeconomic Advantage/Disadvantage[^142] was used for aetiological mortality analyses in Whole of population chapter, for mapping in Chapter 6 Health service district profiles and in selected socioeconomic discussions in other chapters. Both indices were reported in five quintiles based on Collection Districts in Queensland. These indices were developed by the ABS from the relevant Census’. There are a number of general limitations which apply to these indices and are detailed by ABS.[^142] Specifically, Collection Districts (CD) are excluded from analysis where one or more of the following characteristics are found:

- populations smaller than ten
- five people or fewer employed
- 70% or more people not responding to questions included in the Index as variables
- more than 20% of dwellings non private
- off shore and migratory CDs.

CDs not included in analysis were noted in maps in Chapter 6 Health service district profiles.

Survey of disability, aging and carers
This survey was conducted by the ABS in 1998.[^143] It is the fourth survey in a series with a five-six year frequency of collection. The first survey was conducted in 1981 and the next survey scheduled for 2003. The survey collects information on three population groups; people aged 60 and older, people with disabilities, and their carers. Concepts and definitions used in this survey were taken from the International Classification of Impairments, Disabilities and Handicaps. The final sample in 1998 comprised 36,951 persons in private and non-private dwelling units, and 5,716 persons in cared accommodation. Personal computer assisted interviews were conducted with adults aged over 15 years of age and proxy interviews for young people aged under 15 years. For those aged between 15 and 17 years, interviews were conducted dependant on parent permission. Data were weighted to account for different sampling fractions, to represent the entire Australian population. This weighting included age group, sex, territory/state, and capital city/balance of state.

Survey of education and training (1997) and education and training experience (2001)
These surveys were conducted by the ABS in 1997 and 2001.[^144] Information collected included sociodemographic characteristics and work history details together with educational qualifications held, recent and intended study, and details of training courses completed in the last 12 months. The survey included persons 15-64 years who met selected criteria for inclusion,[^145] the effective survey sample was approximately 13,800 dwellings yielding 22,700 completed interviews in 1997. Data were collected by personal interview conducted by trained interviewers.

Vaccinations rates
Vaccination data for children were derived from the Australian Childhood Immunisation Register (ACIR). Pneumococcal, influenza and Hepatitis B vaccination data for older persons and Indigenous people were derived from Queensland Health Vaccination Information and Vaccination Administration System (VIVAS).

Well persons health check
The Well person’s health check was a community based screening program designed to provide early detection and treatment of sexually transmitted infections and non-communicable disease risk factors. It provides health information to assist the community and health services in planning for improved health. The program was implemented in remote Indigenous communities in North Queensland and represented a collaborative effort of the Tropical Public Health Unit Network, Apunipima-Cape York Health Council,
Health Service Districts of Queensland Health and the individual communities. The screening was conducted in 1998-2000.

**General limitations of data**

**Cause of death or hospital separation**

Recorded ‘cause of death’ and ‘cause of hospital separation’ are well known to suffer from significant error throughout the world. Notably, hospital separation statistics reflect events of separation rather than individuals; thus re-admissions to another hospital or the same hospital are included in the statistics. Further to these general sources of error, specific mention must be made of the underestimation of recording of diabetes, mental disorders and self-inflicted injury burden of disease in these databases, and the exclusion of psychiatric hospitals from the hospital separation data prior to 1997. Death and hospitalisation results are presented without attempts at correction for underlying cause. Furthermore coding practice may vary over time and between areas. Knowledge of specific changes (e.g., change in coding practice related to diabetes hospital separations in 2000/01) has precluded certain comparisons. These limitations are noted in the text, where applicable. Lack of comparability of conditions based on coding using ICD-9 and ICD-10 has been identified as a limitation in some trend analyses in this report. These limitations have been noted in the text where applicable and derive from comparability data reported in Table 3.19.

**Indigenous identification**

Poor Indigenous identification in death and hospital separation data is one of the main limitations of these data sets. A variable proportion of the death certification and hospital separation data presented here does not include any Indigenous identification. Identification that is recorded is a mixture of self-identification and identification assigned by the person completing the form. Census data records ethnicity according to self-identification, and there are indications of possible under-enumeration of Indigenous peoples in remote areas in the 2001 census. Due to these problems with both the case number and population, accurate rates in Indigenous peoples cannot be calculated.

Using rates in geographic areas with a high proportion of Indigenous population as a proxy for Indigenous rates could be subject to four possible sources of bias:

- Under-estimation of the proportion of Indigenous population in areas leading to inaccurate classification of areas by Indigenous population, leading to exaggeration of the excess mortality and hospitalisation
- In the cluster of five Statistical Local Areas (SLAs) with the greatest proportion of Indigenous population there may be “dilution” of the Indigenous population by about 30% non-Indigenous population. The health status of the non-Indigenous peoples is likely to be better than the Indigenous, thus underestimating the true morbidity and mortality of Indigenous peoples in these areas
- The five SLAs with the greatest proportion of Indigenous population are all in remote parts of the state where the general health status of people is considered to be worse than in towns or cities. Therefore, using these areas as proxies for Indigenous health status throughout the state would fail to differentiate between the health status of Indigenous peoples living in larger towns or cities and those living in remote areas
- In Torres SLA, a significant number of deaths for Indigenous peoples were unregistered in the period 1992-98. In addition, research indicates that the health of Torres Strait Islanders is better than that of Aboriginal people for most health indicators, excluding diabetes

**Survey biases**

Each of the surveys sourced in this report are subject to a number of biases, specifically recall bias, exclusion of Indigenous and Culturally and Linguistically Diverse (CALD) populations due to telephone access, cultural appropriateness and language barriers. Most ABS and Queensland Health surveys had very good response rates of 75% or above indicating that response bias has been minimised as much as is practicable. In contrast, AusDiab achieved very low response rates, as discussed under that survey heading.
Glossary of terms

**Accessibility/remoteness** – Three measures of accessibility/remoteness were used in this report: Rural, Remote and Metropolitan Area classification (RRMA), the Accessibility/Remoteness Index of Australia (ARIA) and the Remoteness Areas (RA). The measure used depended primarily upon data availability. Due to small numbers in some sub-classifications, categories have been aggregated where appropriate.

The three zone/seven category Rural, Remote and Metropolitan Area classification (RRMA) was developed in 1994 jointly by the Commonwealth Department of Primary Industries and Energy and the Commonwealth Department of Human Services and Health. The seven RRMA categories are ‘capital cities’, and ‘other metropolitan centres’ within the metropolitan zone, ‘large rural centres’, ‘small rural centres’ and ‘other rural centres’ within the rural zone, and ‘remote centres’ and ‘other remote centres’ within the remote zone. Accessibility/remoteness was determined using the Accessibility/Remoteness Index of Australia (ARIA). In ARIA, remoteness, a geographic variable, is measured in terms of how far the population must travel to access services. Remoteness was also determined using the six category Remoteness areas (RA); Major cities, Inner regional, Outer regional, Remote, Very remote and Migratory. This latter classification was introduced in 2002, and was based on the ARIA Index scores. The Remoteness area classification has been adopted to generate consistency with other recent published analyses.

**Body Mass Index (BMI)** estimates the proportion of body fat, calculated from height and weight where BMI=weight (kg)/height (m)^2. BMI values are grouped into categories. For adults 18 years and older, underweight is BMI score less than 20, acceptable weight is 20-24.9, overweight 25-29.9 and obese >30. In 2003, NHMRC and WHO amended these definitions to underweight is a BMI score less than 18.5, acceptable weight is 18.5-24.9, overweight 25-29.9 and obese >30. All studies reported in Health Determinants Queensland use the former definitions. For children, BMI is compared with age and gender-specific BMI percentile charts.

**Children not fully immunised** – the proportion of children reported as not having received all the required vaccinations for diphtheria, tetanus, poliomyelitis, whooping cough, measles and mumps for their age. The required vaccinations are based on the 1986 NHMRC Standard Childhood Vaccination Schedule.

**Cholesterol** – by clinical assessment, classification of blood lipid values:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Blood lipid concentration (mmol/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Cholesterol ≥ 5.5</td>
</tr>
<tr>
<td></td>
<td>HDL-cholesterol ≥ 1.0</td>
</tr>
<tr>
<td></td>
<td>Triglycerides &lt; 2.0</td>
</tr>
<tr>
<td></td>
<td>LDL-cholesterol &lt; 3.5</td>
</tr>
<tr>
<td>Abnormal</td>
<td>Cholesterol ≥ 5.5</td>
</tr>
<tr>
<td></td>
<td>HDL-cholesterol &lt; 1.0</td>
</tr>
<tr>
<td></td>
<td>Triglycerides ≥ 2.0</td>
</tr>
<tr>
<td></td>
<td>LDL-cholesterol ≥ 3.5</td>
</tr>
</tbody>
</table>

**Community capacity** is a collection of characteristics and resources which, when combined, improve the ability of a community to recognise, evaluate and address key problems.

**Dental caries prevalence** is the proportion of the population with one or more teeth that are either decayed (D), missing (M), or filled (F) due to caries.

**Diabetes prevalence** by clinical assessment, classification of abnormal blood glucose based on values for the oral glucose tolerance test and venous plasma glucose concentrations:

<table>
<thead>
<tr>
<th>Glucose Tolerance</th>
<th>Fasting glucose (mmol/l)</th>
<th>2-hr glucose (mmol/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 Diabetes</td>
<td>≥ 7.0</td>
<td>Or ≥11.1</td>
</tr>
<tr>
<td>Impaired glucose tolerance (IGT)</td>
<td>&lt; 7.0</td>
<td>And 7.8 – 11.0</td>
</tr>
<tr>
<td>Impaired fasting glucose (IFG)</td>
<td>6.1-6.9</td>
<td>And &lt; 7.8</td>
</tr>
</tbody>
</table>

**Disability with selected restrictions** – people with a disability which restricts their participation in self-care, mobility, communication, employment and/or education. Includes all children with a disability aged less than 5 years.

**Foetal death (stillbirth) rate** – the number of foetal deaths as a proportion of the total number of births.

**Hazardous and harmful alcohol consumption** - the levels of risk associated with alcohol consumption calculated from the 1998 and 2001 National Drug Strategy Household Surveys were as below. These guidelines were revised by NHMRC in October 2001.
Gender | Low Risk | Hazardous | Harmful
---|---|---|---
Male | < 40 grams of pure alcohol or four standard drinks per day | 41-60 grams of five or six standard drinks per day | > 60 grams of pure alcohol or more than six standard drinks per day
Female | < 20 grams of pure alcohol or two standard drinks per day | 21-40 grams or three or four standard drinks per day | > 40 grams of pure alcohol or more than four standard drinks per day

Hospital separation rate – the total number of separations in all hospitals (public and private) providing acute care services per 100,000 estimated resident population at 31 December of the reference year. A separation is an episode of care which can be a total hospital stay (from admission to discharge, transfer or death) or a portion of a hospital stay ending in a change of status (for example from acute care to rehabilitation). The inclusion of status changes has been progressively introduced since 1995-96. Hospitals providing acute care services are those in which the treatments typically require short durations of stay. Rates and case numbers are reported using financial years.

Hypertension – by clinical assessment, untreated hypertension was defined as systolic pressure greater than or equal to 140mmHg or diastolic pressure greater than or equal to 90mmHg and not on hypertensive treatment. Classification of blood pressure:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Systolic</th>
<th>Diastolic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt;140</td>
<td>And &lt;90</td>
</tr>
<tr>
<td>Borderline mild hypertension</td>
<td>140-159.9</td>
<td>Or 90-94.9</td>
</tr>
<tr>
<td>Mild (above borderline) hypertension</td>
<td>160-179.9</td>
<td>Or 95-104.9</td>
</tr>
<tr>
<td>Moderate and Severe hypertension</td>
<td>≥180</td>
<td>Or ≥105</td>
</tr>
</tbody>
</table>

Index of socioeconomic disadvantage / SEIFA – Five indices are compiled by the ABS following each population Census. Each index summarises different aspects of the socioeconomic condition of areas. The Index of Relative Socioeconomic Disadvantage is the SEIFA index most frequently used in health analysis. The particular attributes summarised by this index include low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations. Most commonly, SEIFA indices are used to group survey respondents into quintiles or deciles of a particular index. Comparisons can then be made between respondents living in areas based on SEIFA quintiles (or deciles) across a range of health-related characteristics such as self-assessed health status.

The Indices are compiled at the level of the Census Collector’s District (CD) in which a person lives but are most commonly reported at the Statistical Local Area (SLA) level.

Infant mortality rate – the number of deaths of children under one year of age per 1,000 live births.

Life expectancy – the average number of years a newborn infant of a given sex would be expected to live if the age specific death rates of the reference period continued throughout his or her lifetime. For persons aged 65 years of a given sex, it is the average additional years of life expected if the age specific death rates of the reference period continued throughout his or her remaining life.

Live birth – the delivery of a child weighing at least 500 grams at delivery (or, when birthweight is unavailable, of at least 22 weeks gestation) who after being born, breathed or showed any other evidence of life such as a heart beat.

Metabolic syndrome – the term given to a clustering of CHD risk factors with insulin resistance at its core. The European Group for the Study of Insulin Resistance (EGIR) defines metabolic syndrome as the presence of insulin resistance and at least two of the following components: impaired glucose metabolism (impaired glucose tolerance (IGT) or impaired fasting glycaemia (IFG) or diabetes), hypertension, dyslipidaemia or central obesity. Analysis of AusDiab data reported in the HDQ used the EGIR definition, minus the insulin resistance requirement.

Neonatal death – death of any child weighing at least 500 grams at delivery (or, when birthweight is unavailable, of at least 22 weeks gestation) who was born alive (as defined under live birth) and who died within 28 days of birth.
Notifiable conditions – Under section 32(1) of the Health Act 1937 any disease or disability may be declared notifiable. The list of notifiable conditions appears in the schedule of the Health Regulations 1996. Medical practitioners and laboratories are required to notify the Chief Health Officer of Queensland Health of any person suffering from a notifiable condition.

Perinatal mortality rate – the annual number of foetal and neonatal deaths per 1,000 live births and foetal deaths combined.

Primary prevention is the protection of health by measures which eliminate causes and determinants of departures from good health and control exposure to risk. Primary prevention decreases the number of new cases of a disorder or illness and premature death (reduces incidence).156

Secondary prevention is defined as the measures available to individuals and populations for the early detection and prompt and effective intervention to correct departures from good health. Secondary prevention may lower the rate of established disease in the community.156

Social capital consists of those features of social organisation such as density of association membership, levels of interpersonal trust and norms of reciprocity (ie give and take or mutual action) which act as resources for individuals and facilitate collective action. It is a collective dimension of society external to the individual and is an ecological characteristic.

Standardisation of rates is a method used to compare populations which have different age-sex structures thereby precluding the comparison of unadjusted outcome rates. Two methods are available: direct and indirect standardisation. The direct rate is the rate experienced by a standard population, if the age specific rates of the population in the geographical area of interest applied to the standard population. The indirect rate is the ratio of the total number of people observed (actual number) having an attribute compared to the total number of people expected (expected number) having an attribute (disease or condition, cause of death) in the geographical area of interest. The expected number is calculated based upon the assumption that the population in the geographical area of interest experienced the same age specific rates as the standard population.

The standard population used in this report varies according to the years of data that are being considered for the population of interest. Typically the standard population is the estimated resident population for Australia 1991.

Tertiary prevention consists of the measures available to reduce or eliminate long term impairments, disabilities and complications from established disease, and to minimise suffering caused by existing departures from good health.156