# Appendix I: Statistical methods

This section describes the methods used to calculate the estimates presented in this publication. All estimates are age-standardised to the 1991 (final) Australian population in this report. However, crude rates and age-specific rates are necessary precursors to obtaining age-standardised rates. Therefore, we present information on how to produce these measures even though they are not presented in this report.

#### **Crude rates**

A crude death rate is defined as the number of deaths from a specific cause over a specified period of time (e.g. a year) divided by the total population. A crude cancer incidence rate is similarly defined as the number of new cases of cancer in a specified period of time divided by the population at risk. Likewise, a crude hospital separation rate is defined as the number of individuals who complete an episode of hospital care within a specified period of time divided by the total population. Crude death rates and cancer incidence rates are usually expressed as annual rates per 100,000 population and may be calculated for males, females, persons or some subset of the population. Hospital separation rates are generally expressed per 1,000 population.

# **Age-specific rates**

Age-specific rates are calculated by dividing the number of deaths, cancer cases or hospital separations occurring in each specified age group by the corresponding population in the same age group. The rates are expressed per 100,000 population for deaths and cancer incidence and per 1,000 population for hospital separations.

# Age-standardised rates (ASR)

Age-standardised rates enable comparisons to be made between populations which have different age structures. In this publication, we use direct standardisation in which the age-specific rates are multiplied by a constant population. This effectively removes the influence of the age structure on the summary rate. All rates are age-standardised to the 1991 (final) Australian population using the direct standardisation technique. The method used for this calculation is composed of three steps:

- *Step 1:* Calculate the age-specific rate for each age group.
- Step 2: Calculate the expected number of cases in each 5-year age group by multiplying the age-specific rates by the corresponding standard population and dividing by 100,000 to get the expected number of cases.
- Step 3: Sum the expected number of cases in each age group and divide by the total of the standard population and multiply by 100,000 (or 1,000 for hospital separations).

#### **Confidence intervals**

Statistical tests were carried out on the calculated rates to determine the degree to which the differences between 'capital cities' and each of the other RRMA categories are greater than would be expected by chance.

For estimates derived from the ABS 1995 National Health Survey, standard errors were approximated by using the sample size in the survey for each RRMA category and multiplying it by the relative standard error. Relative standard errors were obtained by size of estimate from the ABS technical note in 1995 National Health Survey: Summary of Results (ABS 1997d). The resulting standard errors were applied to the derived proportions from the ABS 1995 National Health Survey to calculate t-values relative to the value for 'capital cities' for each RRMA category. The t-values were calculated as follows:

$$\frac{r_1 - r_2}{se(r_1) + se(r_2)}$$

where  $r_1$  is the rate for any one of the seven RRMA categories and  $r_2$  is the rate for 'capital cities'. The *t*-values with *p*-values of 0.05 or lower were considered to be significantly different from 'capital cities'.

For all other health indicators, the variance in the age-standardised rates was calculated according to the formula:

$$Var(ASR) = \sum_{i=1}^{A} \frac{[a_i w_i^2 (100,000 - a_i)]}{\left(\sum_{i=1}^{A} w_i\right)}$$

where  $a_i$  represents the age-specific rate in the ith age group and  $w_i$  is the population present in the ith age group of the standard population. The standard error of the ASR (se(ASR)) was then calculated as:

$$se(ASR) = \sqrt{Var(ASR)}$$

The standard error of the age-standardised rate was used to calculate 95% confidence intervals for the rates according to the formula:

$$ASR \pm 1.96 \times (se(ASR))$$

These confidence intervals represent a range of values within which it is 95% certain that the true value of the rate is present. If the 95% confidence interval includes one (unity), then the rate is deemed not to be statistically significantly different from the rate for 'capital cities'.

# Interpretation of statistics

The RRMA classification breaks Australia's population into seven categories with the majority of the population distributed in the two metropolitan zone categories, 'capital cities' and 'other metropolitan areas'. The population sizes in rural and especially remote categories are considerably smaller, and this has an effect on the power of statistical tests to detect a difference between rates in 'capital cities' and those for the remaining RRMA categories. This is especially

the case for the ABS 1995 National Health Survey data. Sample sizes in rural and remote zones for the survey were considerably smaller than for the metropolitan zone RRMA categories. Therefore, apparent differences between 'capital cities' and rural and remote categories may not be statistically significant at the 5% level and we cannot determine if the differences are real or are random variations. The statistical tests used in this study may not have the power to detect even large differences because of the relatively small sample sizes in rural and remote zones. As a result, caution should be used when making inferences about the data in this report.

# Appendix II: Statistical Local Areas by State by RRMA classification

#### **Abbreviations**

B Borough C City

CGC Community Government Council

DC District Council M Municipality

RC Rural City S Shire

SSD-Bal Statistical Subdivision (Balance)

T Town

#### **New South Wales**

#### **Capital cities**

Ashfield (M)
Auburn (M)
Bankstown (C)
Baulkham Hills (S)
Blacktown (C)
Blue Mountains (C)

Botany (M)
Burwood (M)
Camden (M)
Campbelltown (C)
Canterbury (M)
Concord (M)
Drummoyne (M)
Fairfield (C)
Gosford (C)

Hawkesbury (C)
Holroyd (C)
Hornsby (S)
Hunter's Hill (M)
Hurstville (C)
Kogarah (M)
Ku-ring-gai (M)

Leichhardt (M)

Liverpool (C)
Manly (M)
Marrickville (M)
Mosman (M)
North Sydney (M)

Parramatta (C)
Penrith (C)
Randwick (M)
Rockdale (M)

Ryde (M)

South Sydney (C) Strathfield (M) Sutherland (S) Sydney (C)—Inner Sydney (C)—Remainder

Warringah (S)
Waverley (M)
Willoughby (C)
Wollondilly (S)
Woollahra (M)
Wyong (S)

#### Other metropolitan centres

Cessnock (C) Kiama (M)

Lane Cove (M)

Lake Macquarie (C)

Maitland (C)

Newcastle (C)—Inner Newcastle (C)—Remainder

Port Stephens (S) Tweed (S)—Pt A
Queanbeyan (C) Wollongong (C)

Shellharbour (M)

#### Large rural centres

Albury (C) Orange (C)
Dubbo (C) Tamworth (C)
Hastings (M) Wagga Wagga (C)

Lismore (C)

#### **Small rural centres**

Armidale (C)

Ballina (S)

Greater Taree (C)

Pathurst (C)

Greifith (C)

Bathurst (C) Griffith (C)
Broken Hill (C) Moree Plains (S)
Casino (M) Murray (S)

Coffs Harbour (C) Muswellbrook (S)
Goulburn (C) Shoalhaven (C)
Grafton (C) Singleton (S)

Great Lakes (S)

#### Other rural areas

Barraba (S) Evans (S)—Pt A
Bega Valley (S) Evans (S)—Pt B
Bellingen (S) Forbes (S)
Berrigan (S) Gilgandra (S)
Bingara (S) Glen Innes (M)
Bland (S) Gloucester (S)

Blayney (S)—Pt A Gundagai (S)
Blayney (S)—Pt B Gunnedah (S)
Bombala (S) Gunning (S)
Boorowa (S) Guyra (S)
Byron (S) Harden (S)
Cabonne (S)—Pt A Holbrook (S)

 Cabonne (S)—Pt B
 Hume (S)

 Cabonne (S)—Pt C
 Inverell (S)—Pt A

 Conargo (S)
 Inverell (S)—Pt B

 Coolah (S)
 Jerilderie (S)

 Coolamon (S)
 Junee (S)

 Cooma-Monaro (S)
 Kempsey (S)

Cooma-Monaro (S) Coonabarabran (S) Kyogle (S) Coonamble (S) Leeton (S) Cootamundra (S) Lockhart (S) Copmanhurst (S) Maclean (S) Corowa (S) Manilla (S) Cowra (S) Merriwa (S) Crookwell (S) Mudgee (S) Culcairn (S) Mulwaree (S) Deniliquin (M) Murrumbidgee (S)

Dumaresq (S)Murrurundi (S)Dungog (S)Nambucca (S)Eurobodalla (S)Narrabri (S)

Narrandera (S) Tumbarumba (S)

Narromine (S) Tumut (S)

Nundle (S) Tweed (S)-Pt B

Nymboida (S) Ulmarra (S)

Oberon (S) Uralla (S)

Parkes (S) Urana (S)

Parry (S) Walcha (S) Quirindi (S) Warren (S)

Richmond River (S) Weddin (S) Rylstone (S) Wellington (S)

Scone (S) Wingecarribee (S) Severn (S) Yallaroi (S)

Snowy River (S) Yarrowlumla (S)

Tallaganda (S) Yass (S)

Temora (S) Young (S)

Tenterfield (S)

#### Other remote areas

Balranald (S) Lachlan (S) Bogan (S) Lord Howe Island

Bourke (S) Off-Shore Areas & Migratory

Brewarrina (S) Unincorp. Far West

Carrathool (S) Wakool (S) Central Darling (S) Walgett (S)

Wentworth (S) Cobar (S) Hay (S) Windouran (S)

# Victoria

#### **Capital cities**

Altona (C) Footscray (C)

Berwick (C) Frankston (C)

Box Hill (C) Hastings (S)

Brighton (C) Hawthorn (C) Healesville (S) Broadmeadows (C)

Brunswick (C) Heidelberg (C)

Bulla (S) Keilor (C) Camberwell (C) Kew (C) Caulfield (C) Knox (C)

Chelsea (C) Lillydale (S) Coburg (C) Malvern (C)

Collingwood (C) Melbourne (C)-Inner

Cranbourne (S) Melbourne (C)—Remainder Melton (S) Croydon (C) Dandenong (C) Moorabbin (C)

Diamond Valley (S) Mordialloc (C) Doncaster & Templestowe (C) Mornington (S)

Eltham (S) Northcote (C) Essendon (C) Nunawading (C) Fitzroy (C) Oakleigh (C)

Flinders (S) Pakenham (S)

Port Melbourne (C)

Prahran (C)

Preston (C)

Springvale (C)

St Kilda (C)

Sunshine (C)

Richmond (C) Upper Yarra (S)—Pt A

Ringwood (C) Waverley (C)
Sandringham (C) Werribee (C)
Sherbrooke (S) Whittlesea (C)
South Melbourne (C) Williamstown (C)

#### Other metropolitan centres

Bannockburn (S)—Pt A Geelong (C)
Barrabool (S)—Pt A Geelong West (C)
Bellarine (RC)—Pt A Newtown (C)

Corio (S)—Pt A South Barwon (C)—Pt A

#### Large rural centres

Ballarat (C) Huntly (S)—Pt A
Ballarat (S)—Pt A Marong (RC)—Pt A
Bendigo (C) Rodney (S)—Pt A
Bungaree (S)—Pt A Sebastopol (B)
Buninyong (S)—Pt A Shepparton (C)

Eaglehawk (B) Strathfieldsaye (S)—Pt A

Grenville (S)—Pt A Wodonga (RC)

#### **Small rural centres**

Bairnsdale (C) Morwell (C)—Pt A
Bellarine (RC)—Pt B Narracan (S)—Pt A

Colac (C) Portland (C) Colac (S) Sale (C)

Echuca (C) South Barwon (C)—Pt B

Horsham (C) Traralgon (C)
Mildura (C) Wangaratta (C)
Mildura (S)—Pt A Warrnambool (C)

Moe (C)

#### Other rural areas

Alberton (S)

Alexandra (S)

Arapiles (S)

Benalla (C)

Benalla (S)

Benalla (S)

Ararat (C)

Bet Bet (S)

Ararat (S)

Ararat (S)

Birchip (S)

Avoca (S)

Avon (S) Broadford (S)
Bacchus Marsh (S) Buln Buln (S)
Bairnsdale (S)—Pt A Bungaree (S)—Pt B

Bairnsdale (S)—Pt B
Ballan (S)
Ballarat (S)—Pt B
Camperdown (T)
Ballarat (S)—Pt B
Castlemaine (C)

Bannockburn (S)—Pt B Charlton (S)
Barrabool (S)—Pt B Chiltern (S)
Bass (S) Cobram (S)
Beechworth (S) Cohuna (S)

Corio (S)-Pt B Numurkah (S) Creswick (S) Omeo (S) Daylesford & Glenlyon (S) Otway (S) Deakin (S) Oxley (S) Dimboola (S) Phillip Island (S) Port Fairy (B) Donald (S) Dundas (S) Pyalong (S) Dunmunkle (S) Queenscliffe (B) East Loddon (S) Ripon (S) Euroa (S) Rochester (S) Gisborne (S) Rodney (S)-Pt B Glenelg (S) Romsey (S) Gordon (S) Rosedale (S) Goulburn (S) Rutherglen (S) Grenville (S)-Pt B Seymour (S) Hamilton (C) Shepparton (S)-Pt A Shepparton (S)-Pt B Hampden (S) Heytesbury (S) South Gippsland (S) Heywood (S) St Arnaud (T) Huntly (S)-Pt B Stawell (C) Kara Kara (S) Stawell (S) Karkarooc (S) Strathfieldsaye (S)-Pt B Kerang (B) Swan Hill (C) Kerang (S) Swan Hill (S) Kilmore (S) Talbot & Clunes (S) Korong (S) Tallangatta (S)-Pt A Korumburra (S) Tallangatta (S)-Pt B Kowree (S) Tambo (S)-Pt A Kyabram (T) Tambo (S)-Pt B Kyneton (S) Traralgon (S)-Pt A Lady Julia Percy & Towerhill Traralgon (S)-Pt B Leigh (S) Tullaroop (S) Lexton (S) Tungamah (S) Lowan (S) Upper Murray (S) Maffra (S) Upper Yarra (S)-Pt B Maldon (S) Violet Town (S) Mansfield (S) Wangaratta (S) Wannon (S) Marong (RC)-Pt B Maryborough (C) Waranga (S) McIvor (S) Warracknabeal (S) Metcalfe (S) Warragul (S) Minhamite (S) Warrnambool (S) Wimmera (S) Mirboo (S) Mortlake (S) Winchelsea (S) Morwell (C)—Pt B Wonthaggi (B) Mount Rouse (S) Woorayl (S) Myrtleford (S) Wycheproof (S) Narracan (S)-Pt B Yackandandah (S) Nathalia (S) Yallourn Works Area Yarrawonga (S) Newham & Woodend (S) Yea (S) Newstead (S)

#### Other remote areas

Bass Strait Islands Off-Shore Areas & Migratory

French Island Orbost (S)
Kaniva (S) Walpeup (S)

Mildura (S)-Pt B

#### Queensland

#### **Capital cities**

Acacia Ridge Capalaba West
Albany Creek Carbrook-Cornubia

Albert (S) Bal in BSD Carina

Albion Carina Heights
Alderley Carindale
Alexandra Hills Carole Park
Algester Carseldine
Annerley Chandler

Anstead (incl. Moggill SF) Chapel Hill Arana Hills Chelmer Archerfield Chermside Ascot Chermside West City-Inner Ashgrove Aspley City—Remainder **Bald Hills** Clayfield Balmoral Cleveland Coopers Plains Banyo Bardon Coorparoo

Beaudesert (S) Bal in BSD Corinda

BeenleighDaisy Hill-PriestdaleBellbird ParkDarra-SumnerBellbowrieDeagonBelmont-MackenzieDoolandellaBerrinbaDurack

Bethania-Waterford Dutton Park
Birkdale Eagleby
Boondall East Brisbane

Bowen Hills Edens Landing-Holmview
Bracken Ridge Eight Mile Plains

Bray Park Ellen Grove

Bridgeman Downs Enoggera (incl. Mltry Camp)

Brighton Everton Hills
Brookfield (incl. Mt C'tha Pk) Everton Park
Browns Plains Fairfield
Bulimba Ferny Grove
Burbank Ferny Hills

Caboolture (S)—Pt A Fig Tree Pocket
Calamvale Fortitude Valley—Inner
Camira Fortitude Valley—Remainder

Camp Hill Geebung
Cannon Hill Graceville
Capalaba Grange

Greenbank-Pt A Murarrie Greenbank-Pt B Nathan Greenslopes New Farm Gumdale Newmarket Hamilton Newstead Hawthorne Norman Park Hemmant-Lytton Northgate Hendra Nudgee Herston Nudgee Beach Highgate Hill Nundah Holland Park Ormiston Holland Park West Oxley Paddington Inala

Indooroopilly Pallara-Heathwood-Larapinta

Ipswich (C) Parkinson-Drewvale

Jamboree Heights Petrie

Jindalee Pine Rivers (S) Bal Kallangur Pinjarra Hills

Kangaroo Point Pinkenba-Eagle Farm

Karalee Pullenvale Karawatha Ransome Kedron Red Hill Redcliffe (C) Kelvin Grove Kenmore Redland (S) Bal Kenmore Hills Redland Bay Keperra Richlands Kingston Riverhills Kuraby Robertson Lawnton Rochedale Rochedale South Logan (C) Bal

LoganholmeRockleaLoganleaRuncornLotaSalisburyLutwycheSandgate

MacGregor Seventeen Mile Rocks

Manly Shailer Park
Manly West Sheldon-Mt Cotton

MansfieldSherwoodMarsdenSlacks CreekMcDowallSouth BrisbaneMiddle ParkSpring HillMiltonSpringwoodMitcheltonSt LuciaMoggillStafford

MoorookaStafford HeightsMoreton (S) Bal in BSD—NthStrathpineMoreton (S) Bal in BSD—SthStrettonMoreton IslandSunnybank

Morningside Sunnybank Hills
Mount Gravatt Taigum-Fitzgibbon
Mount Gravatt East Tanah Merah
Mount Ommaney Taringa
Mt Warren Park Tarragindi

The Gap (incl. Enoggera SF)

Wellington Point
Thorneside

West End

Thornlands

Westlake

Tingalpa

Willawong

Toowong

Wilston

Underwood—Pt A Windaroo-Bannockburn

Underwood-Pt B Windsor Upper Brookfield Wishart Upper Kedron Woodridge **Upper Mount Gravatt** Woolloongabba Victoria Point Wooloowin Virginia Wynnum Wacol Wynnum West Wakerlev Yeerongpilly Waterford West Yeronga Wavell Heights Zillmere

#### Other metropolitan centres

Aitkenvale Magnetic Island

Albert (S)—Pt B Bal Main Beach-Broadwater

Arundel Mermaid Beach
Ashmore Mermaid Waters

Benowa Miami

Biggera Waters Mt Louisa-Mt St John-Bohle

Bilinga Mudgeeraba
Broadbeach Mundingburra
Broadbeach Waters Murray
Bundall Nerang

Burleigh Heads North Ward-Castle Hill
Burleigh Waters Oonoonba-Idalia-Cluden

Carrara-Merrimac Oxenford

City Pallarenda-Shelley Beach

CoolangattaPalm BeachCoombabahParadise PointCranbrookParkwoodCurrajongPimlicoCurrumbinRailway Estate

Currumbin Waters Robina-Clear Island Waters

Douglas Rosslea

Elanora Rowes Bay-Belgian Gardens

Ernest-Molendinar Runaway Bay
Garbutt South Townsville
Gulliver Southport
Heatley Stuart-Roseneath

Helensvale Surfers Paradise
Hermit Park Thuringowa (C)—Pt A Bal

Hollywell Townsville (C) Bal Hope Island Tugun

Hyde Park-MystertonVincentKelsoWest EndKerrydale-StephensWorongary-Tallai

Nerrydaie-Stephens Wordingary-Talia

Kirwan Wulguru

Labrador

#### Large rural centres

Bundaberg (C) Mulgrave (S)—Pt A
Cairns (C) Pioneer (S)—Pt A
Gooburrum (S)—Pt A
Rockhampton (C)
Mackay (C) Toowoomba (C)

Maroochy (S)—Pt A Woongarra (S)—Pt A

#### **Small rural centres**

Caloundra (C)—Pt A Maryborough (C)
Gladstone (C) Noosa (S)—Pt A
Gympie (C) Noosa (S)—Pt B
Hervey Bay (C) Warwick (C)

#### Other rural areas

 Allora (S)
 Jondaryan (S)

 Atherton (S)
 Kilcoy (S)

 Banana (S)
 Kilkivan (S)

 Beaudesert (S)—Pt B
 Kingaroy (S)

Beaudesert (S)—Pt B

Biggenden (S)

Boonah (S)

Burdekin (S)

Caboolture (S)—Pt B

Calliope (S)—Pt A

Calliope (S)—Pt B

Millmerran (S)

Mirani (S)

Calliope (S)—Pt A

Calliope (S)—Pt B

Caloundra (C)—Pt B

Cambooya (S)

Cardwell (S)

Millmerran (S)

Miram (S)

Miriam Vale (S)

Monto (S)

Moreton (S)—Pt B

Charters Towers (C) Mount Morgan (S) Chinchilla (S) Mulgrave (S)-Pt B Clifton (S) Mundubbera (S) Crow's Nest (S) Murgon (S) Dalby (T) Nanango (S) Douglas (S) Pioneer (S)-Pt B Eacham (S) Pittsworth (S) Esk (S) Rosalie (S)

Fitzroy (S)—Pt A Rosenthal (S)
Fitzroy (S)—Pt B Sarina (S)
Gatton (S) Stanthorpe (S)

Gayndah (S) Thuringowa (C)—Pt B

 Glengallan (S)
 Tiaro (S)

 Gooburrum (S)—Pt B
 Wambo (S)

 Goondiwindi (T)
 Whitsunday (S)

 Hinchinbrook (S)
 Widgee (S)

 Inglewood (S)
 Wondai (S)

 Isis (S)
 Woocoo (S)

Johnstone (S) Woongarra (S)—Pt B

#### Remote centres

Belyando (S) Mareeba (S)
Bowen (S) Mount Isa (C)
Duaringa (S) Roma (T)

Emerald (S)

#### Other remote areas

Aramac (S) Herberton (S) Aurukun (S) Ilfracombe (S) Balonne (S) Isisford (S) Barcaldine (S) Jericho (S) Barcoo (S) Longreach (S) Bauhinia (S) McKinlay (S) Bendemere (S) Mornington (S) Murilla (S) Blackall (S) Booringa (S) Murweh (S) Boulia (S) Nebo (S)

Broadsound (S) Off-Shore Areas & Migratory

Broadsound (S)

Bulloo (S)

Bungil (S)

Burke (S)

Carpentaria (S)

Cloncurry (S)

Cook (S) (excl. Weipa)

Oil-Snore Areas

Paroo (S)

Peak Downs (S)

Perry (S)

Quilpie (S)

Richmond (S)

Tambo (S)

Cook (S)—Weipa only
Croydon (S)
Dalrymple (S)
Diamantina (S)
Eidsvold (S)
Etheridge (S)
Tara (S)
Taroom (S)
Torres (S)
Unincorp. Islands
Waggamba (S)
Warroo (S)
Flinders (S)
Winton (S)

## **South Australia**

#### **Capital cities**

Adelaide (C) Munno Para (C) Brighton (C) Noarlunga (C) Burnside (C) Payneham (C) Port Adelaide (C) Campbelltown (C) East Torrens (DC) Prospect (C) Elizabeth (C) Salisbury (C) Enfield (C)—Pt A St Peters (M) Enfield (C)—Pt B Stirling (DC) Gawler (M) Tea Tree Gully (C) Glenelg (C) Thebarton (M)

Gawler (M)

Glenelg (C)

Happy Valley (C)

Henley & Grange (C)

The a Tree Gully (C)

Thebarton (M)

Unincorp. Western

Unley (C)

Hindmarsh (M)

Kensington & Norwood (C)

Marion (C)

Mitcham (C)

Walkerville (M)

West Torrens (C)

Willunga (DC)

Woodville (C)

#### Large rural centres

Whyalla (C)

#### **Small rural centres**

Mount Gambier (C) Murray Bridge (DC)

Port Augusta (C)

Port Lincoln (C)

Port Pirie (C)

#### Other rural areas

Angaston (DC)

Barmera (DC)

Barossa (DC)

Mount Remarkable (DC)

Naracoorte (DC)

Naracoorte (M)

Beachport (DC)

Northern Yorke Peninsula (DC)

 Berri (DC)
 Onkaparinga (DC)

 Blyth-Snowtown (DC)
 Orroroo (DC)

 Burra Burra (DC)
 Paringa (DC)

 Bute (DC)
 Peake (DC)

Central Yorke Peninsula (DC)

Clare (DC)

Cleve (DC)

Penola (DC)

Peterborough (M)

Pinnaroo (DC)

Coonalpyn Downs (DC) Pirie (DC)

Crystal Brook-Redhill (DC)

Eudunda (DC)

Franklin Harbor (DC)

Port Broughton (DC)

Port Elliot & Goolwa (DC)

Port MacDonnell (DC)

Hallett (DC) Renmark (M)
Hawker (DC) Ridley (DC)
Jamestown (DC) Riverton (DC)
Kanyaka-Quorn (DC) Robertstown (DC)
Karoonda-East Murray (DC) Rocky River (DC)
Kimba (DC) Rocky River (DC)

Lacepede (DC)
Saddleworth & Auburn (DC)

Lameroo (DC)Spalding (DC)Light (DC)Strathalbyn (DC)Lower Eyre Peninsula (DC)Tanunda (DC)

Loxton (DC)
Lucindale (DC)
Mallala (DC)
Mannum (DC)
Meningie (DC)
Millicent (DC)
Tatiara (DC)
Truro (DC)
Tumby Bay (DC)
Unincorp. Murray Mallee
Victor Harbor (DC)
Waikerie (DC)

Minlaton (DC) Wakefield Plains (DC)

Morgan (DC) Wallaroo (M)

Mount Barker (DC) Warooka (DC)

Mount Gambier (DC) Yankalilla (DC)

Mount Pleasant (DC) Yorketown (DC)

#### Other remote areas

Browns Well (DC)

Carrieton (DC)

Coober Pedy (DC)

Dudley (DC)

Roxby Downs (M)

Streaky Bay (DC)

Unincorp. Far North

Unincorp. Flinders Ranges

Elliston (DC)

Unincorp. Lincoln

Kingscote (DC)

Le Hunte (DC)

Unincorp. Riverland

Le Hunte (DC)Unincorp. RiverlandMurat Bay (DC)Unincorp. West CoastOff-Shore Areas & MigratoryUnincorp. WhyallaPeterborough (DC)Unincorp. Yorke

#### Western Australia

#### **Capital cities**

Armadale (C) Nedlands (C)

Bassendean (T)

Peppermint Grove (S)

Bayswater (C)

Perth (C)—Inner

Belmont (C)

Canning (C)

Perth (C)—Outer

Claremont (T)

Perth (C)—South

Cockburn (C) Perth (C)—Wembley-Coastal

Cottesloe (T) Rockingham (C)

East Fremantle (T) Serpentine-Jarrahdale (S)

Fremantle (C)—Inner

South Perth (C)

Fremantle (C)—Remainder

Stirling (C)—Central

Gosnells (C) Stirling (C)—South-Eastern

Kalamunda (S)Stirling (C)—WestKwinana (T)Subiaco (C)Melville (C)Swan (S)Mosman Park (T)Wanneroo (C)

Mundaring (S)

#### **Small rural centres**

Albany (S) Geraldton (C)
Albany (T) Greenough (S)
Bunbury (C) Mandurah (C)

#### Other rural areas

Augusta-Margaret River (S)Kojonup (S)Beverley (S)Manjimup (S)Boddington (S)Moora (S)Boyup Brook (S)Murray (S)Bridgetown-Greenbushes (S)Nannup (S)

Brookton (S) Narrogin (S) Busselton (S) Narrogin (T) Capel (S) Northam (S) Chittering (S) Northam (T) Collie (S) Pingelly (S) Corrigin (S) Plantagenet (S) Cuballing (S) Quairading (S) Cunderdin (S) Tambellup (S)

Cunderdin (S)
Cunderdin (S)

Dandaragan (S)

Dardanup (S)

Tambellup (S)

Tammin (S)

Toodyay (S)

Denmark (S)

Victoria Plains (S)

Donnybrook-Balingup (S)Wagin (S)Dowerin (S)Wandering (S)Gingin (S)Waroona (S)Goomalling (S)West Arthur (S)Harvey (S)Williams (S)

Irwin (S)Wongan-Ballidu (S)Katanning (S)Wyalkatchem (S)

Kellerberrin (S) York (S)

#### Remote centres

Broome (S)

Carnarvon (S)

East Pilbara (S)

Kalgoorlie/Boulder (C)

Port Hedland (T)

Roebourne (S)

Esperance (S)

#### Other remote areas

Ashburton (S) Merredin (S) Broomehill (S) Mingenew (S) Bruce Rock (S) Morawa (S) Carnamah (S) Mount Magnet (S) Chapman Valley (S) Mount Marshall (S) Coolgardie (S) Mukinbudin (S) Coorow (S) Mullewa (S) Cranbrook (S) Murchison (S)

Cue (S) Narembeen (S) Dalwallinu (S) Northampton (S)

Derby-West Kimberley (S)

Nungarin (S)

Dumbleyung (S)Off-Shore Areas & MigratoryDundas (S)Perenjori (S)Exmouth (S)Ravensthorpe (S)Gnowangerup (S)Sandstone (S)Halls Creek (S)Shark Bay (S)

Halls Creek (S)

Jerramungup (S)

Kent (S)

Kondinin (S)

Koorda (S)

Shark Bay (S)

Three Springs (S)

Trayning (S)

Upper Gascoyne (S)

Westonia (S)

Koorda (S)Westonia (S)Kulin (S)Wickepin (S)Lake Grace (S)Wiluna (S)Laverton (S)Woodanilling (S)Leonora (S)Wyndham-East Kimberley (S)

Meekatharra (S) Yalgoo (S)
Menzies (S) Yilgarn (S)

# **Tasmania**

#### **Capital cities**

Brighton (M)—Pt A Hobart (C)—Remainder
Clarence (C) Kingborough (M)—Pt A
Glenorchy (C) New Norfolk (M)—Pt A
Hobart (C)—Inner Sorell (M)—Pt A

#### Large rural centres

Beaconsfield (M)—Pt A Launceston (C)—Pt B Launceston (C)—Inner Westbury (M)—Pt A

#### **Small rural centres**

Burnie (C)—Pt A Wynyard (M)—Pt A

Devonport (C)

#### Other rural areas

Beaconsfield (M)—Pt B Longford (M)—Pt A Bothwell (M) Longford (M)—Pt B

Brighton (M)—Pt B Lyell (M)

Bruny (M) New Norfolk (M)—Pt B

Burnie (C)—Pt B Oatlands (M)
Campbell Town (M) Penguin (M)—Pt A
Circular Head (M) Penguin (M)—Pt B
Deloraine (M) Port Cygnet (M)
Esperance (M) Portland (M)
Evandale (M)—Pt A Richmond (M)
Evandale (M)—Pt B Ringarooma (M)

Fingal (M)

George Town (M)—Pt A

George Town (M)—Pt B

Glamorgan (M)

Green Ponds (M)

Ross (M)

Scottsdale (M)

Sorell (M)—Pt B

Spring Bay (M)

Tasman (M)

Hamilton (M) Ulverstone (M)—Pt A Huon (M) Ulverstone (M)—Pt B

Kentish (M) Waratah (M)

Kingborough (M)—Pt B

Latrobe (M)—Pt A

Westbury (M)—Pt B

Wynyard (M)—Pt B

Zeehan (M)

Launceston (C)-Pt C

#### Other remote areas

Flinders (M) Off-Shore Areas & Migratory

King Island (M) Strahan (M)

# **Northern Territory**

#### **Capital cities**

Alawa Millner
Anula Moil
Brinkin Moulden
City—Inner Nakara
City—Remainder Narrows
Coconut Grove Nightcliff

Driver Palmerston (T)—Bal

East Arm Parap
Fannie Bay Rapid Creek
Gray Stuart Park
Jingili The Gardens

Karama Tiwi
Larrakeyah Wagaman
Leanyer Wanguri
Lee Point-Leanyer Swamp Winnellie
Ludmilla Woodroffe

Malak Wulagi

Marrara

Other rural areas

Coomalie (CGC) Litchfield (S)—Pt B

Litchfield (S)-Pt A

Remote centres

Alice Springs (T) Katherine (T)

Other remote areas

Bathurst-Melville Petermann
Cox-Finniss Sandover—Bal
Daly South Alligator
East Arnhem—Bal Tableland
Elsey—Bal Tanami

Groote Eylandt Tennant Creek (T)
Gulf Tennant Creek—Bal

Jabiru (T) Victoria
Nhulunbuy West Arnhem

Off-Shore Areas & Migratory

# **Australian Capital Territory**

#### **Capital cities**

Acton Forrest Ainslie Fraser Aranda **Fyshwick** Barton Garran Belconnen Town Centre Gilmore Belconnen—SSD Bal Giralang Bonython Gordon Braddon Gowrie Bruce Greenway Calwell Griffith Campbell Gungahlin Hackett Chapman Charnwood Hall Chifley Harman Chisholm Hawker City Higgins Cook Holder Curtin Holt Deakin Hughes Dickson Hume Downer Isaacs Duffy Isabella Plains

Duntroon Jerrabomberra
Evatt Kaleen
Fadden Kambah

Farrer Kingston
Fisher Kowen
Florey Latham
Flynn Lyneham

Reid Lyons Richardson Macarthur Macgregor Rivett Russell Macquarie Majura Scullin Mawson Spence McKellar Stirling Melba Stromlo Mitchell Symonston Monash Theodore Narrabundah Torrens

Oaks Estate Tuggeranong—SSD Bal

O'Connor Turner
O'Malley Wanniassa
Oxley Waramanga
Page Watson
Parkes Weetangera
Pearce Weston

Phillip Weston Creek—SSD Bal

Pialligo Yarralumla

Red Hill

Other rural areas

Jervis Bay Territory Remainder of ACT

# References

Abraham B, d'Espaignet ET & Stevenson C 1995. Australian health trends 1995. Canberra: AIHW.

Anderson P, Bhatia K & Cunningham J 1996. Occasional paper: mortality of Indigenous Australians. ABS Cat. No. 3315.0, AIHW Cat. No. IHW 1. Canberra: AGPS.

Anderson C, Jamrozik K, Broadhurst R & Stewart-Wynne E 1994. Predicting survival among different subtypes of stroke: experience from the Perth Community Stroke Study, 1989–1990. Stroke 25: 1935–44.

Anderson C, Jamrozik K, Burvill P, Chakera T, Johnson G & Stewart-Wynne E 1993. Ascertaining the true incidence of stroke: experience from the Perth Community Stroke Study, 1989–1990. Med J Aust 158: 80–84.

Arundell L 1991. Rural, remote and metropolitan zones classification: a classification of Australia as of 30 June 1986 and a methodology for 1991 Census data. Canberra: DPIE.

Australian Bureau of Statistics (ABS) 1993. Information paper: 1991 Census – socio-economic indexes for areas. ABS Cat. No. 2912.0. Canberra: AGPS.

Australian Bureau of Statistics (ABS) 1995. Australian standard geographical classification. ABS Cat. No. 1216.0. Canberra: AGPS.

Australian Bureau of Statistics (ABS) 1997a. Causes of death Australia, 1996. ABS Cat. No. 3303.0. Canberra: AGPS.

Australian Bureau of Statistics (ABS) 1997b. Deaths Australia, 1996. ABS Cat. No. 3302.0. Canberra: AGPS.

Australian Bureau of Statistics (ABS) 1997c. 1995 National Health Survey. Cardiovascular and related conditions Australia. ABS Cat. No. 4372.0. Canberra: AGPS.

Australian Bureau of Statistics (ABS) 1997d. 1995 National Health Survey. Summary results, Australian States and Territories. ABS Cat. No. 43680.0. Canberra: AGPS.

Australian Bureau of Statistics (ABS) 1997e. Population by age and sex, Australia, States and Territories. ABS Cat. No. 3201.0. Canberra: AGPS.

Australian Bureau of Statistics (ABS) 1998a. Australian demographic statistics, March quarter 1998. ABS Cat. No. 3101.0. Canberra: AGPS.

Australian Bureau of Statistics (ABS) 1998b. Causes of infant and child deaths in Australia 1982–1996. ABS Cat. No. 4398.0. Canberra: AGPS.

Australian Bureau of Statistics (ABS) 1998c. Children's immunisation Australia, April 1995. ABS Cat. No. 4352.0. Canberra: AGPS.

#### References

Australian Bureau of Statistics (ABS) 1998d. Experimental estimates of the Aboriginal and Torres Strait Islander population. ABS Cat. No. 3230.0. Canberra: AGPS.

Australian Bureau of Statistics (ABS) 1998e. Regional population growth Australia, 1996–97. ABS Cat. No. 3218.0. Canberra: AGPS.

Australian Bureau of Statistics (ABS) & Australian Institute of Health and Welfare (AIHW) 1997. The health and welfare of Australia's Aboriginal and Torres Straits Islander peoples. ABS Cat. No. 4704.0, AIHW Cat. No. IHW 2. Canberra: AGPS.

Australian Health Ministers' Advisory Council (AHMAC) & Australian Institute of Health and Welfare (AIHW) 1997. The Aboriginal and Torres Strait Islander health information plan...This time, let's make it happen. AIHW Cat. No. HWI 12. Canberra: AIHW.

Australian Health Technology Advisory Committee (AHTAC) 1997. Colorectal cancer screening. Canberra: Commonwealth Department of Health and Family Services.

Australian Institute of Health and Welfare 1997a. Australian hospital statistics 1995–96. Health Services Series No. 10. AIHW Cat. No. HSE 3. Canberra: AIHW.

Australian Institute of Health and Welfare (AIHW) 1997b. Health expenditure bulletin no. 13, July 1997. AIHW Cat. No. HWE 4. Canberra: AIHW.

Australian Institute of Health and Welfare (AIHW) 1997c. Aged and respite care in Australia: extracts from recent publications. AIHW Cat. No. AGE 5. Canberra: AIHW.

Australian Institute of Health and Welfare (AIHW) 1997d. Nursing homes in Australia 1995–96: a statistical overview. Aged Care Statistics Series No. 1. AIHW Cat. No. AGE 6. Canberra: AIHW & DHFS.

Australian Institute of Health and Welfare (AIHW) 1997e. Hostels in Australia 1995–96: a statistical overview. Aged Care Statistics Series No. 2. AIHW Cat. No. AGE 7. Canberra: AIHW & DHFS.

Australian Institute of Health and Welfare (AIHW) 1997f. Australia's welfare 1997: services and assistance. Canberra: AIHW.

Australian Institute of Health and Welfare (AIHW) 1998a. Australia's health 1998: the sixth biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

Australian Institute of Health and Welfare (AIHW) 1998b. Medical labour force 1996. National Health Labour Force Series No. 13. AIHW Cat. No. HWL 10. Canberra: AIHW.

Australian Institute of Health and Welfare (AIHW) 1998c. Nursing labour force 1995. National Health Labour Force Series No. 11. AIHW Cat. No. HWL 6. Canberra: AIHW.

Australian Institute of Health and Welfare (AIHW) 1998d. Pharmacy labour force 1995. National Health Labour Force Series No. 12. AIHW Cat. No. HWL 9. Canberra: AIHW.

Australian Institute of Health and Welfare & Australasian Association of Cancer Registries 1998. Cancer in Australia 1991–1994 (with projections to 1999). Cancer Series No. 7. AIHW Cat. No. CAN 2. Canberra: AIHW.

Australian Institute of Health and Welfare (AIHW) & Australian Medical Workforce Advisory Committee (AMWAC) 1996. Australian medical workforce benchmarks. AMWAC Report 1996.1. Canberra: AGPS.

Australian Institute of Health and Welfare (AIHW) & Commonwealth Department of Health and Family Services (DHFS) 1997. First report on National Health Priority Areas 1996. AIHW Cat. No. PHE 1. Canberra: AIHW & DHFS.

Bhatia K & Anderson P 1995. An overview of Aboriginal and Torres Straits Islander health: present status and future trends. Canberra: AIHW.

Colaguiri S, Colaguiri R & Ward J 1998. National diabetes strategy and implementation plan. Canberra: Diabetes Australia.

Coley CM, Barry MJ, Fleming C et al. 1997. Early detection of prostate cancer, part 2: estimating risks, benefits and costs. Ann Int Med 126:468–79.

Commonwealth Department of Health and Family Services (DHFS) 1995. National drug strategy household survey. Canberra: AGPS.

Commonwealth Department of Health and Family Services (DHFS) 1997a. Australian casemix report on hospital activity 1995–96. Canberra: DHFS.

Commonwealth Department of Health and Family Services (DHFS) 1997b. Youth suicide in Australia: a background monograph. Canberra: AGPS.

Commonwealth Department of Health and Family Services & Australian Institute of Health and Welfare 1998a. National Health Priority Areas report. Injury prevention and control 1997. AIHW Cat. No. PHE 3. Canberra: DHFS & AIHW.

Commonwealth Department of Health and Family Services (DHFS) & Australian Institute of Health and Welfare (AIHW) 1998b. National Health Priority Areas report. Cancer control 1997. AIHW Cat. No. PHE 4. Canberra: DHFS & AIHW.

Cooper-Stanbury M, Solon R & Cook M 1994. Hospital utilisation and costs study 1991–92. Volume 1. A survey of public hospitals and related data. AIHW Health Services Series No. 5. Canberra: AGPS.

Day P, Lancaster P & Huang J 1997. Australia's mothers and babies 1995. Perinatal Statistics Series Number 6. Sydney: AIHW National Perinatal Statistics Unit.

Deeble J 1991. Medical services through Medicare. National Health Strategy Background Paper No. 2. Canberra: AGPS.

Department of Primary Industries and Energy & Department of Human Services and Health 1994. Rural, remote and metropolitan areas classification. 1991 Census edition. Canberra: AGPS.

d'Espaignet E, Measey M, Condon J et al. 1996. Cancer in the Northern Territory 1987–1993. Darwin: Northern Territory Health Services.

Dudley M, Kelk N, Florio T et al. 1997. Suicide among young rural Australians 1964–1993: a comparison with metropolitan trends. Soc Psychiatry Psychiatr Epidemiol 32:251–60.

Ellis PM & Collings SCD 1997. Mental health in New Zealand from a public health perspective. Wellington: Ministry of Health.

#### References

Fildes B 1994. Injury prevention among the elderly. Victorian Health Promotion Foundation Monograph Series. Melbourne: VicHealth.

Fragar LJ, Gray EJ, Franklin RJ & Petrauskas V 1997. A picture of health? A preliminary report of the health of country Australians, Volumes 1 & 2. Moree: The Australian Agricultural Health Unit.

Graham-Clarke P, Fisher J & Elkington J 1998. Preventing injuries from falls in older people. Sydney: National Centre for Health Promotion, Sydney University & NSW Health Department.

Harrison JE, Frommer MS, Ruck EA & Blyth FM 1989. Death as a result of work-related injury in Australia, 1982–1984. Med J Aust 150: 118–25.

Harvey R & Mathers C 1988. Hospital utilisation and costs study. Volume 1: commentary. Canberra: AIHW.

Hayward L, Zubrick SR & Silburn S 1992. Blood alcohol levels in suicide cases. J Epidemiol Community Health 46:256–60.

Healthsharing Women 1994. Women, health and the rural decline in Victoria. In Franklin MA, Short LM & Teather EK (eds). Country women at the crossroads. Armidale: University of New England Press, 92–98.

Holgate ST 1997. Asthma: a dynamic disease of inflammation and repair. In Chadwick D & Cardew G (eds). The rising trends in asthma. Ciba Foundation Symposium 206. Chichester: John Wiley & Sons Ltd.

Humphreys J & Rolley F 1991. Health and health care in rural Australia: a literature review. Armidale: Department of Geography and Planning.

Humphreys JS, Matthews-Cowey S & Weinand HC 1997. Factors in accessibility of general practice in rural Australia. Med J Aust 166: 577–580.

Jacomb PA, Jorm AF, Korten AE, Rodgers B, Henderson S & Christensen H 1997. GP attendance by elderly Australians: evidence for unmet need in elderly men. Med. J. Aust. 166:123–26.

Jelfs P, Coates M, Giles G et al. 1996. Cancer in Australia 1989–1990 (with projections to 1995). AIHW Cancer Series No. 5. Canberra: AIHW.

Jeuken 1995. Bigger than Mabo? Aboriginal health. Westlink-health promotion journal of the Castlereagh, Far West, Macquarie & Orana districts. Autumn:10–14.

 $Kliewer\ EV\ \&\ Butler\ JRG\ 1995.\ Hospital\ morbidity\ patterns\ and\ costs\ of\ immigrants\ in\ Australia.$  Canberra:\ National\ Centre\ for\ Epidemiology\ and\ Population\ Health.

Kricker A & Jelfs P 1996. Breast cancer in Australian women 1921–1994. AIHW Cancer Series No. 6. Canberra: AIHW.

Lester I 1994. Australia's food and nutrition. Canberra: AGPS.

Maclaren VW 1996. Urban sustainability reporting. J Am Plan Assoc 62(2):184-202.

Mathers CD 1994. Health differentials among adult Australians aged 25–64 years. Australian Institute of Health and Welfare: Health Monitoring Series No. 1. Canberra: AGPS.

Mathers CD 1995a. Health differentials among older Australians. AIHW: Health Monitoring Series No. 2. Canberra: AGPS.

Mathers CD 1995b. Health differentials among Australian children. AIHW: Health Monitoring Series No. 3. Canberra: AGPS.

Mathers CD 1996. Health differentials among young Australian adults. AIHW: Health Monitoring Series No. 4. Canberra: AGPS.

McCarty J, Zimmet P, Dalton D, Segal L & Welborn T 1996. The rise and rise of diabetes in Australia. A review of statistical trends and costs. Canberra: Diabetes Australia.

Moller J, Dolinis J & Cripps R 1996. Aboriginal and Torres Strait Islander peoples injury-related hospitalisations 1991/92. A comparative overview. Adelaide: AIHW National Injury Surveillance Unit.

National Health and Medical Research Council (NHMRC) 1996. Measles. Guidelines for control of outbreaks in Australia. Canberra: AGPS.

New South Wales Public Health Division 1997. The health of the people of NSW. Report of the Chief Health Officer. Sydney: New South Wales Health Department.

National Health and Medical Research Council (NHMRC) 1997. Prevention of stroke. Clinical practice guidelines, December 1996. Canberra: AGPS.

O'Connor P J 1996. Road injury Australia: crashes resulting in hospitalisation. Adelaide: AIHW National Injury Surveillance Unit.

O'Donnell I & Farmer R 1995. The limitations of official suicide statistics. Br J Psychiatry 166: 458–61.

Parliament of the Commonwealth of Australia 1997. Health on line. Report into health information management and telemedicine. House of Representatives Standing Committee on Family and Community Affairs. Canberra: AGPS.

Reid M & Solomon S 1992. Improving Australia's rural health and aged care services. National Health Strategy Background Paper No. 11. Canberra: Department of Health, Housing and Community Services.

Thomas K 1994. Women's health and welfare in rural and remote Queensland. In Franklin MA, Short LM & Teather EK (eds). Country women at the crossroads. Armidale: University of New England Press, 99–108.

Trickett P, Titulaer I & Bhatia K 1997. Rural, remote and metropolitan area health differentials: A summary of preliminary findings. Australian Health Review 20(4): 128–137.

Waters AM 1993. Assessment of self-reported height and weight and their use in the determination of body mass index. Canberra: AIHW.

Wise M & Graham-Clarke P 1994. Cardiovascular health in Australia. A review of current activities and future directions. Canberra: AGPS.

Woolcock AJ & Peat JK 1997. Evidence for the increase in asthma world-wide. In Chadwick D & Cardew G (eds). The rising trends in asthma. Ciba Foundation Symposium 206. Chichester: John Wiley & Sons Ltd.

#### References

Young AF, Byles JE & Dobson AJ 1998. Women's satisfaction with general practice consultations. Med J Aust 168: 386-389.