5 Health status

Introduction

Differences in social and economic circumstances have been illustrated in the previous chapters for areas of Queensland. The maps and analysis in this chapter illustrate differences in the health status of residents of these areas.

The mapping technique is particularly useful in highlighting differences in the health status of the population (as measured by the indicators available) in areas across Queensland, and in demonstrating associations with the socioeconomic status and health service utilisation patterns. The results of the correlation analysis (which shows the extent of interdependence between the measures when mapped) are included in the text to support these associations.

Background

Health has been defined by the World Health Organisation as á state of complete physical, mental and social well being and not merely the absence of disease or infirmity.' Health status "refers to the level of health experienced by an individual or a community by placing them along a continuum, from health through distress, disease and disability, to death" (SAHC 1988).

Data collected since early this century have shown a steady improvement in the health status of Australians, as measured by a range of indicators including life expectancy, infant mortality and overall death rates. However, as noted in the *Introduction* (page 1), there are overwhelming inequalities in health status for disadvantaged groups. For example, all cause mortality rates are, on average, around 50 per cent higher for people aged under 65 years and living in the lowest socioeconomic areas when compared to the population groups of the same age and sex living in the areas of highest socioeconomic status (**Table 5.1**).

These differentials exist for both males and females in all the age groups studied and for all cause mortality and for a number of selected causes.

Table 5.1: Health status indicators by socioeconomic disadvantage of area and sex, Australia, late 1980s
Note: First quintile is high socioeconomic status and fifth quintile is low socioeconomic status

Age group (years)		Rate ratio for quintile of socioeconomic disadvantage of area			
		Males		Females	
		1st quintile	5th quintile	1st quintile	5th quintile
Children (0 to 14 years):	Mortality	1.00	1.46***	1.00	1.63***
	Serious chronic illness	1.00	1.25	1.00	1.18
	Reduced activity	1.00	1.36***	1.00	1.03
	Not breastfed: 0 to 4 yrs	1.00	1.46*	1.00	1.09
Youth (15 to 24 years):	Mortality	1.00	1.46***	1.00	1.49***
	Serious chronic illness	1.00	1.03	1.00	1.03
	Reduced activity	1.00	0.74***	1.00	0.95
	Fair/poor health	1.00	1.33	1.00	1.40
	Inactivity	1.00	1.07	1.00	1.34**
	Smoking: 18 yrs & over	1.00	1.24*	1.00	1.22
Adults (25 to 64 years):	Mortality	1.00	1.67***	1.00	1.49***
	Serious chronic illness	1.00	1.12	1.00	1.22**
	Reduced activity	1.00	1.56***	1.00	0.98
	Fair/poor health	1.00	1.61***	1.00	1.67***
	Overweight/obesity	1.00	0.99	1.00	1.23***
	Inactivity	1.00	1.26***	1.00	1.17**
	Smoking	1.00	1.43***	1.00	1.53***
	Alcohol risk	1.00	1.44***	1.00	0.95
Older people (65 & over):	Mortality	1.00	1.13***	1.00	1.10***
	Serious chronic illness	1.00	1.06	1.00	1.06
	Reduced activity	1.00	1.08**	1.00	1.22***
	Fair/poor health	1.00	1.34**	1.00	1.30**
	Overweight/obesity	1.00	1.05	1.00	1.17
	Inactivity	1.00	1.25	1.00	1.27**
	Smoking	1.00	1.47*	1.00	1.32
	Alcohol risk	1.00	1.12	1.00	1.05
All ages :	Mortality	1.00	1.23***	1.00	1.23***
	Serious chronic illness	1.00	1.11*	.1.00	1.13**
	Fair/poor health	1.00	1.50***	1.00	1.51***
	Overweight/obesity	1.00	1.01	1.00	1.20***
	Inactivity	1.00	1.23***	1.00	1.21***
	Smoking: 18 yrs & over	1.00	1.34***	1.00	1.44***
	Alcohol risk: 18 yrs & over	1.00	1.34***	1.00	0.98

Statistical significance: the greater the number of * the higher the level of significance: * p < 0.05: ** p < 0.01: *** p < 0.001
Source: Mathers, C. Health Monitoring Series Nos. 1 to 4, Australian Institute of Health & Welfare, Canberra, 1994

Young people and adults from the lowest socioeconomic areas are also more likely to report their health as being 'fair' or 'poor' (in comparison with 'excellent' or 'good') than those living in the areas of highest socioeconomic status. The largest differential is that for 25 to 64 year old females: a differential of 67 per cent. Most risk factors, for example smoking, are also highly elevated for both men and women in the 'young' (by 24 per cent for males and 22 per cent for females) and 'adult' (by 43 per cent for males and 53 per cent for females) age groups living in the most disadvantaged areas. Male adult residents of these areas are also at high risk of poor health from high levels of alcohol consumption.

Despite overall decline in mortality rates between 1985-87 and 1995-97 for the majority of conditions, the differentials observed in the earlier period were still evident a decade later (Mathers in press). For example, during 1995-97 infants and children living in the most disadvantaged areas experienced the highest mortality rates for perinatal conditions and sudden infant death syndrome, and for injury and poisoning (**Table 5.2**)[1]. Similarly, males and females aged from 25 to 64 years residing in the most disadvantaged areas, experienced the highest death rates for all cause mortality; for specific causes such as circulatory, respiratory and digestive system diseases; and for selected causes, such as coronary heart disease and stroke, motor vehicle traffic accidents and pneumonia/bronchitis. Although data for the individual quintiles are not presented in the table, almost without exception, death rates for these quintiles exhibited a clear gradient from high to low socioeconomic status. These widening differentials give cause for concern.

For some conditions, the authors found an actual increase in the mortality rates over the decade. Among those aged 15 to 24, there was an increase in the rate of male suicide in the middle (third) and low (fifth) socioeconomic status quintiles, and a corresponding increase for females in the high (first) and middle socioeconomic status quintiles (and also in the rate ratio). Among males aged 25 to 64, mortality rates increased (or remained largely unchanged) for diabetes mellitus, suicide, and asthma/emphysema, and for females of the same age increases in death rates were evident for diabetes mellitus, lung cancer and asthma/emphysema.

Although not statistically significant, the large reductions in rate ratios for deaths of 15 to 24 year old males and females from causes of drug dependence may reflect an increase in deaths of residents of higher socioeconomic status areas from these causes.

[1]Age standardised mortality rates were calculated for males and females in the first (least disadvantaged), third, and fifth (most disadvantaged) quintiles of the ABS SEIFA Index of Relative Socio-Economic Disadvantage. Only the rate ratio of the fifth quintile to the first quintile is shown in the table.

Table 5.2: Rate ratio of mortality inequality by socioeconomic disadvantage of area, 1985-87 and 1995-97

Age group/Mortality type	Rate ratio [1]			
	Males		Females	
	1985-87	1995-97	1985-87	1995-97
0 to 14 years				
All Cause	1.50	1.62***	1.67	1.45***
Perinatal conditions	1.54	1.39***	1.90	1.41***
Sudden infant death syndrome	1.20	2.73***	1.69	3.24***
Injury and Poisoning	2.02	2.21**	1.84	1.75
MV Traffic Accident	1.53	2.49***	1.95	1.40***
15 to 24 years				
All Cause	1.49	1.78***	1.54	1.40***
Drug dependence	1.91	0.98	1.52	0.94
Injury and Poisoning	1.47	1.98***	1.66	1.49**
MV Traffic Accident	1.40	2.26***	1.56	1.83***
Suicide	1.35	1.75***	1.30	0.95***
25 to 64 years				
All Cause	1.68	1.64***	1.50	1.45***
Circulatory System	1.65	1.87***	1.97	2.01
Coronary HD	1.55	1.88***	2.22	2.34***
Stroke	2.10	2.07	1.71	1.70
Diabetes mellitus	1.73	2.07***	3.04	3.49***
Cancer	1.28	1.39***	1.10	1.14***
Lung cancer	1.60	1.98***	1.58	1.73***
Injury and Poisoning	1.96	1.76***	1.69	1.47***
Suicide	1.73	1.52***	1.42	1.15***
MV Traffic Accident	1.73	2.33***	1.66	2.21***
Respiratory System	2.31	2.49***	2.06	2.64***
Pneumonia, bronchitis	3.72	1.76***	4.24	2.80***
Asthma, emphysema	1.90	3.02***	1.43	2.94***
Digestive System	3.06	2.20***	2.26	2.21

[1]Ratio of Standardised Mortality Ratio for fifth quintile (low socioeconomic status) to first quintile (high socioeconomic status)
Note: Rate ratios of mortality inequality differ significantly from no inequality at significance level p<0.001
Asterisks indicate level of significance of the difference from the corresponding 1985-87 value: * p <0.05, ** p <0.01, *** p <0.001
Source: Mathers C. Australian Institute of Health and Welfare (in press)

Measurement of health status

Current situation

In the absence of accepted measures of good health as a positive entity, health status is largely indicated by measures of morbidity (sickness), mortality (death, in particular infant and other premature deaths, and life expectancy), disability, risk factors and, in some instances, utilisation of health services. Broader aspects of health, such as social and economic wellbeing, or of life satisfaction, are rarely measured in the administrative collections from which most health data are drawn. To be useful in describing health status at a local area level, datasets need to include descriptive information associated both with the particular event being recorded (eg. cause of death) and the person about whom it was recorded (eg. age, sex and place of usual residence).

The deaths 'data collections undertaken by the Australian Bureau of Statistics (ABS) have provided one of the few datasets to include such detail at a local area level. Therefore, mortality data have been the major indicator of health status used over the years in small area analyses. Data on the extent of morbidity (illness or disease), disability and risk factors in the community have generally not been available at the local area level, apart from proxy measures such as hospital admissions and for some States and Territories, cancer incidence data.

Use of Synthetic Predictions

Information on the levels of morbidity in the community has been collected by the ABS since 1977 in the five-yearly National Health Survey (NHS) (prior to 1989 called the Australian Health Survey, AHS). In these surveys, a sample of the Australian population is asked to report on medical conditions, diseases, etc. experienced in the two weeks prior to being interviewed. Information is also collected on personal attributes (eg. age, sex, height, weight, income and occupation), and on a number of lifestyle and behavioural factors including smoking and alcohol consumption.

In the 1989 AHS and 1995 NHS, a sample of the Australian population was asked to indicate its perception of its own health status, on a scale of 'excellent', 'very good' (only asked in the 1995 NHS), 'good', 'fair' and 'poor'. The purpose of this question was to obtain information about health status in a more subjective way, in order to provide an alternate measure to that derived solely from statistics of illness, death, or service use.

As a further development, the 1995 NHS also included the SF-36 (Ware et al. 1993), a survey questionnaire designed to provide general self-reported health status profiles of the population. The SF-36 provides an indicator across eight dimensions of health and well being: physical functioning; role limitations due to physical health problems; bodily pain; general health; vitality (energy/fatigue); role limitations due to emotional problems; and mental health (psychological stress and psychological well being). Two summary measures, a Physical Component Summary and a Mental Component Summary[2], can be calculated from the eight dimensions.

Data from the NHS are generally available only at the State and Territory level, or for large regional areas such as State health regions. In recognition of the importance of local area level data, the ABS was contracted (as part of this project) to produce estimates for two variables (the self-assessed health status of the population and the Physical Component Summary of the SF-36) for SLAs across Australia, using the synthetic prediction technique. The variables and the synthetic prediction technique, are described on page 111.

This section also includes estimates of the number of people with a handicap, which were also produced using the synthetic prediction technique.

Data mapped

In this chapter, data have been mapped for a number of measures of health status. These include the measures, discussed above, from the NHS; the population with a handicap; premature deaths of males and females, selected causes of death and years of potential life lost; and the Total Fertility Rate. These variables are discussed in more detail in the introduction to the maps on each topic.

A comparison of the mapped distribution of these measures of health status with the distributions in other chapters indicates the possible extent of association at the local area level between health status, and socioeconomic status and health service use. The extent of association is supported by the results of the correlation analysis in Chapter 8.

Gaps and deficiencies in the data

Health status of Aboriginal and Torres Strait Islander people

Indigenous people have the poorest health of any group in Australia: they are also the group least well identified in statistical collections. **Table 3.2** in Chapter 3 documents problems in the counts of Indigenous Australians from the population Census. Data as to the birth and death records for Indigenous people used in this chapter are similarly inaccurate.

Despite the inclusion of a question to identify Indigenous people on the death information statements and medical certificates of cause of death, they are under-reported in death records[3]. Over the past few years only the Northern Territory, Western Australia, South Australia and the Australian Capital Territory were considered to have had reasonably complete coverage. The coverage in other States has not improved since the early 1990s, with the exception of Queensland, which has been estimated to have moved close to complete coverage since 1996. However, between 1991 and 1996 there has been a largely unexplained increase in the population of Indigenous people: see pages 18 and 19 for further details. Thus, estimates of the completeness of Indigenous birth and death notifications for some States and Territories (which are, in part, based on Census counts) will need to be reviewed.

[2]Preliminary investigations by the ABS found that it was not possible to obtain a model capable of reliably predicting the Mental Component Summary.

[3]The death information statement is authorised by a relative or other person who has knowledge of the deceased and is usually filled out by a funeral director: the medical certificate of cause of death is completed by a medical practitioner or coroner.

Cancer incidence and notifications of communicable diseases are other important collections of relevance to the measurement of health status which also inadequately identify Indigenous Australians.

The Australian Bureau of Statistics and the Australian Institute of Health and Welfare (ABS/AIHW 1999) have identified that "among the most important issues relating to data quality are: the estimation of the size and composition of the Indigenous population; the identification of Indigenous people in administrative data collections; and issues related to the collection of survey data about Indigenous people. The availability of data are also affected by the number of Indigenous people included in surveys and the regularity with which the surveys are conducted". The ABS, AIHW, State and Territory health authorities and the heads of Aboriginal and Torres Strait Islander health organisations are currently working together to reduce the long term issues related to the accurate and appropriate collection of an Indigenous people identifier for demographic and health collections.

Influence of deaths of Indigenous people on ARIA results

There has been considerable discussion on the extent to which high death rates in the non-metropolitan areas of Australia result from the much higher mortality experience of Indigenous populations. A Queensland study, using the Rural, Remote and Metropolitan Areas classification (RRMA) has shown that across most major classes of diseases remote areas had higher rates than urban areas. Once the Indigenous component was taken out of the analysis, the differences between the RRMA groups were greatly reduced for most diseases. Significant differences remained for diseases of the circulatory and genitourinary systems and all causes (Miller, Ring & Kennedy 1998 unpublished).

An initial examination of data for deaths in 1997 of Indigenous people aged from 15 to 64 years was undertaken by the new Accessibility/Remoteness of Australia (ARIA) as part of the atlas project. Data were examined for Western Australia, South Australia and the Northern Territory, which are considered to have the best identification of Indigenous people in their deaths statistics. Preliminary findings suggest that, for the Northern Territory, death rates for all of the ARIA categories are likely to be affected by deaths identified as Indigenous. In South Australia, the affect on death rates is substantial in the Very Remote category and is also likely (although to a much lesser extent) to impact on results for the Remote category. In Western Australia, the affect on death rates in the Very Remote category is again substantial, and is also likely to be significant in the Moderately Accessible category (driven by the impact of male deaths) and the Remote category (driven by the impact of female deaths).

As this analysis was undertaken as the first volume of the atlas went to print, the data on which these initial findings were based were not able to be incorporated in the printed version. The data are, however, available on the atlas World Wide Web site, at www.publichealth.gov.au. It is planned to extend the analysis to include more years of data, and to use age standardised rates, rather than the age-specific rates as used in this initial analysis.

Health status and the physical environment

There is limited information as to the impact on the health of Australians of environmental factors, such as air quality and soil and water contamination (Peach 1997). Overseas studies have found a relationship between the levels of several pollutants in the air, and death rates or signs of sickness (such as hospital admissions or use of medications for respiratory system disease). Some relate an increase in signs of poor health with increased levels of sulphur dioxide and total suspended particulate matter in the air (Dept. of the Environment, Sport and Territories 1996).

However recent developments in Australia provide the potential to improve the range and quality of data available. In February 1998 the National Environment Protection Council agreed to establish the National Pollutant Inventory. The National Pollutant Inventory (NPI) is the first of a series of National Environment Protection Measures to be developed in Australia. When fully developed, the NPI will provide a national database of pollutant emissions and will be available on the Internet.

Since 1 July 1998 larger Australian industrial facilities which use more than a specified amount of the chemicals listed on the NPI have been required to estimate and report annually their emissions for the NPI. Estimates of emissions from facilities using less than the specified amount of the chemicals listed on the NPI and emissions from the community (such as nutrient emissions to waterways and air emissions from motor vehicles, lawn mowers etc.) will also be made available. Information regarding the composition of substances listed on the NPI, their uses, and the associated risks to human health and the environment, will be included on the database. The data from the first year of reporting are now expected to be available in 2003. In the first two reporting years for the NPI, facilities will be required to report their emissions to air, land and water (from 36 of the 90 chemicals listed on the NPI). In late 1999, a review of the NPI will consider whether reporting requirements should extend to the full list of chemicals.

The establishment of this inventory, and its promulgation using the Internet, will bring to a wide audience important data on pollutant emissions by type of emission and the location of the facility responsible for the emission. This spatial element will enable comparisons with data from other sources and will better inform the work in Australia on the impact of air quality and soil and water contamination on the health of Australians.

Other National Environment Protection Measures being developed include ambient air quality, movement of controlled waste across State and Territory borders and assessment of contaminated sites.

The homeless

Chamberlain (1999) has estimated that there were 105,000 homeless people in Australia on Census night in 1996. Where there are a disproportionately large number of homeless people in a city, a town or a regional area, they may also be represented disproportionately in the maps in this atlas. For example, if they are not captured in the population data for the same area of address that is given in administrative records following a hospital admission or a visit to a general medical practitioner, or on a

death certificate, the rates for these events will be overstated for that area.

Rates of death and hospital admission in inner and near city suburbs in the capital cities are particularly likely to be affected, as many of those who live 'on the street' frequent these areas, and these SLAs are also the location of much of the sheltered accommodation and many of the low-cost boarding houses used by the homeless in general.

Other gaps and deficiencies

There are a number of important areas for which health status data are not available at the small area level. These include oral health, nutrition (including information on height and weight) and mental health and wellbeing, all of which are key areas affecting health status. Details of the incidence of cancer are also not available for all of Australia in a standard form suitable for mapping. For example, data are available for some States at the SLA level and for others at the postcode level. The National Cancer Statistics Clearing House has this small area data, although it has not been edited or used to date. Similarly, details are available from the State and Territory operations of the National Cervical Screening Program and Breast Screen Australia. As yet small area data are not held nationally, although the National Screening Information Project will eventually hold such information.

Although small area data could have been obtained from the individual States and Territories, this was not done because, for a number of jurisdictions, the data would have to be converted from postcode to SLA for mapping. This is an inexact process (see page 11) and could well produce rates that overstate the true incidence of cancer in an SLA (and possibly overstate the rate many times). Given the concerns that high rates estimated from these datasets at the small area level would evoke in the community (when the rate may well be inaccurate), a decision was taken not to map this data.

Area mapped/Boundary issues

As noted in Chapter 2, under the heading of *Area mapped/Boundary issues*, adjustments have been made to the deaths' data in a number of cases to maintain comparability at the small area level. Data for deaths used in this chapter were those registered over the four years from 1992 to 1995. For statistical purposes, each death was allocated the code of the Statistical Local Area (SLA) of usual residence of the deceased.

However, during the data collection period a number of changes were made to SLA boundaries in Queensland. For example, in 1996, Caboolture [Part A] in **Brisbane** split into seven SLAs: Bribie Island, Burpengary-Narangba, Caboolture Central, Caboolture East, Deception Bay, Morayfield and Caboolture Balance; the areas of Greenbank [Part B], Waterford West and Logan Balance amalgamated to form Greenbank [Part B]/ Waterford West; and boundary changes to the SLA of Ipswich and the several areas of Moreton [Part B] in 1995 and 1996 created the SLAs of Ipswich Central, Ipswich East and Ipswich North. Several changes also occurred in the non-metropolitan areas, including the amalgamation of Cairns and Mulgrave [Part A] (see **Table 5.3**).

Table 5.3: Boundary changes

1992 to 1995 areas	1996 areas	1992 to 1995 areas	1996 areas
Brisbane		**Rest of State**	
Caboolture [Part A]	Bribie Island	Bundaberg/Burnett	Bundaberg
	Burpengary-Narangba		Burnett [Part A]
	Caboolture Central		Burnett [Part B]
	Caboolture East	Burdekin/Dalrymple/Thuringowa/Townsville	Burdekin
	Deception Bay		Dalrymple
	Morayfield		Thuringowa [Part B]
	Caboolture Balance		Townsville [Part B]
Greenbank [Part B]	Greenbank [Part B]/Waterford West	Cairns plus Mulgrave [Part A]	Cairns
Waterford West		Caloundra [Part A]	Caloundra – Caloundra North
Logan Balance			Caloundra – Caloundra South
Ipswich Central plus Ipswich East plus Ipswich North	Ipswich		Caloundra – Kawana
	Moreton - Camira	Caloundra [Part B]	Caloundra – Hinterland
	Moreton - Carole Park		Caloundra – Rail Corridor
	Moreton - Karalee	Moreton [Part B]	Ipswich – South West
	Moreton Balance North		Ipswich – West
	Moreton Balance South	Maroochy [Part A]	Maroochy – Buderim
			Maroochy – Coastal North
			Maroochy – Maroochydore
			Maroochy – Mooloolaba
			Maroochy – Nambour
			Maroochy Balance
		Maryborough/Woocoo	Maryborough

Source: Compiled from project sources

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Synthetic predictions of selected health status measures

Introduction

As noted above (page 107), some important data in Australia are only collected in household surveys such as the 1995 National Health Survey and the 1993 Survey of Disability and Ageing. Data from the these surveys are generally available only at the State and Territory level; in some instances (eg. for the largest States) they may also be available for large regional areas, such as State health regions. In recognition of the importance, for strategic planning and policy development, of local area level data for the measures included in these surveys, estimates were made for SLAs across Australia for selected variables from the NHS, using the synthetic prediction technique.

The variables are the self-assessed health status of the population and the Physical Component Summary of the SF-36. The ABS has previously produced estimates (using the synthetic prediction technique) at the SLA level of the number of people in the population with a disability and, of those, the number handicapped by that disability. The estimates of the population with a handicap are included in this section.

Description of the technique[4]

Synthetic predictions represent, in effect, a prorating of the Australian estimate (for the particular variable) across SLAs. The predictions are based on a model fitted to survey information, in which associations in the survey data for Australia are identified. For the purpose of the analysis, the survey data used in the model are limited to variables for which data are also available at the SLA level (these are the predictors). The model is then applied to the SLA counts of the predictors. The prediction is, effectively, the likely value for a typical area with those characteristics.

For example, in predicting the population with a disability (using data in the Survey of Disability and Ageing), the data variables were limited to those that were also available at the SLA level. These included variables from the 1991 Census, various socioeconomic (eg. unemployed, Indigenous) and demographic characteristics (age, sex, predominantly non-English speaking birthplace) and other sources (Disability Support Pensions). Relationships identified in the survey data (between levels of disability and age, sex, receipt of a Disability Support Pension) are then modelled in the SLA level data, and predictions produced of the number of a people with a disability.

The estimates were then age-sex standardised to remove variations (between SLAs) solely related to variations in age and sex.

Cautions

The synthetic predictions are intended as an indicator of regional distribution of the population with a handicap, where no other Australia-wide indicator exists (ABS 1996). Therefore, the extent to which the estimates reflect the number of people with a disability in any region will be, in part, dependent on the predictive value of the characteristics used in the model.

In making decisions based on the synthetic predictions, it is important to take into account any specific knowledge about a particular area (ie. the characteristics of its population) that is not incorporated into the model.

The synthetic predictions are also subject to sampling error because they are based on a model fitted to survey data. They are, however, fairly stable, most having sampling error comparable to the Australian estimates for the same variable from the survey (ie. lower than sampling error normally associated with survey estimates for small areas).

Users should note that the estimates will not necessarily agree with other (published) State estimates produced from the relevant surveys, as the predictions are based on Australian totals. Each of the surveys include people in institutions such as hospitals, specialised long-term accommodation for people with a disability, gaols, etc.

Variables mapped

Physical Component Summary of the SF-36

As noted on page 107, the SF-36 (the Rand Short Form, 36 questions) is one of a number of multi-dimensional or general health status profiles under development in the world (Ware et al. 1993). Although it is becoming widely used, questions remain as to its validity as a measure of health and wellbeing. There are also concerns as to its applicability to particular population groups (such as Indigenous populations, children, or the elderly) and, in particular, to older people born overseas in countries where English is not the predominant language.

It has, however, been included in a number of major studies in the health field in Australia. In 1995 it was incorporated in the NHS. In the light of this general acceptance, one of the summary measures from the SF-36, the Physical Component Summary (PCS), has been estimated at the SLA level (using the synthetic prediction technique) and included in this atlas. The PCS is derived from a subset of items that ask respondents to the NHS aged 18 years and over, about their general physical health and wellbeing. A higher score indicates a better state of physical health and wellbeing.

Self-assessed health status

Self-assessed health status refers to a person's perception of their general health status. In the 1995 NHS, the population aged 18 years and over was asked to indicate its perception of its own health status, on a scale of 'excellent', 'very good', 'good', 'fair' and 'poor'. In the following analysis, details are shown of that proportion of the population who reported their health as being fair or poor. The ABS report that how people rated their health was strongly related to their illness experience (ABS 1997). This is consistent with the finding by McCallum et al. (1994) that people rate their health as poor on the objective basis of illness and disability. For Indigenous people, the factors associated with reporting fair or poor health have been examined using data from

[4] A more detailed description of the production of the synthetic estimates is in Appendix 1.5.

the 1994 National Aboriginal and Torres Strait Islander Survey (ABS/AIHW 1999). Among the factors most strongly associated with self-assessed health status were reported health conditions and recent health actions, age, main language spoken and labour force status (Cunningham, Sibthorpe & Anderson 1997).

Survey of Disability and Ageing

The 1993 Survey of Disability, Ageing and Carers (ABS 1993) provides estimates of the numbers of persons with disabilities and those who were handicapped by the disability and who were living in private dwellings. The following definitions apply:

- a person was recorded as having a disability if he/she had one or more of a group of selected limitations, restrictions or impairments which had lasted, or was likely to last, for six months or more.
- a handicap results from a disability which limits a person's ability to perform certain tasks associated with daily living. The limitations must be in relation to one or more tasks of self-care, mobility, verbal communication, schooling or employment.

These definitions of disability and handicap are based on the *International Classification of Impairments, Disabilities and Handicaps* published by the World Health Organisation (1980).

It was estimated from the 1993 Survey of Disability, Ageing and Carers that 582,200 people in Queensland (14.7 per cent of the population) had a disability. Of these, 557,900 (12.5 per cent of the population) were living in 'households', with the remainder living in establishments such as nursing homes and hostels.

The majority (455,300, or 14.7 per cent of the population) of those with a disability had a handicap of varying levels of severity, ranging from profound (15.9 per cent of all people with a handicap), through severe (13.0 per cent) and moderate (17.8 per cent), to mild (35.0 per cent). The rate of disability per thousand population increased with age.

Following the release of the 1993 Survey results, the Australian Bureau of Statistics (ABS) produced a set of 'synthetic predictions' for the Heads of Disability Services of the Commonwealth and the States and Territories, for use as a component of assessing the demand for disability services at a regional level.

Estimates for the population with a disability and the number handicapped by that disability are included in the tables in Volume 4.1, however only the dataset for the population with a handicap has been mapped in this atlas.

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People reporting their health as fair or poor, 1995

Capital city comparison (Australia as the Standard)

The majority of Australians aged 18 years and over consider themselves to be in good health, with 83 per cent reporting their health status as good, very good or excellent (ABS 1997); similar proportions were reported by males and females. Self-assessed health status was, however, strongly related to age, with the proportion reporting their health as excellent or very good declining with age, and the proportion reporting fair or poor health increasing with age.

In 1995, the standardised ratios (SRs) recorded for people reporting their health as fair or poor, ranged from 109** in **Hobart** to 90** in **Perth**. The other capital cities with ratios below the level expected from the Australian rates were **Melbourne** (with an SR of 96**) and **Canberra** (98**). For the five cities with data recorded in both periods in **Table 5.4**, none of the changes in the ratios were very large. The largest changes were recorded in **Perth** (with a higher proportion reporting their health as fair or poor, relative to the Australian rate) and **Adelaide** (fewer people reporting their health as fair or poor, relative to the Australian rate).

Table 5.4: People reporting their health as fair or poor, capital cities
Standardised ratios

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
1995	102**	96**	100	102**	90**	109**	105**	98**	99**
1989-90	104**	99**	97**	106**	85**	..	..	..	100

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Brisbane (Queensland as the standard)

There were an estimated 171,806 people reporting their health as fair or poor (as distinct from those who reported their health as being good, very good or excellent) in **Brisbane** in 1995, marginally fewer than expected from the State rates (an SR of 99**).

The areas with ratios in the highest range mapped (**Map 5.1**) reflect the patterns of socioeconomic disadvantage described in Chapter 3. The area of Berrinba-Karawatha/Kingston had the highest ratio for this variable, with 21.4 per cent of the population reporting their health as fair or poor (37 per cent more people reporting their health as fair or poor than expected from the State rates, an SR of 137**). Also mapped in the highest range were the southern areas of Darra Sumner/Wacol (with an SR of 134**), Loganlea (130**), Inala/Durack/Doolandella-Forest Lake/Ellen Grove/Richlands (127**), Marsden (119**), Waterford West (117**) and Gold Coast [Part A] (115**); the inner city areas of Dutton Park/Woolloongabba (125**), New Farm (123**) and City/Spring Hill (120**); and the far northern area of Redland Balance (124**).

The lowest ratios were recorded in areas to the north of the Brisbane River, including Anstead/Bellbowrie/Moggill (11.1 per cent of the population reporting their health as fair or poor; an SR of 69**), Upper Brookfield/Fig Tree Pocket (71**), Ashgrove/The Gap (79**), Pine Rivers Balance (80**), Albany Creek (82**), Chelmer/Taringa and Bardon (both with 83**) and St Lucia (84**). Ratios of below 85 were also recorded in Jindalee (with an SR of 78**), Seventeen Mile Rocks (81**), Burbank/Belmont-Mackenzie (82**), Chandler (84) and Algester/Parkinson-Drewvale (84**).

In 1995, the largest numbers of people reporting their health as fair or poor were residents of Caboolture [Part A] (estimated at 11,738 people), Ipswich (8,386), Redcliffe (7,480) and Bridgeman Downs/Boondall (5,231).

There were correlations of substantial significance with the variables for unemployed people (0.82), low income families (0.73) and Indigenous people (0.71); and of meaningful significance with single parent families (0.67), unskilled and semi-skilled workers (0.66) and dwellings without a motor vehicle (0.57). These results, together with the inverse correlation of substantial significance with the IRSD (-0.84), indicate the existence of an association at the small area level between people reporting their health as fair or poor, and socioeconomic disadvantage.

There were also correlations of substantial significance with the health status variables for people with a handicap (0.75), premature deaths of males (0.73) and years of potential life lost (a summary indicator of premature death, 0.73), as well as an inverse correlation with the PCS, of -0.96, indicating poorer physical health.

Gold Coast-Tweed Heads

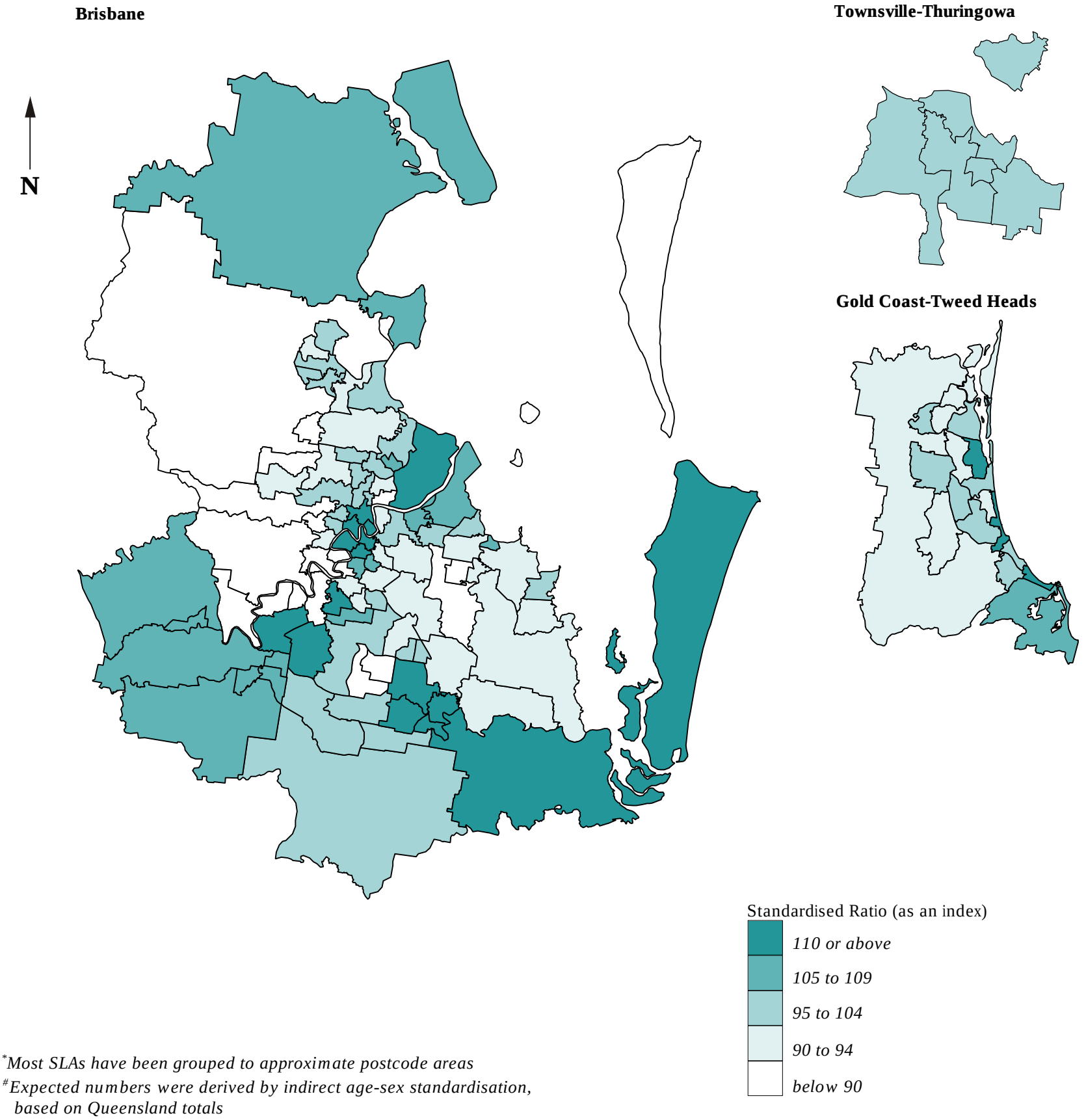
There were slightly more people reporting fair or poor health in **Gold Coast-Tweed Heads** in 1995 than were expected from the State rates, an SR of 101**. The highest ratios were recorded in the coastal areas of Labrador/Southport (an SR of 114**), Coolangatta/Tugun (113**) and Broadbeach/Burleigh Heads (112**), while the lowest ratios were recorded in the inner areas of Helensvale (90**) and Worongary-Tallai/Mudgeeraba (91**).

Townsville-Thuringowa

In **Townsville-Thuringowa**, an estimated 12,628 people reported their health as fair or poor in 1995, the same number as expected from the State rates (an SR of 100). The highest ratios were recorded in the areas of Townsville Coastal/Magnetic Island and Townsville South East, with SRs of 104* and 100, respectively. There were 2 per cent fewer people reporting fair or poor health than expected in both Murray/Mt Louisa and Thuringowa [Part A] (both with an SR of 98).

Map 5.1: People reporting their health as fair or poor, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1995

Standardised Ratio: number of people in each area* compared with the number expected#



*Most SLAs have been grouped to approximate postcode areas

#Expected numbers were derived by indirect age-sex standardisation, based on Queensland totals

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

People reporting their health as fair or poor, 1995

State/Territory comparison

There was little difference in the levels of fair or poor health reported by residents of the capital cities and the *Rest of State/Territory* areas for Australia as a whole (**Table 5.5**). The most highly elevated standardised ratios (SRs) for people reporting their health as fair or poor in the non-metropolitan areas of Australia were in Tasmania (with an SR of 115**) and the Northern Territory (111**). Only in Western Australia (91**) and Victoria (95**) were the ratios below the level expected from the Australian rates.

Responses given by Indigenous people are particularly relevant in the non-metropolitan areas. After adjusting for age, Indigenous people in these areas were about twice as likely as their non-Indigenous counterparts to report their health as fair or poor (ABS 1999).

For the five States with data recorded in both periods, none of the changes in the ratios were very large. As for the capital cities, the largest changes were recorded in Western Australia (with a higher proportion reporting their health as fair or poor, relative to the Australian rate) and South Australia (fewer people reporting their health as fair or poor, relative to the Australian rate). For both these States the differential in the ratios from the Australian rate was twice that in their capital cities.

Table 5.5: People reporting their health as fair or poor, State/Territory
Standardised ratios

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1995									
Capital city	102**	96**	100	102**	90**	109**	105**	98**[1]	99**
Other major urban centres[2]	108**	103**	103**	..	..	..	..	..	105**
Rest of State/Territory	103**	95**	103**	101	91**	115**	111**	–[3]	101**
Whole of State/Territory	103**	96**	102**	102**	90**	112**	108**	97**	100
1989-90									
Rest of State/Territory	104**	97**	103**	110**	82**	..	..	..	101**

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Rest of State (Queensland as the standard)

There were an estimated 157,349 people reporting their health as fair or poor (as distinct from those who reported their health as being good, very good or excellent) in the non-metropolitan areas of Queensland in 1995**,** marginally more than expected from the State rates (an SR of 101**).

As can be seen from **Map 5.2**, a number of the SLAs in the north of the State have been mapped in the highest range. The highest ratio was recorded in Aurukun, with 37 per cent more people reporting their health as fair or poor than were expected from the State rates (an SR of 137**). However, there were estimated to be just 88 people in this category. Ratios elevated by at least 15 per cent were recorded in the far northern SLAs of Mornington (with an SR of 132**), Burke (130**), Carpentaria (115**) and Cook and Herberton (both with 115**); and in the areas just north-west of **Brisbane**, in Mount Morgan (135**), Miriam Vale (130**), Kolan (119**), Nanango (117**), Tiaro (116**) and Hervey Bay (115**).

The majority of SLAs were mapped in the middle class interval, with ratios ranging from 95 in Moreton [Part B], Jondaryan, Boonah and Beaudesert [Part B] (95**); to 104 in Bowen, Caloundra [Part B] (104*), Cloncurry, Maroochy [Part A] (104**), Sarina and Stanthorpe.

There were 34 per cent fewer people than expected reporting their health as fair or poor in the Ilfracombe (an SR of 66**). Also mapped in this lowest range were the areas of Isisford (79), Weipa (79**), Bungil (81**), Mirani (83**), McKinlay (83) and Taroom (84**).

Relatively low ratios were also recorded in the central western areas of Tambo (with an SR of 85), Aramac (87), Longreach (88*), Barcaldine (88) and Barcoo (89); and in the central SLAs of Peak Downs (85*), Bauhinia (86*), Broadsound (87**), Fitzroy [Part B] (88**) and Nebo (89).

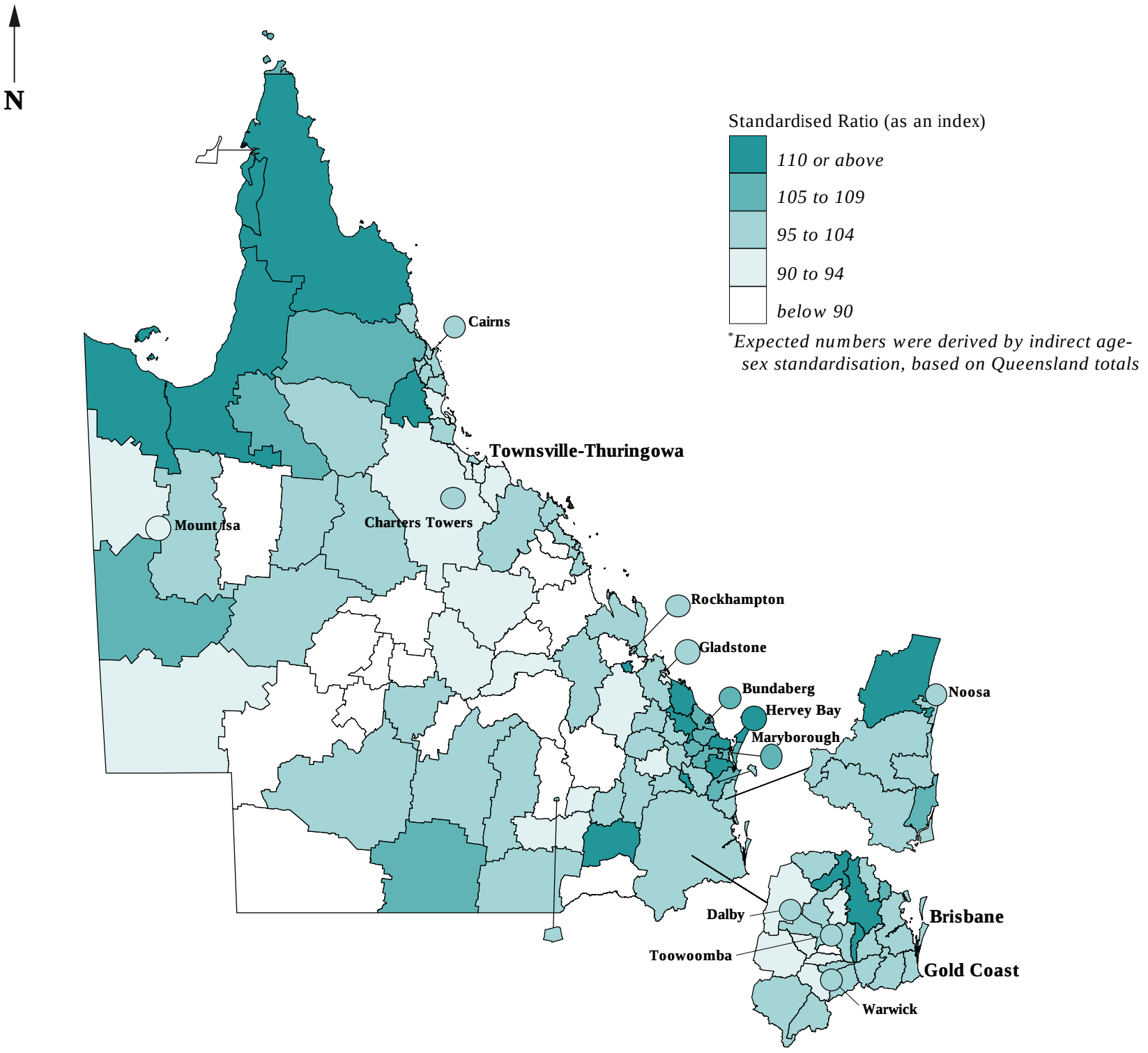
In the non-metropolitan areas of Queensland, the largest number of people reporting their health as fair or poor were in Maroochy [Part A] (an estimated 11,161 people), Cairns (10,810), Toowoomba (10,241), Rockhampton (6,948), Caloundra [Part A] (6,638) and Mackay [Part A] (6,384).

There were correlations of meaningful significance with the variables for low income families (0.65), single parent families (0.64), unemployed people (0.59) and dwellings without a motor vehicle (0.57). These results, together with the inverse correlation of substantial significance with the IRSD (-0.74), indicate the existence of an association at the SLA level between people reporting their health as fair or poor and socioeconomic disadvantage.

There were also correlations of statistical significance with the health status variables for years of potential life lost (a summary indicator of premature death, 0.59) and people with a handicap (0.80), and an inverse correlation of substantial significance with the PCS, of -0.92, indicating poorer physical health.

Map 5.2: People reporting their health as fair or poor, Queensland, 1995

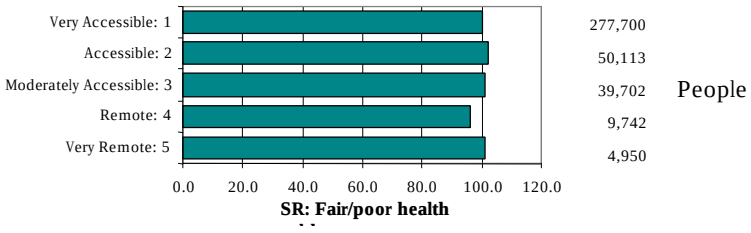
Standardised Ratio: number of people in each Statistical Local Area compared with the number expected*



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Accessibility/Remoteness Index of Australia



There is no noticeable relationship between increasing remoteness and standardised ratios for people reporting their health as fair or poor. The ratios vary over a narrow range, from a low of 96 in the Remote areas (4.0 per cent fewer people than expected from the State rates reporting their health as fair or poor), to a high of 102 in the Accessible areas (2 per cent more people than expected from the State rates reporting their health as fair or poor).

Source: Calculated on ARIA classification, DHAC

Physical Component Summary, SF-36, 1995

Capital city comparison (Australia as the Standard)

The Physical Component Summary (PCS) is expressed as a mean score, with higher scores indicating better physical health. The PCS score for the Australian population aged 18 years and over was estimated to be 49.7, ranging from a high of 53.1 for 18 to 24 year olds and 53.0 for 25 to 34 year olds, to 50.0 in the 45 to 54 year age group, before declining at each subsequent ten year age group to a mean score of 38.5 for people aged 75 years and over (ABS 1997). Males had a marginally higher score than females (49.8 compared with 49.6). Scores for males and females were the same at ages 55 to 64 years (a PCS score of 46.6), and higher for males at ages under 55 years, and lower at older ages (in the 65 to 74 years and 75 years and over age groups). The PCS score also varies by employment status, with employed males recording the highest mean score (52.2), with lower scores for the unemployed (51.0) and those not in the labour force (47.4). The major difference for males and females was recorded for females not in the labour force, with a score of 49.8, higher than that for males, with a score of 45.1. There are also notable variations for people reporting selected illness conditions such as cancer (those with cancer had a PCS score of 44.6, compared with those with no cancer, 49.3), heart disease (40.3, compared with 48.3), diabetes (44.0, compared with 49.9), asthma (47.3, compared with 50.0) and injury (45.9, compared with 50.2). There was a striking gradient in the PCS score for people reporting no serious physical conditions (a mean score of 53.1), when compared with those with one serious physical condition (49.8) and two or more such conditions (44.8).

The capital city scores varied over a narrow range (**Table 5.6**), from 49.4 in **Adelaide** to 50.2 in **Melbourne**.

Table 5.6: Physical Component Summary, capital cities, 1995
Standardised score

Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
49.8	50.2	49.8	49.4	49.7	49.9	49.5	50.1	49.9

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3

Brisbane (Queensland as the standard)

The PCS score in **Brisbane** in 1995 was estimated to be 49.9, which was as expected from the State rates for a population of this size and age/sex composition.

The distribution of mean scores across **Brisbane** was similar to that recorded for many of the indicators of socioeconomic disadvantage, with the highest scores (indicating better physical health) generally located north of the Brisbane River and the lowest in the southern areas (**Map 5.3**).

The highest PCS score was estimated for residents of Upper Brookfield/Fig Tree Pocket and Anstead/Bellbowrie/Moggill, both with a mean score of 51.4. Relatively high scores were also recorded in the northern SLAs of Ashgrove/The Gap (a PCS score of 50.9) and Pine Rivers Balance (50.8); in the inner areas of St Lucia (51.2), Chelmer/Taringa (50.9) and Bardon (50.8); just south of the Brisbane River in Jindalee/River Hills (50.9), Seventeen Mile Rocks (50.8) and Burbank/Belmont-Mackenzie (50.7); and in the SLA of Moreton Island (50.8).

The southern area of Berrinba-Karawatha/Kingston recorded the lowest score for this variable (a PCS score of 48.3). Mean scores of 49.0 or below were also recorded in Darra Sumner/Wacol (a mean score of 48.4), Inala/Durack/Doolandella-Forest Lake/Ellen Grove/Richlands (48.5) and Loganlea (48.8), situated in the south; Redland Balance (48.5), located in the north; and Dutton Park/Woolloongabba (48.8), New Farm (48.9) and Rocklea (49.0), situated in the inner city region.

The results of the correlation analysis revealed a positive association at the small area level between high PCS scores (indicating better physical health) and many of the indicators of socioeconomic advantage. The strongest of these were with the variables for high income families (0.74) and female labour force participation (0.62). The correlation with the IRSD (0.89) also indicates a positive association at the SLA level between high mean scores and socioeconomic advantage. Inverse correlations of substantial significance were recorded with the health status variables of people reporting fair or poor health (-0.96); premature deaths of males (-0.67) and females (-0.62); and years of potential life Lost (-0.69); and the health service variables for admissions to hospital – from respiratory system diseases (-0.58), circulatory system diseases (-0.58), accidents, poisonings and violence (-0.52) and ischaemic heart disease (-0.51).

Gold Coast-Tweed Heads

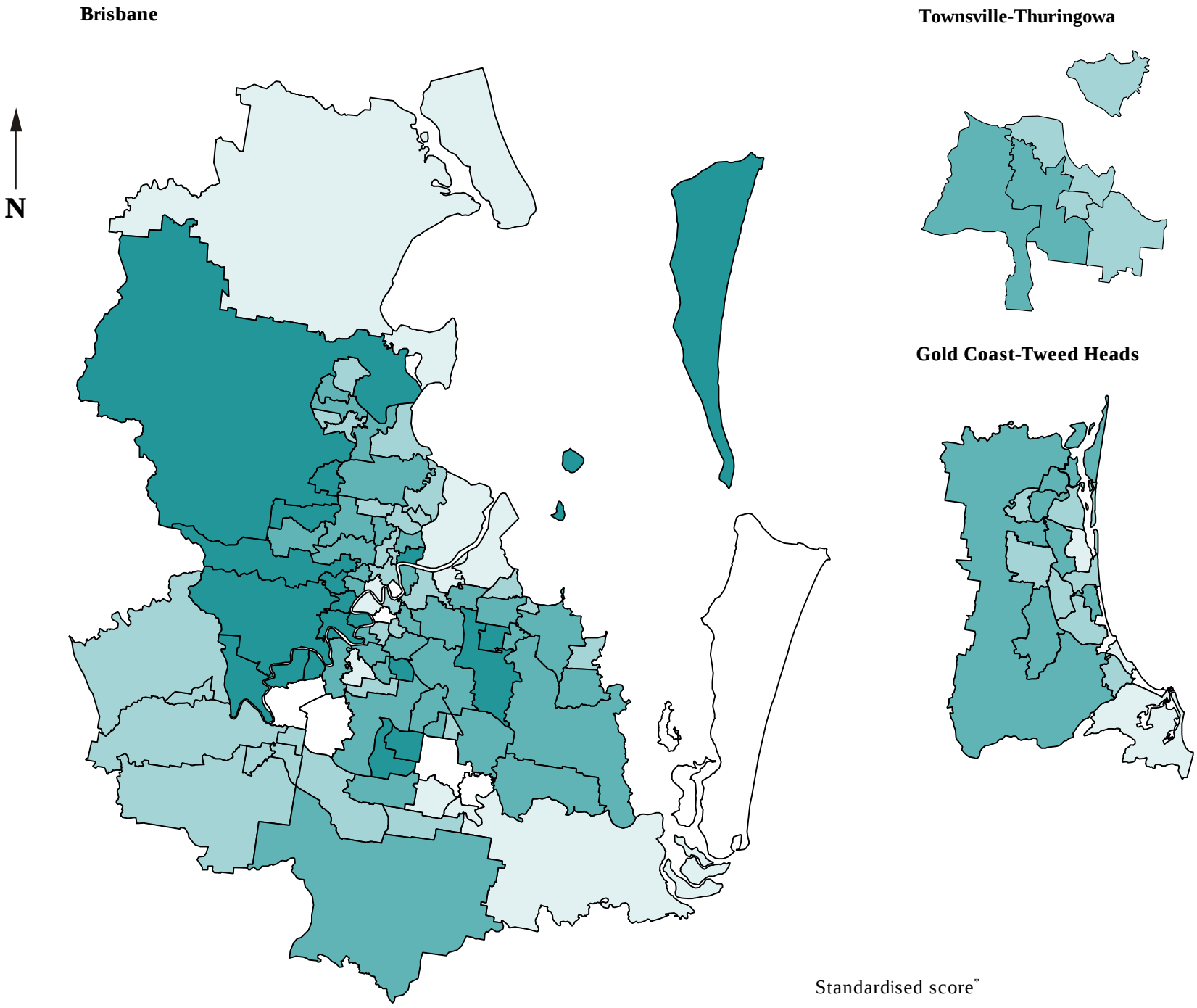
Residents of **Gold Coast-Tweed Heads** had an estimated PCS score of 49.7 in 1995, as expected from the State rates. The northern areas of Hope Island and Helensvale recorded the highest scores for this variable, both with a PCS score of 50.3. Mean scores of below 49.5 were recorded in the areas of Coolangatta/Tugun (a score of 48.8), Broadbeach/Burleigh Heads and Labrador/Southport (both with 49.0), Tweed Heads (49.2) and Palm Beach/Currumbin (49.4).

Townsville-Thuringowa

A PCS score of 50.0 was estimated for residents of **Townsville-Thuringowa**; again this was as expected from the State rates. There was little variation in mean scores, ranging from 49.7 in Townsville Coastal/Magnetic Island to 50.1 in Murray/Mt Louisa and Thuringowa [Part A]. Residents of Gulliver/Hermit Park and Townsville South East both had an estimated PCS score of 49.9.

Map 5.3: Physical Component Summary*, SF-36, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1995

mean Physical Component Summary (PCS) score* in each area#



*The PCS score has been age-sex standardised, based on Queensland totals

#Most SLAs have been grouped to approximate postcode areas

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Physical Component Summary, SF-36, 1995

State/Territory comparison

The Physical Component Summary (PCS) is expressed as a mean score, with higher scores indicating better physical health. Details of variations in the PCS score by selected population characteristics are given on the previous page.

The scores in the non-metropolitan areas are all either the same as, or lower than, those in the capital cities (**Table 5.7**). The lowest PCS score was in the Northern Territory (a score of 49.3) and the highest in Victoria (50.2).

Table 5.7: Physical Component Summary, State/Territory, 1995
Standardised score

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
Capital city	49.8	50.2	49.8	49.4	49.7	49.9	49.5	50.1[1]	49.9
Other major urban centres[2]	49.5	49.9	49.7	..	..	..	..	..	49.6
Rest of State/Territory	49.6	50.2	49.7	49.4	49.7	49.6	49.3	–[3]	49.7
Whole of State/Territory	49.7	50.2	49.7	49.4	49.7	49.8	49.4	50.1	49.8

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3

Rest of State (Queensland as the standard)

The PCS score for residents of the non-metropolitan areas of Queensland was estimated to be 49.8, as expected from the State rates. This was marginally lower than the score recorded for residents of **Brisbane** (a PCS score of 49.9).

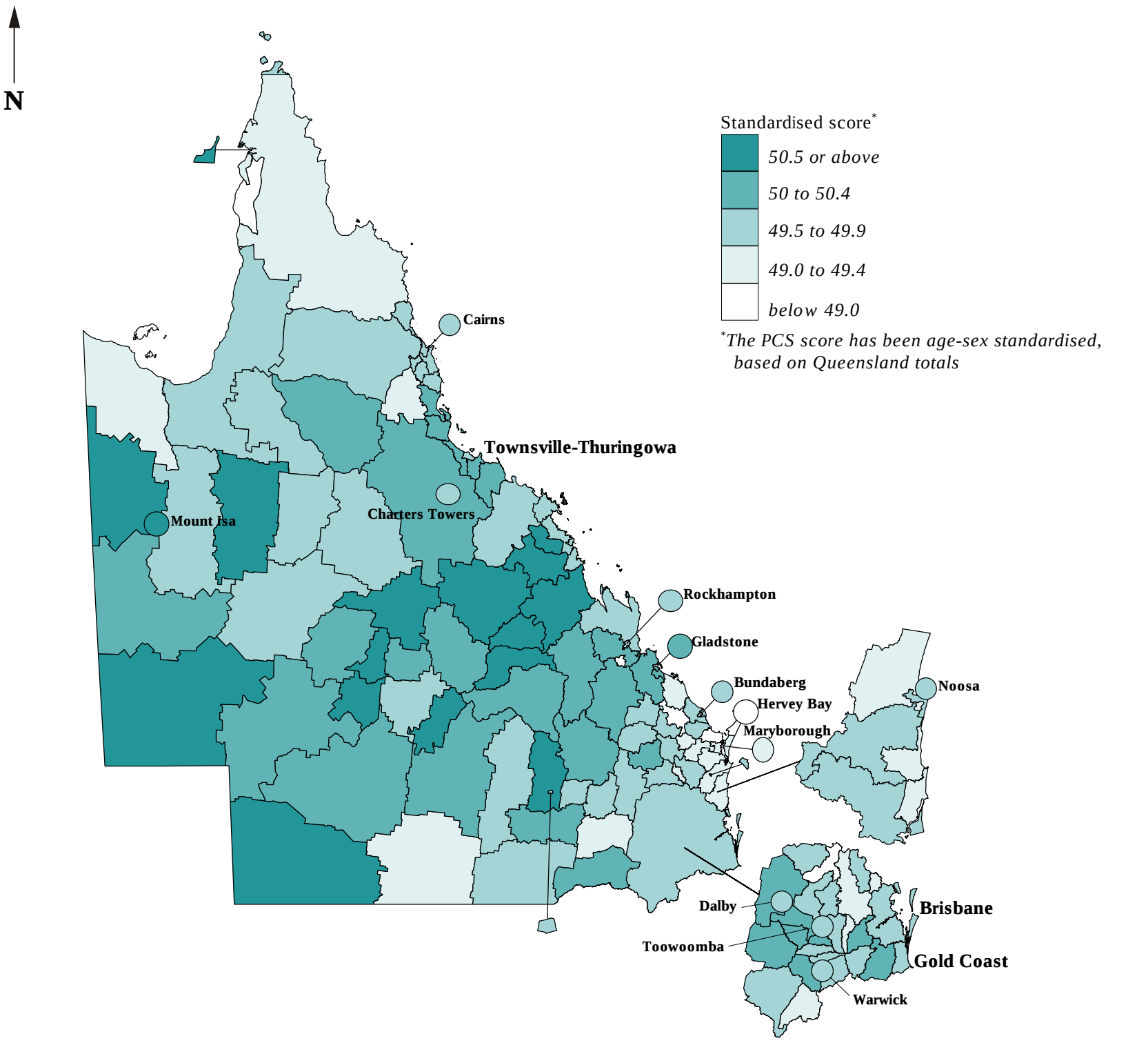
As can be seen from **Map 5.4**, SLAs with the highest scores (indicating better physical health) were generally situated in a band extending from the mid-north coast to the central western region. These SLAs included Ilfracombe (with a PCS score of 51.2), Broadsound (51.0), Peak Downs, Nebo and McKinlay (each with 50.8), Mirani and Isisford (both with 50.7), Aramac, Belyando, Diamantina and Mount Isa (each with 50.6), Emerald, Tambo and Fitzroy [Part B] (each with 50.5) and Duaringa, Barcoo, Bauhinia, Barcaldine and Longreach (each with 50.4). High scores were also recorded in the northern SLA of Cook (with a PCS score of 51.0) and the southern SLAs of Bulloo (50.8), Bungil (50.7) and Taroom (50.4).

The lowest scores were recorded in areas just north of **Brisbane** in Mount Morgan (a PCS score of 47.6), Hervey Bay and Kolan (both with 48.9), Nanango and Biggenden (both with 49.0), Tiaro and Miriam Vale (both with 49.1), Herberton, Caloundra [Part A] and Murgon (each with 49.2) and Noosa [Part B] and Esk (both with 49.3). The far northern SLAs of Aurukun (48.7), Mornington (48.8) and Burke (49.1) and the areas just west of **Brisbane** of Laidley (49.2) and Tara (49.3) also had relatively low ratios.

There were correlations of meaningful significance at the SLA level with the variables for high income families (0.58) and female labour force participation (0.55). The correlation of substantial significance recorded with the IRSD (0.61) also indicates a positive association at the SLA level between high mean scores (indicating better physical health) and socioeconomic advantage. The correlations with the health status and health service use variables were generally weaker than in **Brisbane**, with the only correlation of significance recorded with the variable for people reporting fair or poor health (-0.92).

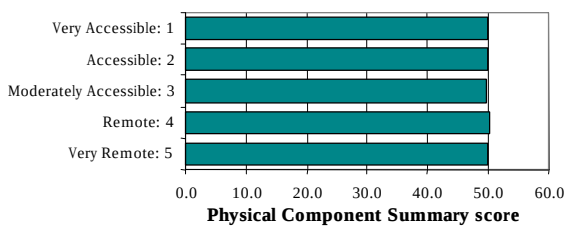
Map 5.4: Physical Component Summary* SF-36, Queensland, 1995

mean Physical Component Summary (PCS) score* in each Statistical Local Area



Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Accessibility/Remoteness Index of Australia



There is virtually no difference in Physical Component Summary (PCS) scores across the ARIA categories. The highest mean score is in the Remote areas (a PCS score of 50.2), with the lowest (49.8) in each of the Accessible, Moderately Accessible and Very Accessible categories.

Source: Calculated on ARIA classification, DHAC

Estimated number of people with a handicap, 1993

Capital city comparison (Australia as the Standard)

The estimates presented below do not include people living in institutional accommodation but do include those living more independently in, for example, community or group housing.

Age-sex Standardised Ratios (SRs) calculated from the 1993 Survey of Disability and Ageing of the estimated number of people with a handicap ranged from 14 per cent lower than expected (in relation to the Australian rates) in **Sydney** (86**) 13 8 per cent lower in **Darwin** (87**), to 11 per cent higher in **Perth** (111**). The ratios cover a wider range than those calculated from the 1988 Survey (**Table 5.8**). Most other capital cities had SRs in 1993 which were close to the level expected from the Australian rates.

Table 5.8: Estimated number of people with a handicap, capital cities
Standardised ratios

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
1993	86**	100	102**	110**	111**	102**	87**	97**	98**
1988	97**	100	93**	101**	104**	..	..	..	98**

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

The regional distribution of people with a disability (and who are handicapped by that disability) is likely to be affected by a number of factors associated with their disability, in addition to any association between a higher prevalence of disability and poorer socioeconomic status. Such factors include the location of dedicated therapeutic, educational and employment facilities, as well as the location of accommodation, both group or community housing and institutional accommodation. For example, people who have moved out of institutional accommodation into group or private housing often remain close to the institution in which they previously lived. This may reflect a choice to remain near to available services eg. day centre, education or employment services (which may be located with or near to the institution), or because group housing has been provided in the local area.

Another important influence is likely to be that people may have chosen to live in an area in which such therapeutic and educational services are available. While this may have been a more important influence in the past, when transport to these services was less readily available than it is now, such historical influences can remain for many years.

Brisbane (Queensland as the standard)

There were an estimated 175,609 people with a handicap in **Brisbane**, two per cent fewer than were expected from the State rates (an SR of 98**).

Ratios elevated by at least 10 per cent were generally recorded in the inner and middle regions (**Map 5.5**), with the highest SR recorded in Moreton Island (an SR of 129). Highly statistically significant ratios in the highest range mapped, were recorded in City/Spring Hill and Herston/Newstead (both with an SR of 128**), Darra-Sumner/Wacol (127**), New Farm (125**), West End/South Brisbane/Highgate Hill (an SR of 118**), Dutton Park/ Woolloongabba (117**), Redland Balance (116**) and Berrinba-Karawatha/Kingston (110**).

The lowest ratio was recorded for residents of Seventeen Mile Rocks, the SR of 80** indicating that there were 20 per cent fewer people with a handicap than expected. Low ratios were also recorded in Anstead/Bellbowrie/Moggill and Jindalee/River Hills, with SRs of 82** and 80** respectively. In total, 13 areas were mapped in the lowest range.

It was estimated that more than 8,000 people in the areas of Ipswich (10,036), Caboolture [Part A] (9,346) and Redcliffe (8,300) had a handicap in 1993.

Correlations of statistical significance at the small area level with the variables for dwellings without a motor vehicle (0.75), low income families (0.67) and unemployed people (0.58). These results, together with the IRSD (-0.57), suggest the existence of an association at the small area level between high proportions of the population with a handicap and socioeconomic disadvantage.

Gold Coast-Tweed Heads

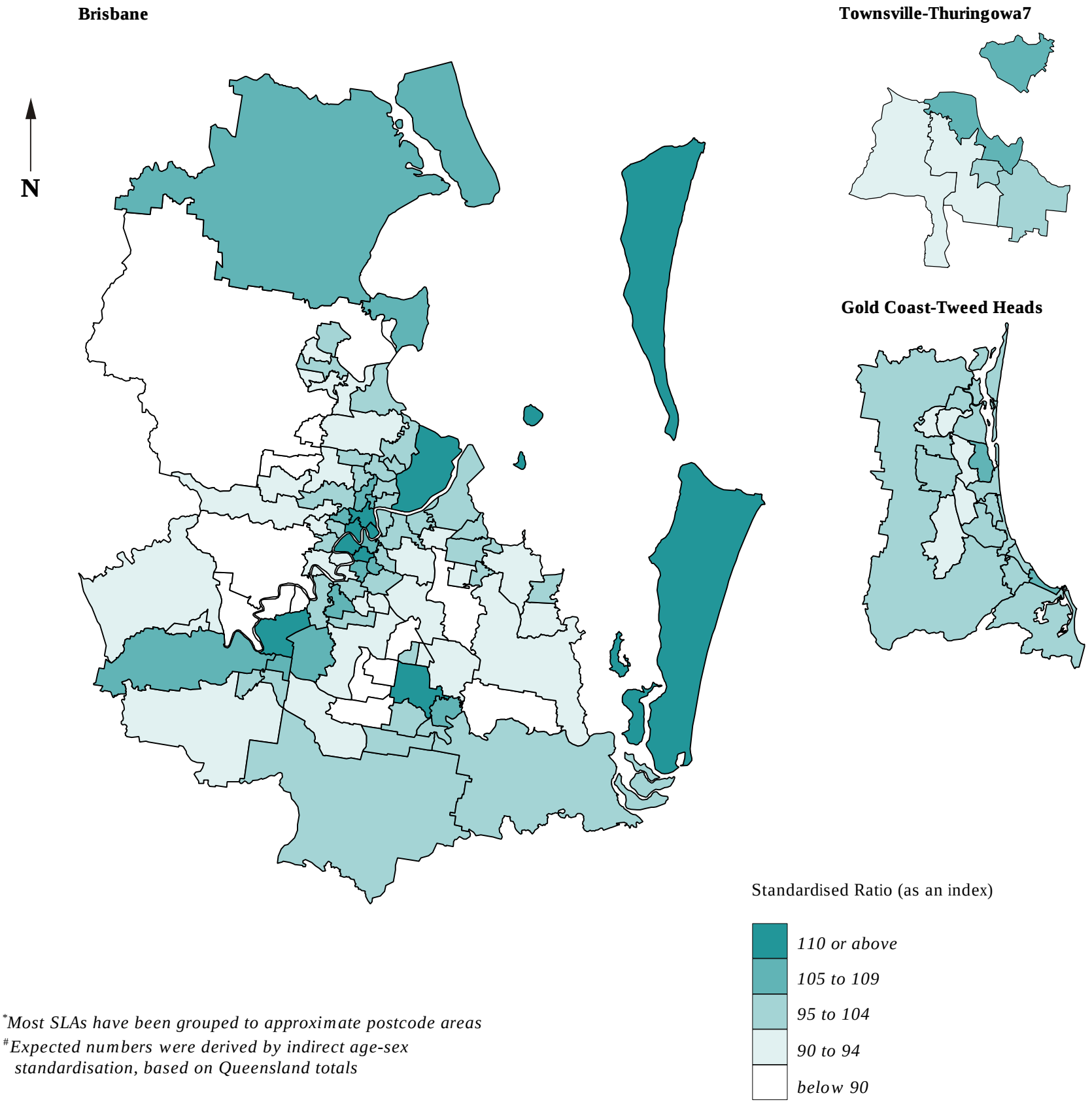
In 1993, there were 47,471 people with a handicap in **Gold Coast-Tweed Heads**, marginally fewer than expected from the State rates (an SR of 99). Elevated ratios were recorded along the coastal areas of Coolangatta/Tugun (108**), Labrador/South Port (105**), Broadbeach/Burleigh Heads (104**) and Palm Beach/Currumbin (103). At the other end of the scale, ratios below the level expected ranged from 91** in Arundel/Ashmore to 98 in both Tweed Heads and Currumbin Waters/Elanora.

Townsville-Thuringowa

The SR recorded for residents of **Townsville-Thuringowa** was three per cent lower than the level expected (an SR of 97**), representing an estimated 13,276 people with a handicap. Townsville Coastal/Magnetic Island (an SR of 106**) recorded a ratio above the level expected, while Townsville South East and Gulliver/Hermit Park (both 98) and Murray/Mt Louisa and Thuringowa [Part A] (both 93**) had lower ratios.

Map 5.5: Estimated number of people with a handicap, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1993

Standardised Ratio: number of people in each area* compared with the number expected#



*Most SLAs have been grouped to approximate postcode areas

#Expected numbers were derived by indirect age-sex standardisation, based on Queensland totals

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Estimated number of people with a handicap, 1993

State/Territory comparison (Australia as the Standard)

The estimates presented below do not include people living in institutional accommodation but do include those living more independently in, for example, community or group housing.

At the *Whole of State/Territory* level, standardised ratios (SRs) calculated from the 1993 Survey of Disability and Ageing of the estimated number of people with a handicap ranged from a high of 112** in Western Australia and 110** in South Australia to a low of 91** in New South Wales (**Table 5.9**). There was a similar range across the non-metropolitan areas of the remaining States and the Northern Territory.

The SRs in the *Rest of State/Territory* areas were less variable in the later period shown (when compared with those calculated from the 1988 survey), with the highest ratios occurring in Western Australia and South Australia and the lowest in the Northern Territory.

Table 5.9: Estimated number of people with a handicap, State/Territory
Standardised ratios

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1993									
Capital city	86**	100	102**	110**	111**	102**	87**	97**[1]	98**
Other major urban centres[2]	95**	131**	102**	..	..	..	..	..	101**
Rest of State/Territory	98**	106**	106**	112**	115**	105**	97*	–[3]	104**
Whole of State/Territory	91**	103**	104**	110**	112**	104**	92**	98**	100
1988									
Rest of State/Territory	98**	119**	96**	90**	99**	..	..	..	102**

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Rest of State (Queensland as the standard)

There were an estimated 170,123 people with a handicap in the non-metropolitan areas of Queensland, three per cent more than expected from the State rates (an SR of 103**).

In all, 19 SLAs were mapped in the highest interval, with ratios of 110 and above. SLAs mapped in this category were mainly located in the far north of the State, along the western border and in the areas surrounding **Brisbane** (**Map 5.6**). The most highly elevated ratios were recorded in Mount Morgan (an SR of 130**, and an estimated 679 people with a handicap), Aurukun (122, 97 people), Burke (117, and 154 people), Nanango (117**, and 1,070 people), Biggenden (115*, and 287 people), Miriam Vale (115**, and 566 people), Etheridge (114, and 136 people), Paroo (114**, and 382 people) and Carpentaria (114**, and 441 people). The SLAs of Aurukun, Burke, Paroo and Carpentaria have relatively high proportions of more than 20 per cent of Indigenous Australians in their populations.

Just over half (50.8 per cent) of the SLAs in the non-metropolitan areas of Queensland had ratios in the middle range mapped, within five per cent of the level expected. However, Rockhampton (with an SR of 102*), Maroochy [Part A] (102*), Cairns (98*) and Burdekin/Dalrymple/Thuringowa/Townsville (97*) were the only SLAs in this category to record a ratio of statistical significance.

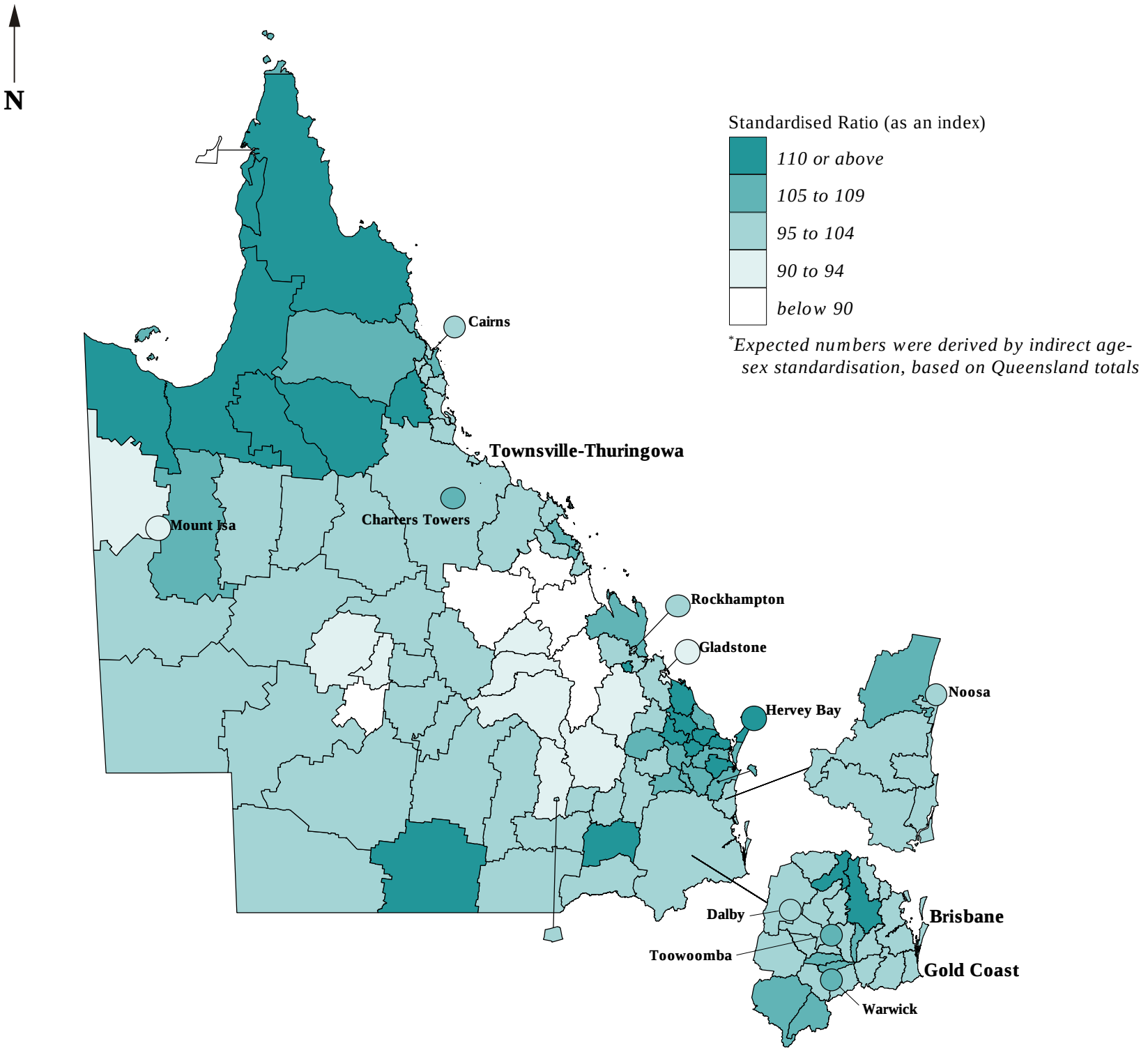
Standardised ratios of at least ten per cent below the level expected were recorded in Weipa (with an estimated 23 per cent fewer people with a handicap than expected from the State rates, an SR of 77**), Belyando (85**), Broadsound (87**), Duaringa (88**), Isisford (88) and Nebo (89).

In 1993, 11,818 people resident in Toowoomba were estimated to have a handicap. High numbers were also estimated for the towns of Maroochy [Part A] (10,944 people), Cairns (10,845 people), Bundaberg/Burnett (8,741) and Rockhampton (8,036 people).

There was a correlation of substantial significance with the variable for low income families (0.77), and of meaningful significance with unemployed people (0.54). Inverse correlations of meaningful significance were recorded with the variables for high income families (-0.68) and female labour force participation (-0.57). These results, and the inverse correlation with the IRSD (-0.65), suggest the existence of an association at the SLA level between high proportions of the population with a handicap and socioeconomic disadvantage.

Map 5.6: Estimated number of people with a handicap, Queensland, 1993

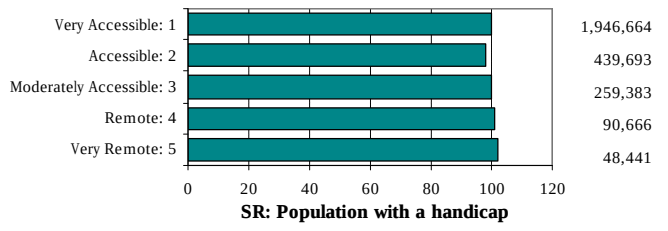
Standardised Ratio: number of people in each Statistical Local Area compared with the number expected*



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Accessibility/Remoteness Index of Australia



There are only minor variations across the ARIA categories in standardised ratios (SRs) for the estimated number of people with a handicap. The range is from an SR of 98 in areas in the Accessible category (with 2 per cent fewer people estimated to have a handicap than expected from the State rates) to an SR of 102 in the Very Remote areas (with 2 per cent more people estimated to have a handicap than expected).

Source: Calculated on ARIA classification, DHAC

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Deaths

Introduction

Variations in death rates attributable to measures of equity (such as social class) are perhaps the most telling of all the indicators relevant to a social health analysis. The maps in this section include infant deaths and premature deaths of males and females, and by major cause of death. Details of years of potential life lost are also shown.

Variations in death rates by social class

Variations in death rates related to social class have been shown in a wide range of studies in overseas countries, and in some studies in Australia. The most detailed Australian work in this area is an analysis of deaths occurring in 1985, 1986 and 1987, undertaken for the National Health Strategy (1992) and published in more detail by the Australian Institute of Health and Welfare as part of their Health Monitoring Series (Mathers 1994) (**Table 5.1**). As noted above, Mathers has recently updated this work by adding the period 1995-97 (**Table 5.2**). Mathers' study is discussed in detail in Chapter 1 but shows that the differentials in mortality rates that were evident in 1985-87 have persisted over the decade. This analysis provides details of the extent of disparities in mortality rates according to the relative social disadvantage of the population, as measured by the ABS SEIFA Index of Relative Socio-Economic Disadvantage.

Both the NSW and Victorian governments have also recently released health reports that examine socioeconomic variations in death rates in some detail (NSW Health Department 1997; Department of Human Services Victoria, in press). In NSW over the period 1990 to 1994, premature deaths from all causes were inversely related (-0.59) to high socioeconomic status. Moreover, four out of the five areas with the highest mortality rates and the lowest socioeconomic status also had the highest percentage of Indigenous people. In Victoria in 1996, socioeconomic status was also found to be correlated with premature death, with socioeconomic disadvantage explaining 36 per cent of the variance in life expectancy of males and 30 per cent of the variance in females.

Changes in numbers and rates, 1986 to 1995

Australia

As Australia's population continues to grow and age, the number of deaths each year is expected to increase over the next several decades (AIHW 1998). Over the nine year period from 1986 to 1995 the number of deaths in Australia increased by 8.8 per cent, rising from 114,981 deaths in 1986 to 125,133 deaths in 1995. However, this trend was a reflection of the increased number of deaths experienced among people aged 65 years and over, which rose by 17.6 per cent over this period. In line with increasing life expectancy in Australia, the number of deaths declined in all other age groups. The most substantial decline was for infants (those aged under 12 months), for whom the number of deaths decreased by 32.7 per cent, from 2,154 deaths in 1986 to 1,449 deaths in 1995. This is largely due to a decline in deaths attributed to sudden infant death syndrome, which decreased from 2.2 deaths per 1,000 live births in 1987 to 0.8 per 1,000 live births in 1996 (AIHW 1998). Deaths recorded for 15 to 64 year olds in Australia also declined, from 29,892 to 26,532 over this nine year period, a decrease of 11.2 per cent.

Death rates have declined over this nine year period for all ages and in the age groups under 12 months (deaths per 1,000 live births), 15 to 64 years and 65 years and over.

Queensland

The number of deaths in Queensland over the nine year period from 1986 to 1995 increased by 15.7 per cent, rising from 17,861 in 1986 to 20,663 in 1995. Male deaths increased by 11.1 per cent, while a more substantial increase of 21.6 per cent was recorded for female deaths. Although there has been an overall increase in the number of deaths, this increase was evident only for people aged 65 years and over (an increase of 24.3 per cent). In 1995, there were 293 infant deaths (164 males and 129 females) recorded in Queensland, a decrease of 16.5 per cent since 1986. There was also a decrease in the number of deaths of people aged from 15 to 64 years, down by 3.2 per cent, from 4,890 deaths in 1986 to 4,732 deaths in 1995.

Death rates have declined for all ages and in the age groups under 12 months, 15 to 64 years and 65 years and over.

Changes in death rates by cause, 1986 to 1995

Australia

Over the period from 1986 to 1995, death rates of people aged from 15 to 64 years have declined for all major causes of death, with the largest decline occurring for deaths from circulatory system diseases, a decrease of 43.1 per cent (**Figure 5.1**). Other large decreases were recorded for deaths from respiratory system diseases (28.3 per cent); accidents, poisonings and violence (16.7 per cent); and cancer (13.1 per cent).

Queensland

In Queensland, death rates of people aged from 15 to 64 years have declined for all major causes of deaths, with the largest decline recorded for deaths from circulatory system diseases, a decrease of 46.7 per cent (**Figure 5.2**). Other large decreases were recorded for deaths from respiratory system diseases (22.4 per cent); cancer (16.0 per cent); and accidents, poisonings and violence (10.0 per cent).

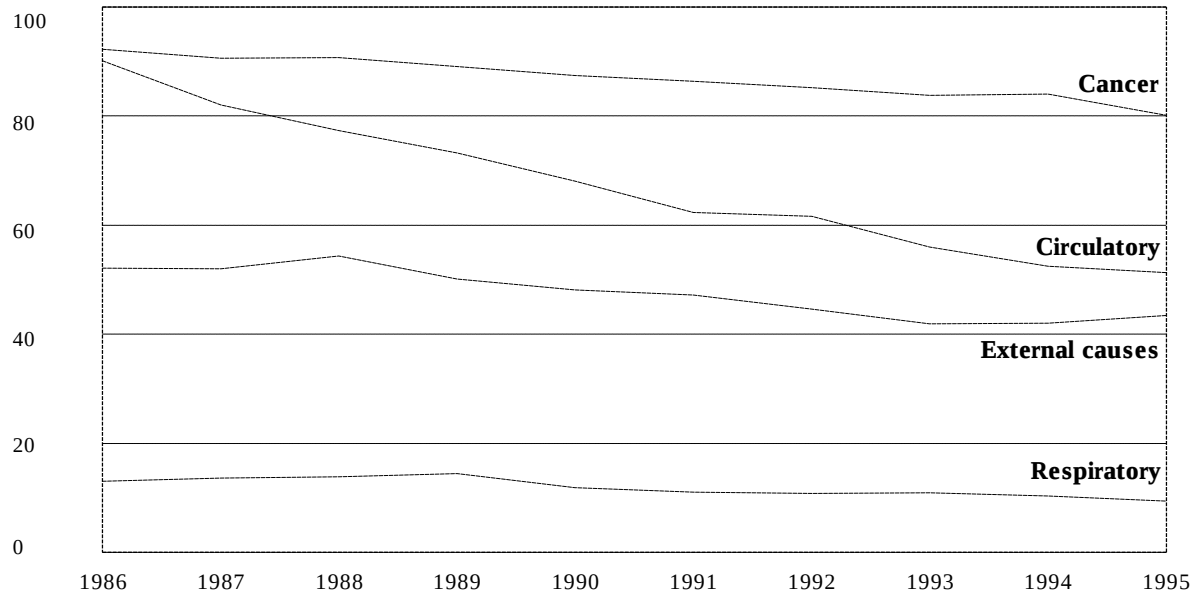
Changes in death rates by age group and sex, 1986 to 1995

Australia

Overall, premature death rates (ie. deaths of people aged from 15 to 64 years) declined at a greater rate for males (22.0 per cent fewer male deaths) than females (20.2 per cent fewer) over the years from 1986 to 1995. Male death rates from malignant neoplasms declined by 14.1 per cent over this nine year period, whereas female deaths from the same cause decreased by 11.7 per cent.

Figure 5.1: Death rates of people aged from 15 to 64 years, by cause, Australia

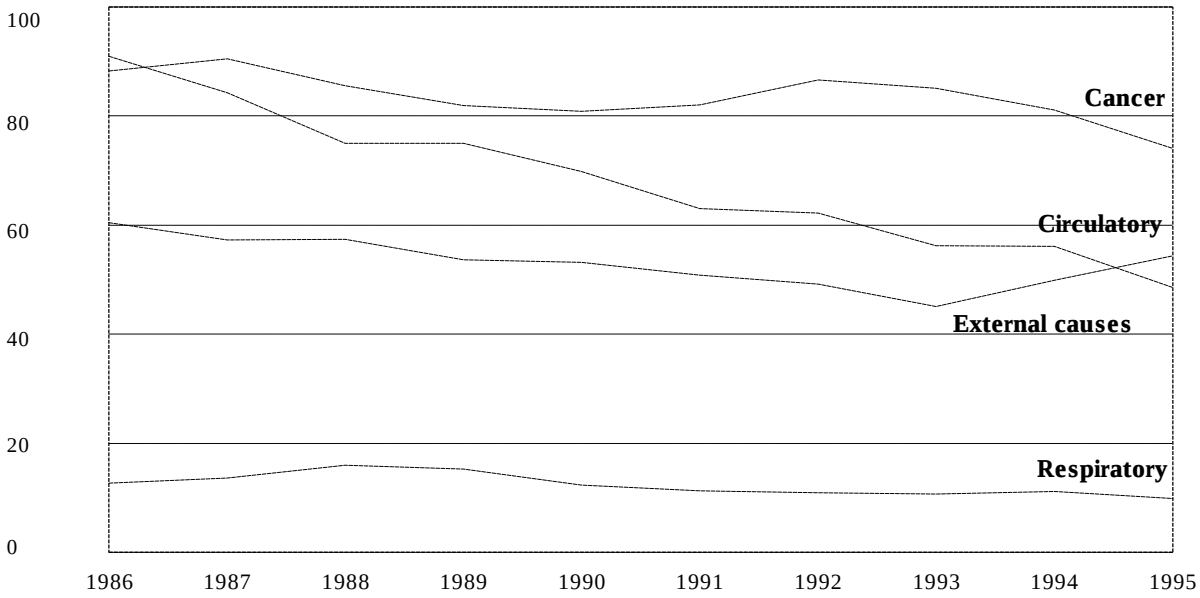
Deaths per 100,000



Source: ABS Causes of Death bulletins, ABS Catalogue No. 3303.0, 1986 to 1995

Figure 5.2: Death rates of people aged from 15 to 64 years, by cause, Queensland

Deaths per 100,000



Source: ABS Causes of Death bulletins, ABS Catalogue No. 3303.0, 1986 to 1995

Death rates of males and females from accidents, poisonings and violence were similar, with male deaths down by 16.4 per cent and females by 16.6 per cent over the years studied. Female death rates for circulatory system diseases declined at a greater than for males, with decreases of 46.1 per cent and 41.7 per cent, respectively.

The biggest differential in the rates of change recorded for males and females occurred for deaths due to diseases of the respiratory system. Between 1986 and 1995, death rates among 15 to 64 year olds from these diseases declined by 34.9 per cent for males. In contrast, female death rates over this same time period declined less substantially, from 9.5 deaths per 100,000 population in 1986 to 8.0 in 1995, a decrease of 16.4 per cent.

Queensland

In Queensland, premature death rates of males (down by 24.3 per cent) and females (21.5 per cent) declined at similar rates. Male death rates from diseases of the circulatory system decreased by 47.2 per cent, while female death rates decreased by a marginally lower 44.6 per cent, and male death rates from the combined causes of accidents, poisonings and violence declined 10.3 per cent, compared with 7.6 per cent for females. Death rates recorded for malignant neoplasms over this nine year period showed the reverse of this pattern. Between 1986 and 1995, female death rates from malignant neoplasms decreased at a rate of 19.5 per cent, while male death rates decreased by 13.2 per cent. Although the number of deaths due to diseases of the respiratory system only decreased by 1.8 per cent over the nine year period, this overall pattern was the result of a 31.3 per cent decrease in male death rates (from 16.0 deaths per 100,000 population in 1986 to 11.0 in 1995) while there was a 6.6 per cent decrease in female death rates (from 9.4 deaths per 100,000 population in 1986 to 8.7 in 1995).

Data mapped

Age range

There are two main reasons for basing the analysis on the death rates of the 15 to 64 year age group: these are outlined below.

The population aged from 15 to 64 years can be considered to be of 'working' age, and examined as a group. Although in recent years the lower age of the 'working' age population has been set at 20 years in some analyses, fifteen years of age has been retained here mainly for consistency with the first edition. Note however, that participation of 15 to 19 year olds in the labour force has declined over the ten years from 1986 to 1996, from 52.9 per cent to 47.0 per cent for males, and from 55.5 per cent to 47.7 per cent for females.

The exclusion of deaths of persons aged 65 years or more (which account for three quarters of all deaths) is important not only because of the focus on prematurity. A significant proportion of people aged 65 years and over die while residents of nursing homes and other aged care facilities. Aged care facilities are unlikely to be located in the same area as the person's previous (domestic) home and are over-represented in capital cities compared with the non-metropolitan areas. Their inclusion would increase the rates for those SLAs in which nursing homes are largely concentrated and reduce the rates in other areas, thereby distorting the analysis. The concern is that deaths of people resident in aged care facilities may influence the rates for that SLA, when it is not necessarily the area, in terms of its socioeconomic profile, in which they would have lived throughout much of their life.

Residents of some nursing homes and other types of supported accommodation (such as hostels, boarding houses and shelters used by people with psychiatric conditions and community houses for those with an intellectual disability) are more likely than the population in general to die at ages below 65 years.

Since the mid-1980s (the period on which the analysis in the first edition of the atlas was based) the number of deaths occurring at ages from 15 to 64 years has declined, and the age of people dying in nursing homes has increased. It would have been possible, therefore, to increase the age range in this analysis to include deaths between the ages of 65 and 74 years (thereby increasing the number of cases and strengthening the analysis at the SLA level).

To do so would, however, have reduced the possibility of comparison with the analysis in the first edition. On balance, it was considered to be more important to retain comparability than to boost the numbers.

Measure mapped

Age-sex standardised ratios (Standardised Death Ratios, SDRs) have been calculated and mapped for a range of causes of death, by place of usual residence, to illustrate the extent of variation in death rates between the populations in the areas mapped. A brief description of the technique of standardisation, its purposes, and method of calculation, is in Appendix 1.3. For infant deaths, the more traditional infant death rate (infant deaths per 1,000 live births) has been mapped.

Readers should be aware that two standards have been used in this atlas. Standardised ratios calculated for the States, Territories, capital cities and other major urban centres have the Australian rates as the standard. Those ratios calculated for Statistical Local Areas are based on the rates applicable to the relevant State or Territory.

Thus, the text describing the variables refers to two standards: the discussion in the 'Capital city comparison' and 'State/Territory comparison' sections has Australia as the standard (as do the tables in this section), whereas the discussion describing 'Brisbane' or 'Rest of State' has Queensland as the standard. In this way the capital cities, States, etc., can be compared with each other against the Australian rates, and the smaller area data within each State and Territory can be compared with each other against the State/Territory rates.

Variables mapped

Only a selection of the total number of causes of death of the population aged from 15 to 64 years has been mapped. These include deaths from all causes (separately for females and males) and from four major cause groups – deaths from diseases of the circulatory system, diseases of the respiratory system, from all cancers (and separately for deaths from lung cancer) and from the external causes of accidents, poisonings and violence. **Table 5.10** shows the number of deaths for the age groups and causes for which data were analysed and mapped.

Table 5.10: Deaths by cause and age, Queensland, 1992 to 1995

Age at death	Cancers	Circulatory system diseases	Respiratory system diseases	Accidents, poisonings & violence	All other causes	Total deaths
Infant (under 1 year)	**8**	**11**	**45**	**28**	**1,178**	**1,270**
15 to 64 years	**6,886**	**4,613**	**886**	**4,106**	**2,429**	**18,920**
males	3,927	3,318	534	3,170	1,535	12,484
females	2,959	1,295	352	936	894	6,436
Other ages	**15,153**	**31,300**	**5,459**	**1,635**	**8,704**	**62,251**
All ages	**22,047**	**35,924**	**6,390**	**5,769**	**12,311**	**82,441**

Source: ABS Causes of Death bulletins, 1992 to 1995

Infant deaths are analysed separately as they are recognised internationally as a group with historically high mortality rates, and rates with marked socioeconomic differentials. The four cause of death groups mapped were chosen because they represent a large proportion of the deaths in the 15 to 64 year age group (85.7 per cent, compared to 87.4 per cent in the mid-1980s). They are also predominant among the causes for which persons of lower socioeconomic status have been shown to have higher death rates than those of higher socioeconomic status. Importantly, they provide a sufficient number of deaths (by aggregating four years of data, from 1992 to 1995) to be analysed at the SLA level for presentation in the State and Territory atlases.

Some other important causes of death which are of public concern (eg. deaths from suicide) and/or are important causes of death among the most disadvantaged in the population (eg. deaths from mental disorders) have insufficient numbers for the production of meaningful statistics for most areas at the local level. As the combined causes of accidents, poisonings and violence (which include suicides) are the major cause of death for young people, deaths from these causes have been mapped separately for the 15 to 24 year age group. A separate discussion on deaths from suicides is on pages 132 and 133.

Table 5.11 shows the number of deaths for the causes mapped for **Brisbane** (the Brisbane Statistical Division) and the *Rest of the State*.

Table 5.11: Deaths by selected cause and area, Queensland, 1992 to 1995

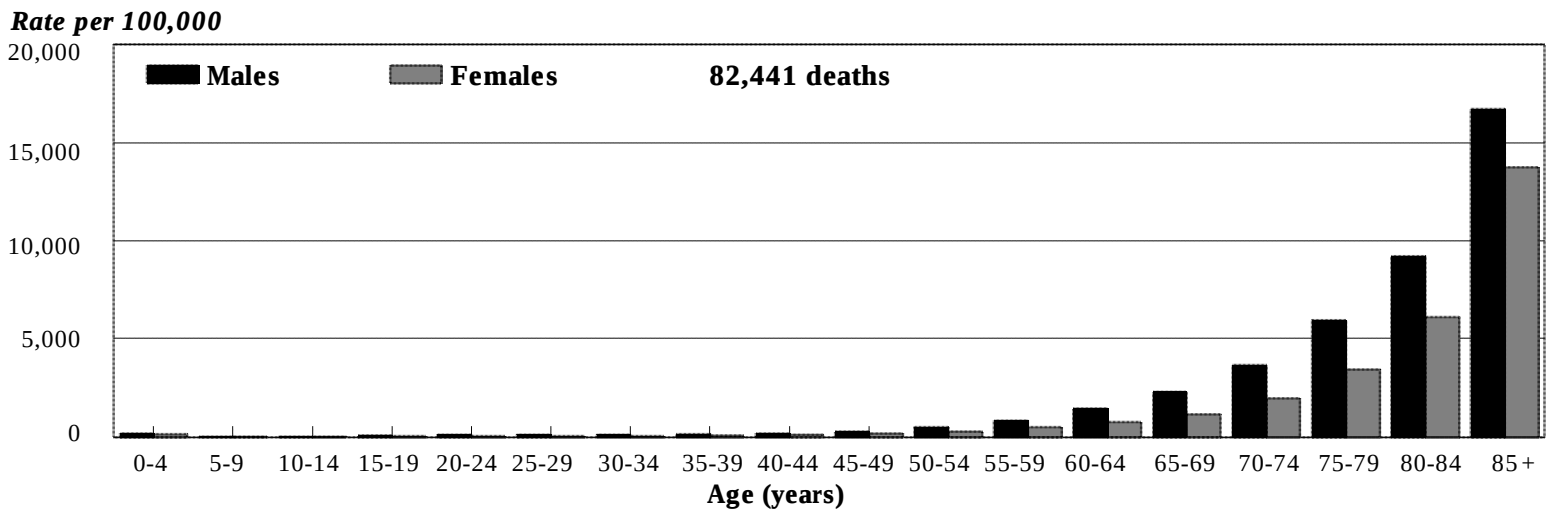
Cause of death	Brisbane and the other major urban centres	Rest of State	Total
Infant: all ages	**705**	**565**	**1,270**
15 to 64 years	**10,277**	**8,643**	**18,920**
Cancers	3,900	2,986	6,886
Circulatory system diseases	2,453	2,160	4,613
Respiratory system diseases	449	437	886
Accidents, poisonings & violence	2,162	1,944	4,106
15 to 24 years	**847**	**656**	**1,503**
Accidents, poisonings & violence	646	515	1,161
All ages	**47,650**	**34,791**	**82,441**

Source: See *Data sources*, Appendix 1.3

Figures 5.3 to **5.7** give a graphical presentation of death rates in Queensland by age and sex for each of the major causes analysed (apart from infant deaths). Please note that the scales for the rates per 100,000 are different for each figure.

Figure 5.3 highlights both the steeply rising death rates from age 50 years for males and from age 60 years for females, as well as the higher rates of deaths for males across all age groups.

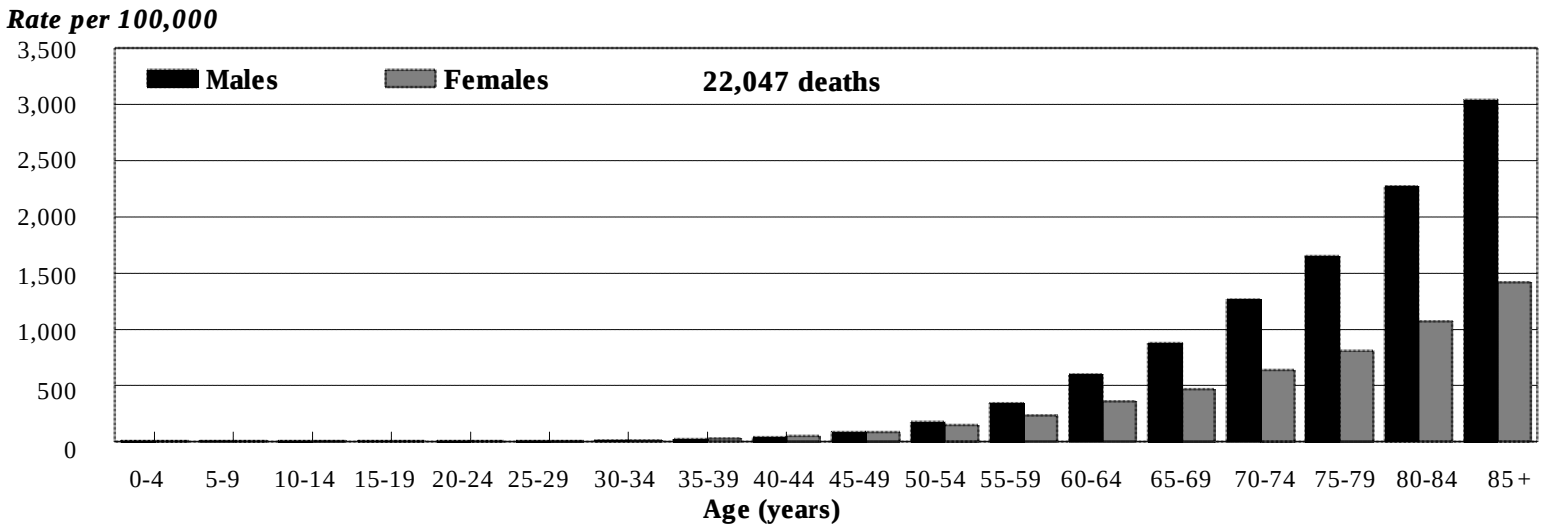
Figure 5.3: Deaths from all causes, by age and sex, Queensland, 1992 to 1995



Source: See *Data sources*, Appendix 1.3

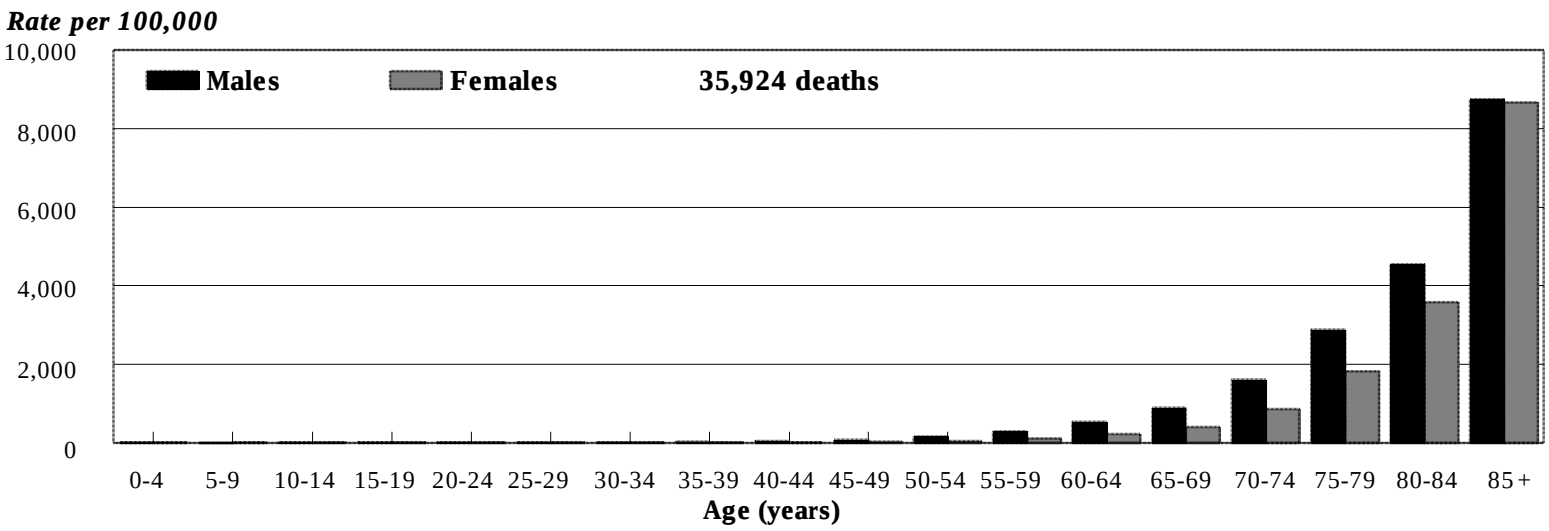
Figure 5.4 shows the predominance of males in deaths from cancer, whereas in **Figure 5.5** the similar pattern for deaths from circulatory system diseases is broken in the 85 years and over age group, where female death rates closely approximate those of males. Death rates from respiratory system diseases (**Figure 5.6**) reflect the 'all causes' pattern.

Figure 5.4: Deaths from cancer, by age and sex, Queensland, 1992 to 1995



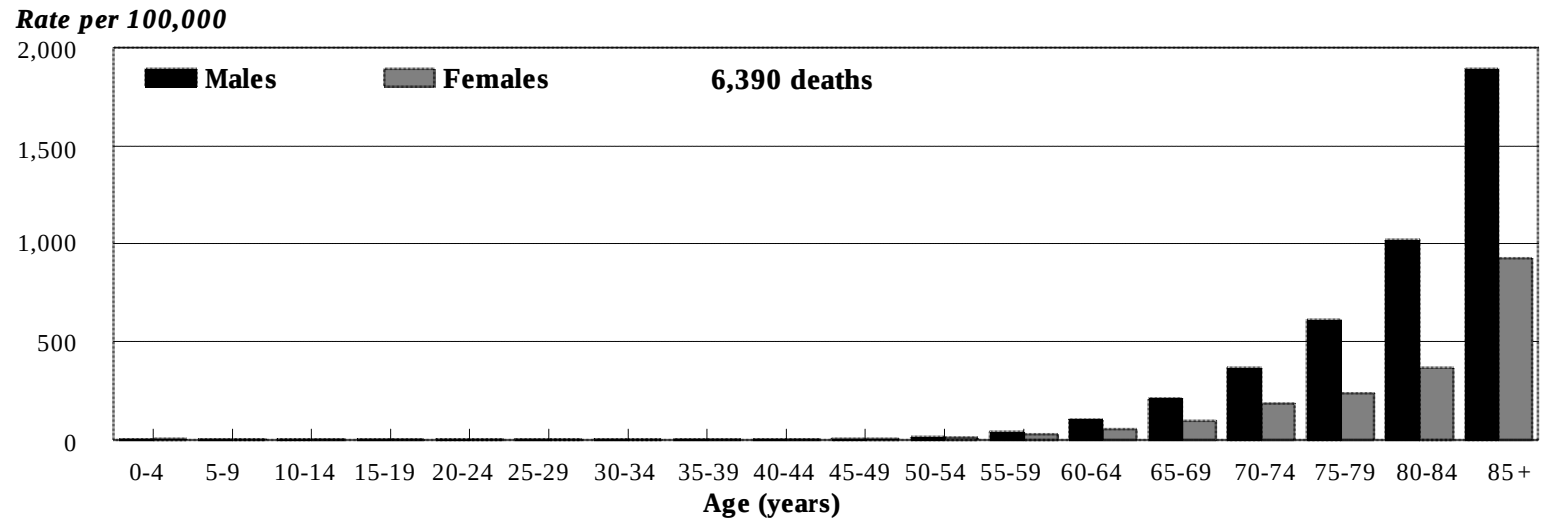
Source: See *Data sources*, Appendix 1.3

Figure 5.5: Deaths from circulatory system diseases, by age and sex, Queensland, 1992 to 1995



Source: See *Data sources*, Appendix 1.3

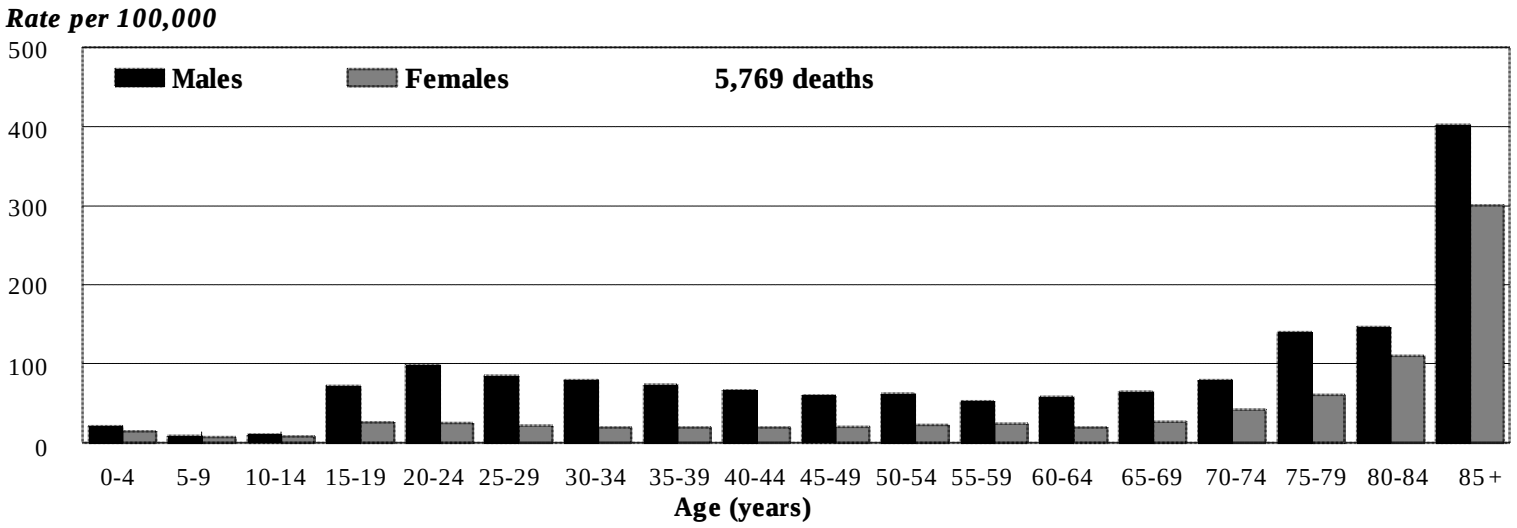
Figure 5.6: Deaths from respiratory system diseases, by age and sex, Queensland, 1992 to 1995



Source: See *Data sources*, Appendix 1.3

Deaths from the external causes of accidents, poisonings and violence (**Figure 5.7**) occur at earlier ages than is the case for other causes, and occur across all age groups. Again, males predominate across the age groups, with peaks at younger ages (from 15 to 29 years, where motor vehicle accidents and suicides are major causes), in middle age (50 to 59 years) and in the oldest age group shown (85 years and over).

Figure 5.7: Deaths from accidents, poisonings and violence, by age and sex, Queensland, 1992 to 1995



Source: See *Data sources*, Appendix 1.3

Deaths from suicide

Taylor et al. (1998) found that risks for suicide increased significantly with decreasing socioeconomic status in males, but not in females. An even stronger relationship existed when suicide rates were controlled for country of birth. When adjusted for age and country of birth, suicides rates were 66 per cent higher in the lowest socioeconomic status quintile compared to the highest quintile and 39 per cent higher in the 15 to 24 year age group (youth suicide). These findings suggest that socioeconomic status plays an important role in male suicide rates among Australians and residents from non-English speaking countries, and among young people.

Despite suicide being an important cause of death, in particular amongst young people[5], it has not been mapped in this chapter. As the number of recorded suicides is quite low at the SLA level there is a possibility that mapping them will lead to misinterpretation of results. The following is an overview of the deaths recorded for suicides over the years from 1986 to 1995 for Queensland as a whole, as well as separately for **Brisbane** and the *Rest of the State*.

In Australia, deaths are classified as self-inflicted by the coroner or a Government Medical Officer upon consideration of the evidence, but it is likely that the number of suicides is under-reported. A death intended as suicide may appear as the result of an unrelated cause, ie. a motor vehicle accident, and thus is not recorded as such by the coroner. For example, young male residents of country areas are over represented in single motor vehicle accidents.

There were 4,215 deaths of all ages from suicide in Queensland over the nine year period from 1986 to 1995. Of these, 85.8 per cent (3,618) were aged from 15 to 64 years and 19.7 per cent (832) were aged from 15 to 24 years at death. Over this time period there has been a 28.6 per cent increase in the number of deaths recorded for all suicides at all ages, rising from 385 in 1986 to 495 in 1995. An even more substantial increase was recorded among 15 to 24 year olds, where the number of suicides rose from 57 in 1986 to 93 in 1995, an increase of 63.2 per cent. While there has been a significant recent increase in suicide in the young, Goldney and Harrison (1998) have highlighted continuing reductions in suicide rates in middle aged and older Australians over the last hundred years.

Males predominated in these deaths, accounting for 80.0 per cent of all suicides of all ages, 80.4 per cent of 15 to 64 year olds and 84.0 per cent of 15 to 24 year olds. However, research has suggested that females attempt suicide more often, but that males use more violent, and therefore more successful means, such as firearms (see box).

Attempted suicide

A study by the Health Department of Western Australia (1996) found that over the period from 1981 to 1993 attempted suicides rates were considerably higher among females than males, an age standardised rate of 162 compared to 105 per 100,000 person-years respectively. Female rates were highest in the 15 to 19 year age group (455 attempted suicides per 100,000 person-years), followed by those aged from 20 to 24 years (346 per 100,000). For males, rates were highest in the 20 to 24 year age group (273 per 100,000), with slightly lower rates among those aged 25 to 29 (228 per 100,000). Despite the overall higher rates recorded for females, over the years from 1981 to 1993, female rates declined by 2.4 per cent per year while male rates declined by only 0.2 per cent.

Numbers of suicides not only vary by age and sex: but also by place of residency. While there were more deaths from suicide of residents of the non-metropolitan areas of Queensland (2,298 deaths compared to 1,917 in **Brisbane** over the nine years from 1986 to 1995), because it contains a higher proportion of the State's population, it is more informative to consider death rates.

[5]Suicide is also an important cause of death at older ages.

In 1995, death rates from suicide among 15 to 64 year olds were 6.6 per cent higher for residents of **Brisbane** than for residents of the non-metropolitan areas of Queensland, a rate of 21.2 per 100,000 population compared to 19.8 per 100,000, respectively. The difference in 1995 was more substantial in the 15 to 24 year age group, with a death rate of 20.4 per 100,000 for residents of **Brisbane**, compared to 16.3 per 100,000 non-metropolitan residents**,** a difference of 20.1 per cent.

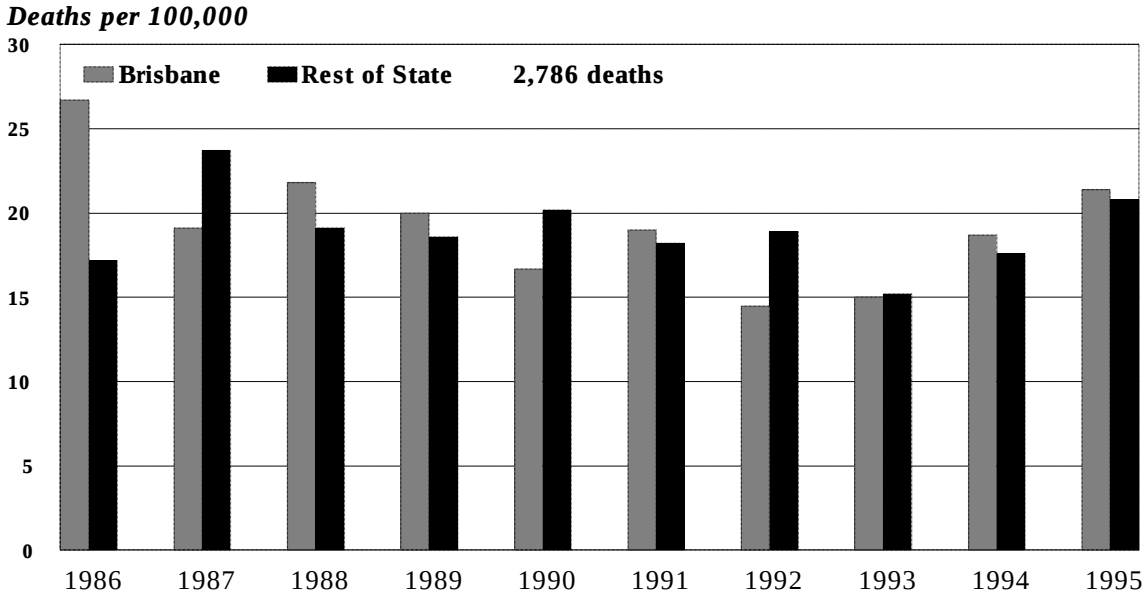
In the following charts, suicide rates are shown separately for the 15 to 24 and 25 to 64 year age groups. Among the older age groups (**Figure 5.8**) rates were higher for residents of **Brisbane** than for the non-metropolitan areas in six of the nine years analysed. The pattern has become more stable in the later years shown.

For the 15 to 24 year age group, rates were higher in the non-metropolitan areas of Queensland in six of the nine years of data analysed (**Figure 5.9**). However the rates varied more from year to year, and the differentials between the capital city and non-metropolitan rates were more marked in several of the years.

It is likely that the higher rates in country areas relate to factors such as a relative lack of job and training opportunities, the decline of many rural communities and the relatively larger numbers of Aboriginal people in the population, a group which has higher suicide rates.

Figure 5.8: Suicide rates of people aged from 25 to 64 years, Brisbane and Rest of State

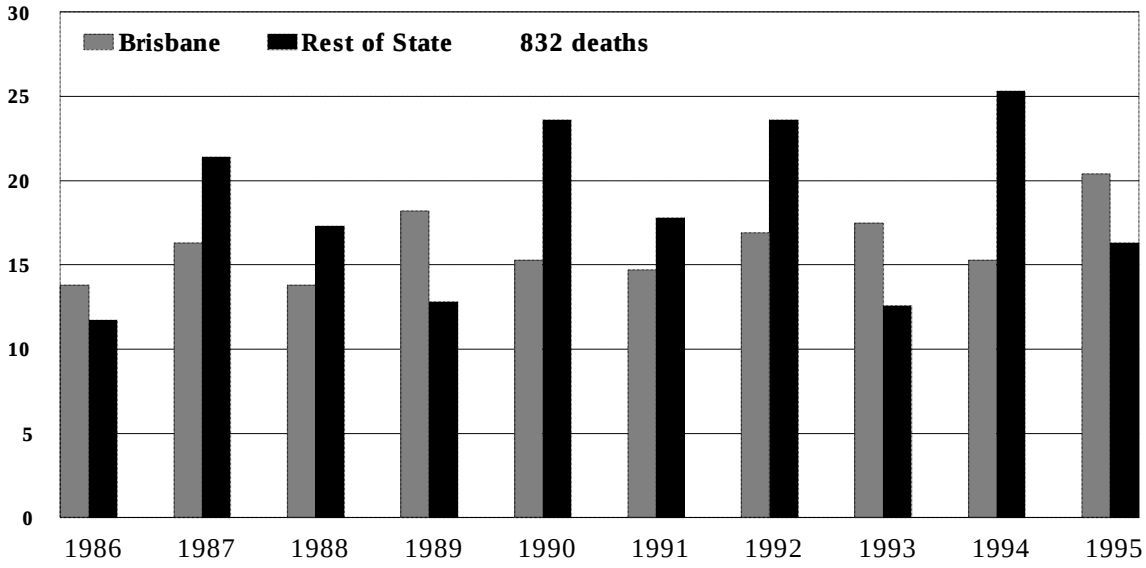
Deaths per 100,000



Source: Various issues, ABS Causes of Death bulletins

Figure 5.9: Suicide rates of people aged from 15 to 24 years, Brisbane and Rest of State

Deaths per 100,000



Source: Various issues, ABS Causes of Death bulletins

Infant deaths, 1992 to 1995

Capital city comparison

The infant death rate is calculated as the number of infant deaths (deaths under one year of age) per 1,000 live births. Over the years 1992 to 1995, the rate varied between the capital cities, from a high of 10.3 in **Darwin** to around half that level in a number of cities. **Hobart** had the second highest rate.

The *All capitals* infant death rate has declined by one third between the two periods for which data have been analysed (**Table 5.12**). As noted earlier (page 127), this is largely the result of the decline in deaths from sudden infant death syndrome. There were similar reductions in all of the capital cities other than **Darwin**, where the infant death rate rose, from 9.4 for the period 1985 to 1989, to 10.3 for the years 1992 to 1995. **Darwin** now has the highest infant death rate (10.3 infant deaths per 1,000 live births), followed by **Hobart** (7.5), a reversal of the ranking over the period from 1985 to 1989. All capital cities except these show significant improvements in the rate.

Table 5.12: Infant deaths, capital cities
Infant death rates per 1,000 live births

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
1992-95	6.1	5.2	6.7	5.2	5.3	7.5	10.3	5.9	5.8
1985-89[2]	9.3	8.2	8.9	7.5	8.4	9.5	9.4	8.3	8.7

[1]Includes Queanbeyan (C)
[2]For 1985-89 the rate was calculated per 1,000 children aged under 12 months plus infant deaths: this approximates live births
Source: See *Data sources*, Appendix 1.3

Over the years from 1992 to 1995, there were 1,270 infant deaths of children resident in Queensland. This represented a decline from an average of 365 to 318 infant deaths per year between the two periods analysed.

Neonatal deaths (deaths of infants aged under 28 days) accounted for 63.6 per cent of infant deaths. Neonatal deaths result mostly from the circumstances of the birth, or from pre-natal conditions resulting in disabilities at birth. The remaining (post-neonatal) deaths are related to infections, respiratory disorders, accidents and deaths attributed to Sudden Infant Death Syndrome and other causes.

Brisbane[6]

There were 550 infant deaths in **Brisbane** over the four year period from 1992 to 1995, 6.7 infant deaths per 1,000 live births.

Data for a number of areas have not been mapped for this variable, as there were considered to be too few cases from which to calculate reliable rates.

By far the highest infant death rates were recorded in the combined areas of Darra Sumner/Wacol, Lota/Manly/Manly West and West End/South Brisbane/Highgate Hill, with 18.2, 15.1 and 13.7 infant deaths per 1,000 live births respectively. Relatively high rates also occurred in the inner areas of Greenslopes (13.4) Tingalpa (11.7) and Coorparoo (11.3).

No areas were mapped in the lowest range as all had infant death rates of 2.0 or above (**Map 5.7**). Rates of below 4.5 were recorded in the areas of Birkdale/Ormiston (with 3.3 infant deaths per 1,000 live births), Capalaba/Redland Bay (3.5), Bracken Ridge/Sandgate (4.1), and Pine Rivers Balance (4.1).

The areas of Ipswich and Caboolture had the largest numbers of infant deaths over the four year period from 1992 to 1995, with 50 and 46 deaths respectively.

The correlation analysis was not undertaken as there were too many areas with small numbers of cases.

Gold Coast-Tweed Heads

In **Gold Coast-Tweed Heads** there were 100 infant deaths over the four year period from 1992 to 1995, 6.4 infant deaths per 1,000 live births. The highest infant death rates occurred in Arundel/Ashmore and Paradise Point/Biggera Waters, with rates of 10.3 and 10.2 respectively. At the other end of the scale 1.4 infant deaths per 1,000 live births were recorded in Palm Beach/Currumbin.

Townsville-Thuringowa

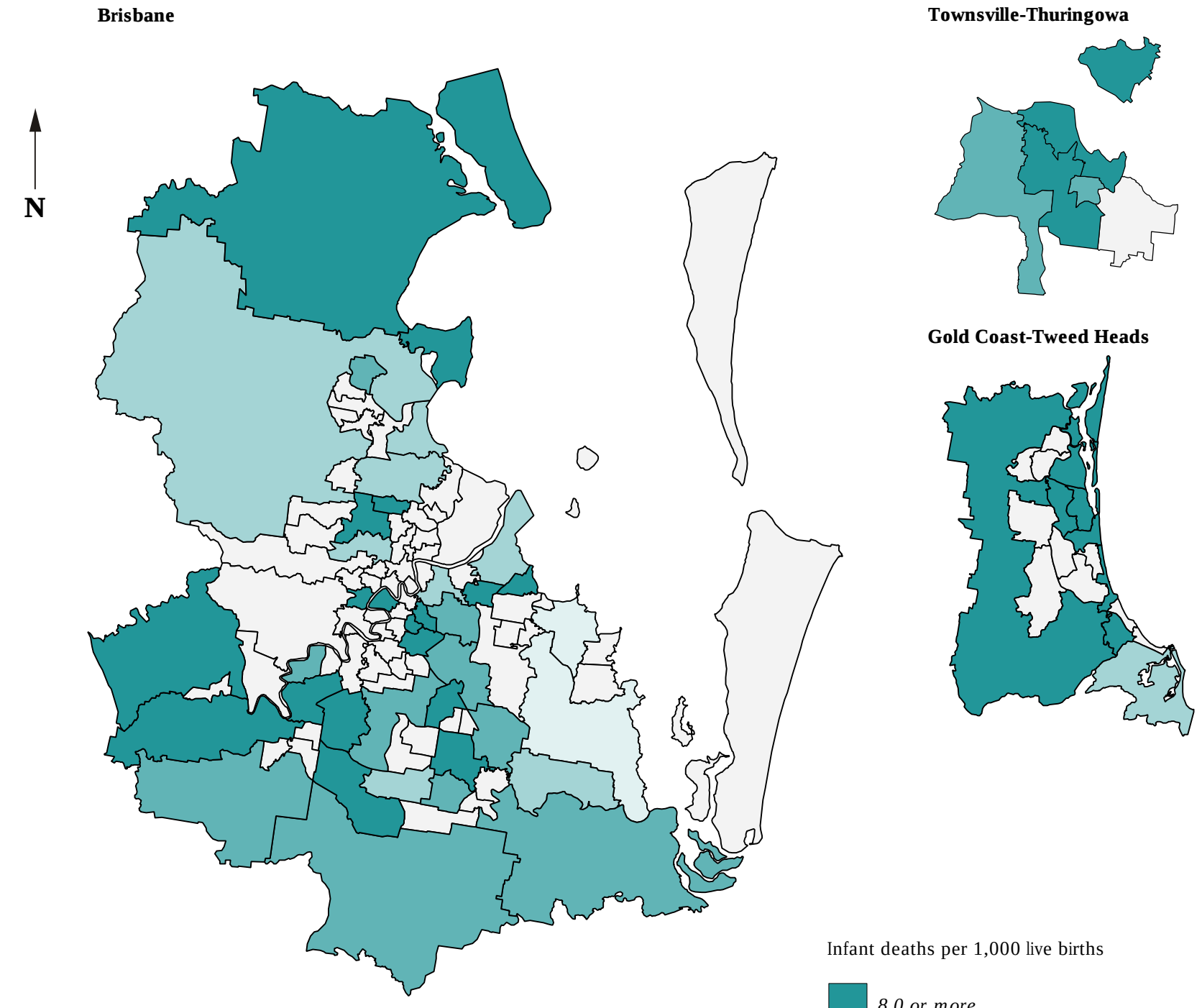
Townsville-Thuringowa recorded the highest infant death rate among the major urban centres, with 8.0 infant deaths per 1,000 live births (a total of 63 deaths).

The areas from Murray to Mt Louisa and the combined area of Townsville Coastal/Magnetic Island had infant deaths rates of 9.3 and 8.8 respectively. However, the area of Townsville South East was not mapped for this variable as only one infant death was recorded over this time period.

[6]As there were relatively few areas with sufficient cases to analyse for this variable in the non-metropolitan areas of Queensland, the data have not been mapped. A summary of the main features is on page 171.

Map 5.7: Infant deaths, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1992 to 1995

infant deaths per 1,000 live births in each area*



*Most SLAs have been grouped to approximate postcode areas

Source: Calculated on data from ABS 1996 Census

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Deaths of males aged 15 to 64 years from all causes, 1992 to 1995

Capital city comparison (Australian as the Standard)

Over the four years from 1992 to 1995, Standardised Death Ratios (SDRs) for males aged from 15 to 64 years ranged from 81** in **Canberra** to 143** in **Darwin**. The other capital cities (except **Hobart** with an SDR of 103) had fewer deaths than expected.

There was a higher differential (from the Australian rates) in the SDR recorded for **Darwin** in the later period shown in **Table 5.13**. The higher SDR in this later period suggests a worsening (relative to the Australian rates) in the male death ratios from all causes between the periods analysed. The differentials in the ratios for **Adelaide** between these periods also suggest a deterioration, while those in **Brisbane** and **Canberra** indicate a relative improvement.

Table 5.13: Deaths of males aged 15 to 64 years from all causes, capital cities
Standardised death ratios

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
1992-95	99	92**	94**	93**	87**	103	143**	81**	94**
1985-89	100	92**	97*	89**	87**	101	124**	82**	94**

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Malignant neoplasms (cancer), diseases of the circulatory system and the combined external causes of accidents, poisonings and violence were the main causes of premature death (deaths between the ages of 15 to 64 years) for males over this period. There were 25,919 deaths of males in **Brisbane** and the other major urban centres over the years from 1992 to 1995, of which 6,872 (26.5 per cent) were males aged from 15 to 64 years. Males most likely to die prematurely include Aboriginal and Torres Strait Islander people; those who are homeless, or who live in sheltered accommodation or low-cost boarding houses; those earning low incomes; and those who are unemployed.

Brisbane (Queensland as the Standard)

There were 6.6 per cent fewer deaths of 15 to 64 year old males in **Brisbane** over the years from 1992 to 1995, than over the years from 1985 to 1989 described in the first edition of the atlas, decreasing from 1,385 to 1,293 premature male deaths per year. Residents of **Brisbane** had six per cent fewer deaths than expected from the State rates, an SDR of 94**.

The majority of areas were mapped in the middle range, of 15 per cent above or below the level expected from the State rates. There were 18 areas mapped in the highest range and 21 in the lowest (**Map 5.8**). The highest ratios were located in the city and nearby inner suburbs, including the areas of Dutton Park/Woolloongabba, New Farm and City/Spring Hill. The highest ratios were recorded in the combined area of Dutton Park/Woolloongabba (with almost two and a half times more deaths of 15 to 64 year old males than expected from the State rates, an SDR of 246**), New Farm (239**) and the combined areas of City/Spring Hill (225**).

In total, 16 areas were mapped in the middle range. The highest ratios in this range were recorded in Coorparoo and Ridge/Sandgate, each with an SDR of 112. The majority of areas in the lowest range mapped recorded ratios of statistical significance. The lowest of these included Seventeen Mile Rocks (with an SDR of 40*), the combined area of Algester/Parkinson-Drewvale (48**), Jindalee/River Hills (51**), Calamvale/Stretton (52*) and Capalaba/Redland Bay (53**), located to the south of the Brisbane River; and Strathpine (52**) and Albany Creek (54**), situated in the north.

Residents of Ipswich had the largest number of male deaths from all causes in the 15 to 64 year age group (299 deaths). A large number of deaths was also recorded in Caboolture [Part A] (293) and Redcliffe (214).

There was a correlation of substantial significance with the variable for dwellings with no motor vehicle (0.73) and of meaningful significance with low income families (0.53). These results, together with the inverse correlation with the IRSD (-0.48), suggest the existence of an association at the small area level between high rates of premature deaths of males and socioeconomic disadvantage

Gold Coast-Tweed Heads

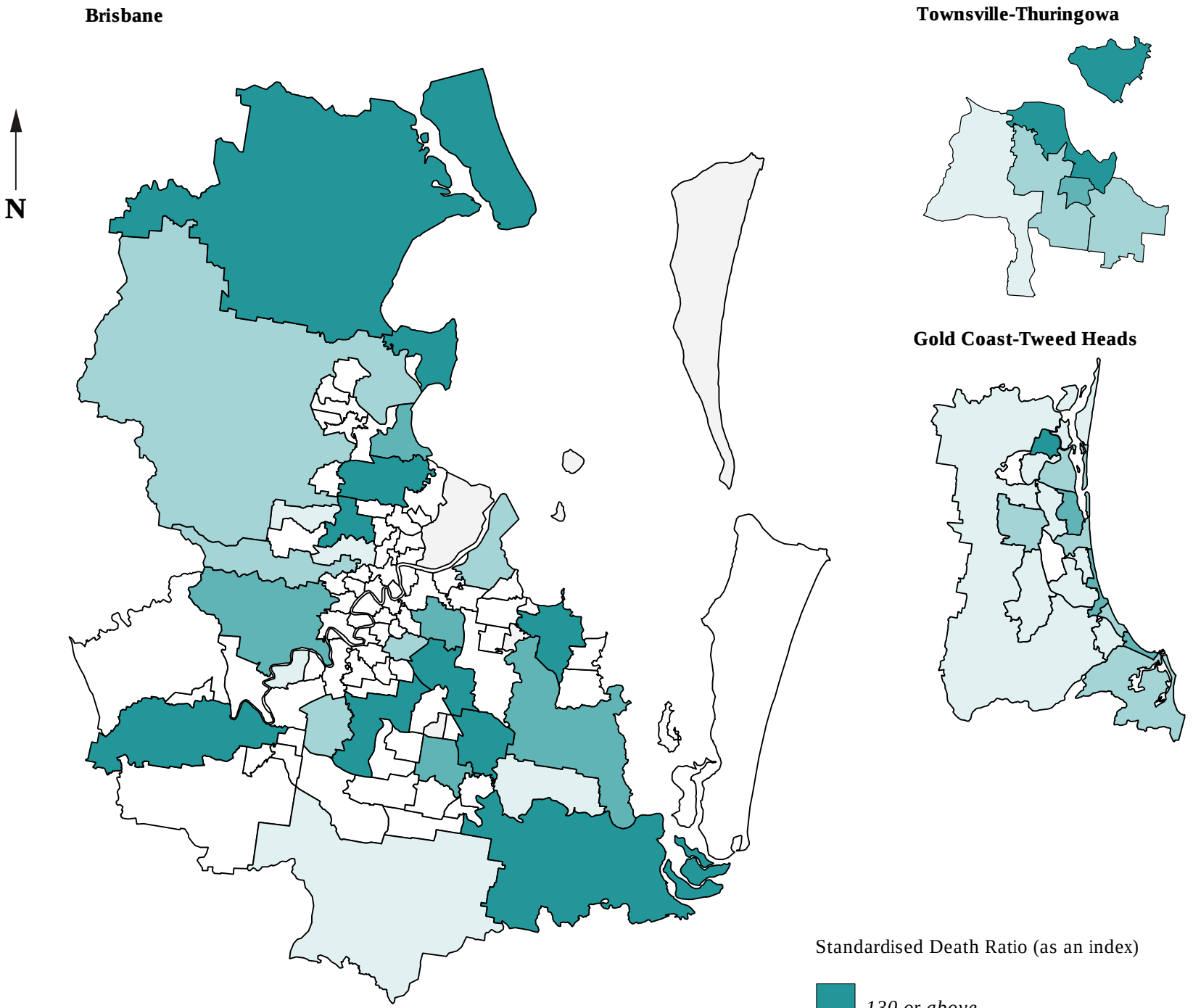
There were five per cent fewer deaths of 15 to 64 year old males than expected from the State rates in **Gold Coast-Tweed Heads**, a total of 1,238 male deaths from all causes in this age group. SDRs at the small area level were in the range of 41 per cent above or below the level expected, with Hope Island recording the highest SDR of 141, and Oxenford and Helensvale recording the lowest, both with an SDR of 59.

Townsville-Thuringowa

The SDR recorded for males in the major urban centre of **Townsville-Thuringowa** was considerably higher than that in **Brisbane**, an SDR of 104. In terms of absolute numbers, there were 463 male deaths from all causes in the 15 to 64 year age group. By far the highest ratio was recorded in the combined areas of Townsville Coastal and Magnetic Island, an SDR of 144**. Both Murray/Mt Louisa and Thuringowa [Part A] recorded fewer deaths than expected, with ratios of 87 and 74** respectively.

Map 5.8: Deaths of males aged 15 to 64 years from all causes, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1992 to 1995

Standardised Death Ratio: number of deaths in each area* compared with the number expected#



*Most SLAs have been grouped to approximate postcode areas

#Expected numbers were derived by indirect age standardisation, based on Queensland totals

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Deaths of males aged 15 to 64 years from all causes, 1992 to 1995

State/Territory comparison (Australia as the Standard)

Standardised Death Ratios (SDRs) for males aged from 15 to 64 years over the years 1992 to 1995 were higher in the *Rest of State/Territory* areas than in the capital cities. At the *Whole of State/Territory* level, the Northern Territory (199**), Tasmania (110**) and New South Wales (104**) had more deaths than expected from the Australian rates. The Australian Capital Territory had the lowest ratio (an SDR of 78**).

Most States had similar differentials (from the Australian rates) in the SDR recorded for their non-metropolitan areas in the later period shown in **Table 5.14**. The major exceptions were Western Australia, with a higher SDR (suggesting an increase in death rates relative to the Australian experience), and the Northern Territory, with a lower SDR. While the SDR for males in the non-metropolitan areas of the Northern Territory was 7.1 per cent lower in this later period (suggesting a decline in death rates relative to the Australian experience), it continues to be substantially elevated, and more than twice the next highest ratio.

Table 5.14: Deaths of males aged 15 to 64 years from all causes, State/Territory
Standardised death ratios

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1992 to 1995									
Capital city	99	92**	94**	93**	87**	103	143**	81**[1]	94**
Other major urban centres[2]	104*	114**	96	..	..	..	..	..	102
Rest of State/Territory	113**	103*	105**	108**	112**	114**	260**	–[3]	110**
Whole of State/Territory	104**	95**	100	98	94**	110**	199**	78**	100
1985 to 1989									
Rest of State/Territory	113**	105**	110**	106**	103	109**	280**	–[3]	111**

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Over the four years from 1992 to 1995, the major cause of premature death for male residents of the non-metropolitan areas of Queensland were malignant neoplasms (cancer), circulatory system diseases and the combined external causes of accidents, poisonings and violence. There were 19,897 deaths of males resident in these non-metropolitan areas, 57.2 per cent of all deaths. Of these deaths, 5,771 deaths were of males aged from 15 to 64 years, 29.0 per cent of all male deaths.

Rest of State (Queensland as the Standard)

There were seven per cent more deaths of males aged from 15 to 64 years and resident in country areas of Queensland than expected from the State rates.

SLAs in the most northerly areas of Queensland were mapped in the highest range, while other SLAs in this range were also located in more remote areas (**Map 5.9**). The majority of SLAs in Queensland had SDRs ranging from 70 to 130, and these areas were mainly situated throughout the east and south-east of the State. No area had a ratio in the lowest range mapped. Several of the western and south-western SLAs were not mapped, as there were considered to be too few cases from which to calculate reliable rates.

As many of the SDRs are very high, the ranges mapped have been changed to enhance the pattern of differentiation. The highest and lowest ranges have been set at 60 per cent, rather than 30 per cent as in the map of **Brisbane** for this variable.

Highly elevated ratios of statistical significance were recorded in Carpentaria, Torres and Charters Towers, with SDRs of 263**, 248**, and 247** respectively. Both Carpentaria and Torres have high proportions of Indigenous people, and the higher mortality rates in this population group are likely to play a significant part in these elevated SDRs. In total, there were eight SLAs in the non-metropolitan areas of Queensland with more than twice the number of male deaths expected from the State rates.

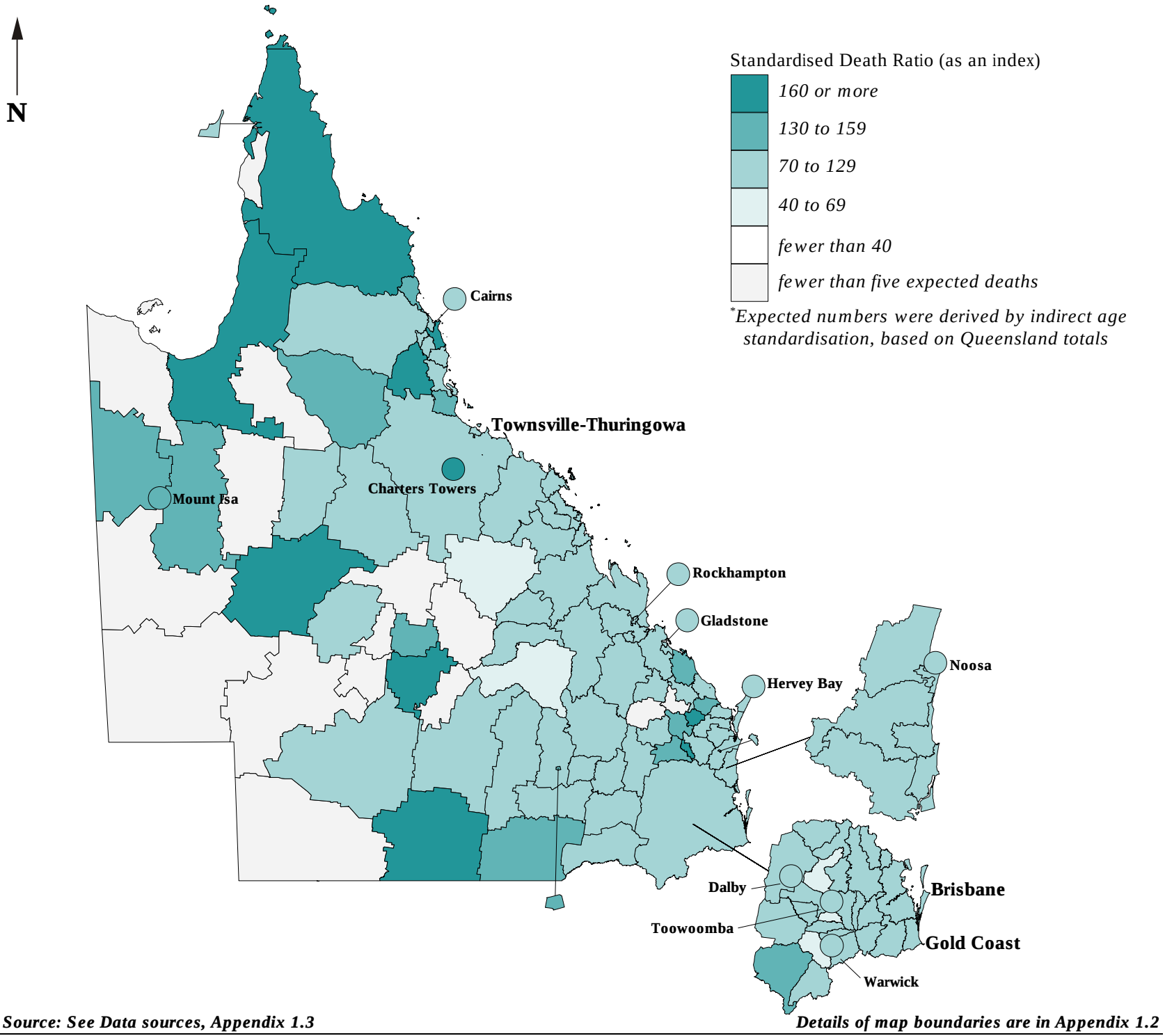
There were also a number of areas with low ratios. Bauhinia (with an SDR of 41), Cambooya (56) and Belyando (60**) were among the lowest. The only other ratio of statistical significance below the level expected from the State rates was recorded in Maroochy [Part A] (an SDR of 77**).

The largest absolute numbers of deaths of males aged from 15 to 64 in the non-metropolitan areas of Queensland were in Cairns (380 deaths), Toowoomba (326), Bundaberg/Burnett (259) and Maroochy [Part A] (245).

The correlation analysis was not undertaken as there were too many SLAs with small numbers of cases.

Map 5.9: Deaths of males aged 15 to 64 years from all causes, Queensland, 1992 to 1995

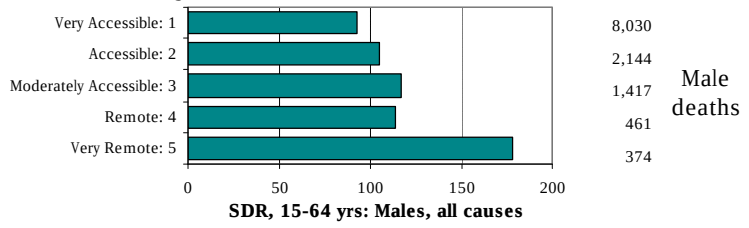
Standardised Death Ratio: number of deaths in each Statistical Local Area compared with the number expected*



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Accessibility/Remoteness Index of Australia



Standardised Death Ratios (SDRs) for premature deaths of males show the same pattern across the ARIA categories as infant death rates. The lowest SDRs were recorded for the Very Accessible (93) and Accessible categories (105), with higher ratios in the Remote (an SDR of 114) and Moderately Accessible (117) categories, respectively. The highest SDR was in the Very Remote areas, which is likely to reflect the very high premature death rates experienced by Indigenous males (an SDR of 178, over one and a half times the number of deaths of males at these ages expected from the State rates).

Source: Calculated on ARIA classification, DHAC

Deaths of females aged 15 to 64 years from all causes, 1992 to 1995

Capital city comparison (Australia as the Standard)

Over the four years from 1992 to 1995, Standardised Death Ratios (SDRs) for females aged from 15 to 64 years ranged from 87** in **Canberra** to 115** in **Hobart** and 126** in **Darwin**. The other capital cities had ratios of below 100, indicating that there were fewer deaths than were expected from the Australian rates.

There was a higher differential (from the Australian rates) in the SDR recorded for **Darwin** in the later period (from 1992 to 1995) shown in **Table 5.15**. The higher SDR suggests a worsening (relative to the Australian rates) in the female death rates from all causes between the periods analysed. The remaining States and Territories experienced small increases (**Adelaide**, **Perth** and **Hobart**) or decreases (**Sydney**, **Melbourne**, **Brisbane** and **Canberra**) in their ratios.

Table 5.15: Deaths of females aged 15 to 64 years from all causes, capital cities
Standardised death ratios

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All Capitals
1992-95	98*	92**	96	98	90**	115**	126**	87**	95**
1985-89	100	95**	98	93**	86**	112**	112	88**	96**

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Cancer was the main cause of premature death (deaths between the ages of 15 to 64 years) for females, followed by diseases of the circulatory system and the combined causes of accidents, poisonings and violence. Overall, there were 23,130 deaths of female residents in **Brisbane** and the other major urban centres, of whom 3,661 were of females aged from 15 to 64 years. The data that have been mapped for this variable therefore represents 15.8 per cent of female deaths.

Females most likely to die prematurely include Aboriginal and Torres Strait Islander women; single mothers; those earning low incomes; and those who were unemployed.

Brisbane (Queensland as the Standard)

There were 3.4 per cent fewer deaths of 15 to 64 year old females in **Brisbane** over the years from 1992 to 1995 than from 1985 to 1989, decreasing from an average of 712 deaths per year to 688 deaths per year. This was reasonably consistent with the percentage decline recorded for male deaths over the same time periods. There were five per cent fewer deaths of 15 to 64 year old females in **Brisbane** than were expected from the State rates (an SDR of 95*).

The majority of areas in the highest range mapped were located in the city and nearby inner region (**Map 5.10**), while those in the lowest range were situated just north of the Brisbane River, and included many areas of higher socioeconomic status. A large proportion of the areas in **Brisbane** recorded SDRs in the range from 85 to 115.

The most highly elevated ratio was recorded in Northgate, with more than two and a half times the number of female deaths than the level expected in this age group (an SDR of 267**). This high SDR is consistent with the large number of disadvantaged people in this area, including single parent families and those who are unemployed. The combined area of Darra Sumner/Wacol (with an SDR of 266**), New Farm (226**), and East Brisbane/Kangaroo Point (222**) also recorded more than twice the number of female deaths than expected from the State rates. In total, 38 areas had more deaths of females than expected from the State rates.

Of the 84 areas mapped for this variable, 46 had fewer deaths than expected from the State rates. The area from Ferny Hills to Everton Hills recorded the lowest ratio (an SDR of 37**), with the combined area of Moorooka/Yeerongpilly and Moreton Balance recording low SDRs of 44** and 44* respectively.

Females accounted for 34.7 per cent of premature deaths of residents of **Brisbane,** a total of 2,752 female and 5,171 male deaths. Females in Caboolture [Part A], with 158 deaths and Ipswich, with 154 deaths, recorded the highest number of premature deaths.

There were correlations of meaningful significance at the small area level between high rates of premature deaths of females and the variables for dwellings with no motor vehicle (0.51), unemployed people (0.51) and low income families (0.50). These results, together with the inverse correlation of meaningful significance with the IRSD (-0.51), suggest the existence of an association at the small area level between high rates of premature deaths of females and socioeconomic disadvantage.

Gold Coast-Tweed Heads

Female residents of **Gold Coast-Tweed Heads** had 686 premature deaths, six per cent fewer than were expected from the State rates (an SDR of 94).

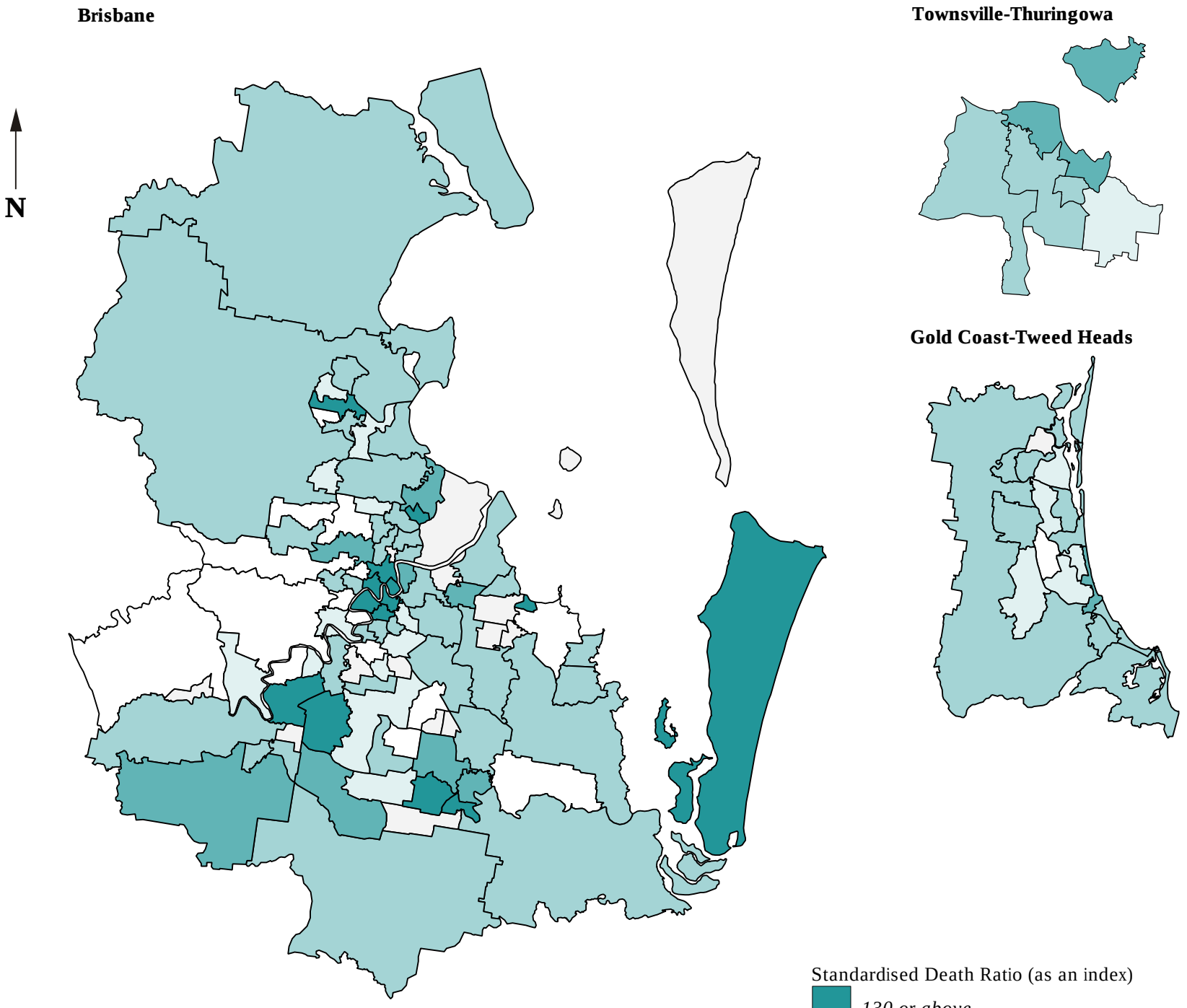
Broadbeach/Burleigh Heads and Coolangatta/Tugun recorded the highest ratios, with SDRs of 123 and 113 respectively. By contrast, Carrara-Merrimac recorded fewer premature female deaths than expected, with an SDR of 58*.

Townsville-Thuringowa

There were 223 deaths of females in this age group in **Townsville-Thuringowa**, four per cent more than expected from the State rates (an SDR of 104). Females accounted for just one third (32.5 per cent) of premature deaths. Elevated ratios were recorded in the combined areas of Townsville Coastal/Magnetic Island (an SDR of 120) and Murray/Mt Louisa (105), while Townsville South East had 21 per cent fewer female deaths than expected (an SDR of 79).

Map 5.10: Deaths of females aged 15 to 64 years from all causes, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1992 to 1995

Standardised Death Ratio: number of people in each area* compared with the number expected#



*Most SLAs have been grouped to approximate postcode areas

#Expected numbers were derived by indirect age standardisation, based on Queensland totals

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Deaths of females aged 15 to 64 years from all causes, 1992 to 1995

State/Territory comparison (Australia as the Standard)

Standardised Death Ratios (SDRs) for females aged from 15 to 64 years were higher in the *Rest of State/Territory* areas than in the capital cities, with the most highly elevated ratio being in the Northern Territory (an SDR of 289**). At the *Whole of State/Territory* level, only Tasmania (116**) and the Northern Territory (210**) had substantially more female deaths than expected from the Australian rates.

Most States had similar differentials (from the Australian rates) in the SDR recorded for their non-metropolitan areas in the later period shown in **Table 5.16**. The major exceptions were Tasmania, South Australia and Western Australia, with higher SDRs (suggesting an increase in death rates relative to the Australian experience); and the Northern Territory and New South Wales, with lower SDRs (suggesting a decline in death rates relative to the Australian experience). The SDR for females aged from 15 to 64 years in the Northern Territory, however, remains substantially elevated, at more than twice the next highest level.

Table 5.16: Deaths of females aged 15 to 64 years from all causes, State/Territory
Standardised death ratios

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1992 to 1995									
Capital city	98*	92**	96	98	90**	115**	126**	87**[1]	95**
Other major urban centres[2]	109**	109	96	..	..	..	..	..	105*
Rest of State/Territory	108**	101	106**	109*	112**	117**	289**	–[3]	109**
Whole of State/Territory	102	94**	101	101	96*	116**	210**	86**	100
1985 to 1989									
Rest of State/Territory	113**	101	106**	96	105	106	328**	–[3]	108**

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

The major cause of death for female residents living in rural Queensland was consistent with that found among males, malignant neoplasms, followed by circulatory system diseases and the combined causes of accidents, poisonings and violence. The premature deaths mapped for this variable accounted for 19.3 per cent of all female deaths. This figure was 9.5 per cent lower than that recorded for males (29.0 per cent), highlighting the fact that female life expectancy is higher.

Rest of State (Queensland as the Standard)

There were 2,872 deaths of females aged from15 to 64 years living in the non-metropolitan areas of Queensland, seven per cent more deaths than expected from the State rates (an SDR of 107**). Female deaths accounted for one third (33.2 per cent) of all deaths in these non-metropolitan areas.

As many of the ratios are very high, the ranges mapped have been changed to enhance the pattern of differentiation in the map. The highest and lowest ranges have been set at 60 per cent, rather than 30 per cent as in the map of **Brisbane** for this variable (**Map 5.11**). Data for a number of SLAs have not been mapped for this variable, as there were considered to be too few cases from which to calculate reliable rates.

The most northerly areas of Queensland were mapped in the highest range. There were more than four times the number of deaths of females in Torres (an SDR of 415**) and Carpentaria (405**) that were expected from the State rates. Both of these SLAs have high proportions of Indigenous people, and the higher mortality rates in this population group are likely to play a significant part in these elevated SDRs. Cook (335**), Murgon (291**) and Mount Morgan (259**) also had highly elevated ratios for premature deaths of females.

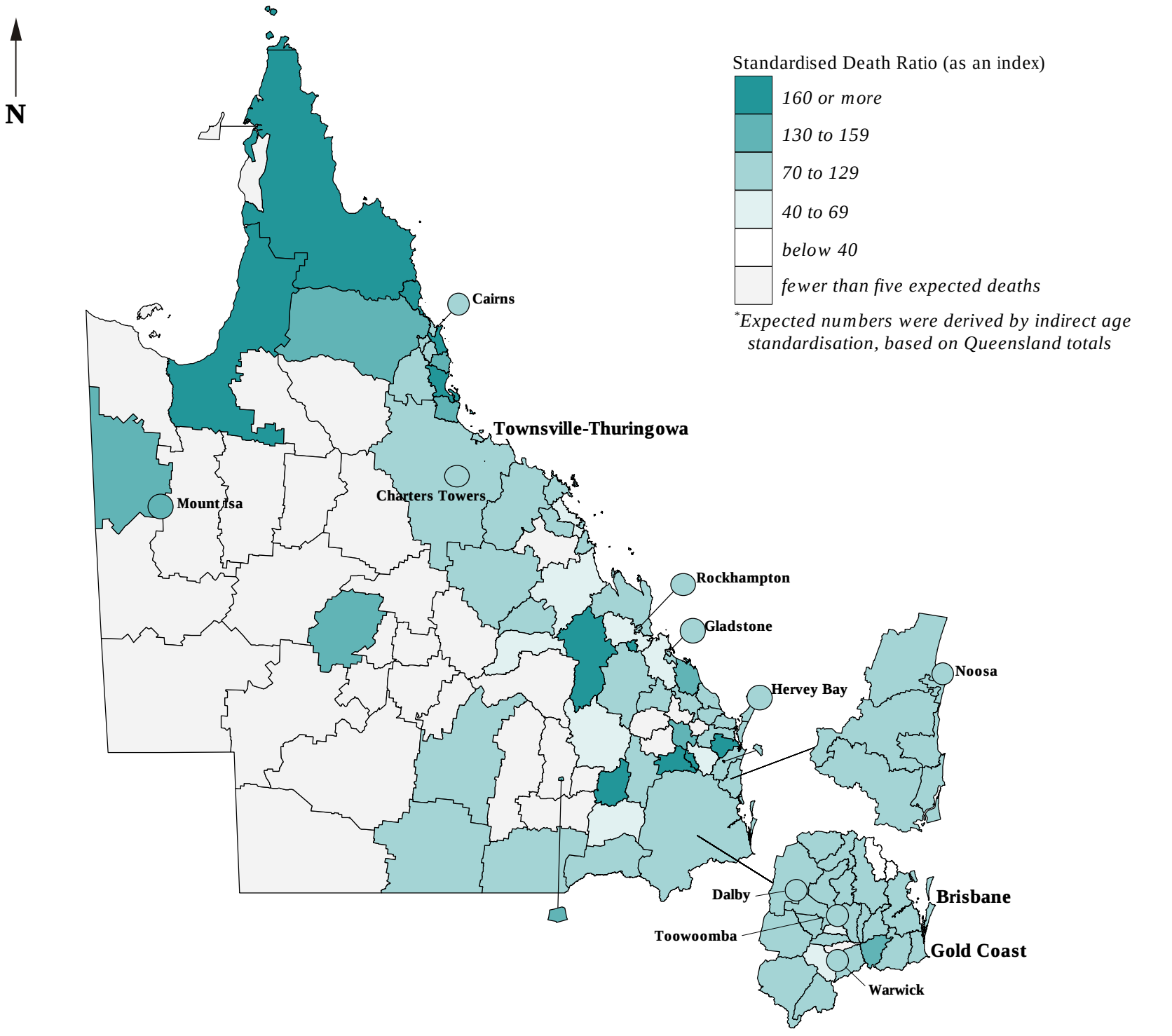
The three SLAs with ratios in the lowest mapped range for all causes of premature female deaths were Fitzroy [Part A] (with 86 per cent fewer deaths of 15 to 64 year old females than expected from the State rates, SDR of 14*), Kilcoy (29), and Caboolture [Part B] (38).

Cairns (with 191 deaths), Toowoomba (165), Bundaberg/Burnett (161) and Maroochy [Part A] (149) had the largest number of deaths in this four year period.

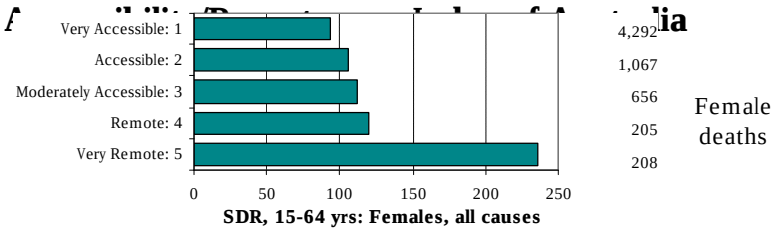
The correlation analysis was not undertaken as there were too many areas with small numbers of cases.

Map 5.11: Deaths of females aged 15 to 64 years from all causes, Queensland, 1992 to 1995

Standardised Death Ratio: number of people in each Statistical Local Area compared with the number expected*



Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***



Standardised Death Ratios (SDRs) for females show a similar pattern to those for males, but with a higher ratio in the Very Remote areas. They range from a low of 94 in the Very Accessible category to 120 in the Remote category and then to a highly elevated 236 in the Very Remote category. As noted for males, the elevated SDRs in the Very Remote category is likely to reflect the very high premature death rates experienced by Indigenous females.

Source: Calculated on ARIA classification, DHAC

Deaths of people aged 15 to 64 years from cancer, 1992 to 1995

Capital city comparison (Australia as the Standard)

Over the four years from 1992 to 1995, **Darwin**, with a Standardised Death Ratio (SDR) of 117*, and **Hobart**, with an SDR of 112*, were the only capital cities with elevated ratios for deaths from cancer of people aged from 15 to 64 years. **Canberra** had the lowest ratio, with 9 per cent fewer deaths than expected from the Australian rates: ratios in the other capitals were close to the *All capitals* average.

Overall, the variations from the Australian rates in SDRs from cancer between the two time periods analysed (**Table 5.17**) were marginal, with the exception of **Darwin**, where there was a substantial differential (from the Australian rates) between the two periods. The higher SDR in the later period suggests a worsening (relative to the Australian rates) in the death rates for residents of **Darwin** from this cause.

Table 5.17: Deaths of people aged 15 to 64 years from cancer, capital cities
Standardised death ratios

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
1992-95	99	100	98	97	95**	112*	117*	91*	98*
1985-89	100	102	100	96*	99	109*	96	92*	100

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Deaths from cancer (malignant neoplasms) were the second most common cause of death of residents of all ages of **Brisbane** and the other major urban centres, accounting for 26.9 per cent of all deaths (13,209 deaths) over the four years from 1992 to 1995. Moreover, it was the most common cause of death in the 15 to 64 year age group, representing 37.9 per cent of deaths.

Different cancers have different causes and are influenced by a range of risk factors, the most widely accepted being tobacco smoking (it is estimated that as many as one in three cancer deaths are caused by smoking and could therefore be prevented (AIH 1998)) and dietary influences. Both the incidence and mortality of cancer are higher among males than among females, a fact largely attributed to their greater use of tobacco .

There is a strong association between socioeconomic status and certain types of cancer. Mathers (1994) has examined the extent of disparities in mortality rates, which are related to socioeconomic status of area of residence. Differentials in mortality ratios from cancer were clearly evident for males aged from 25 to 64 years in the most socioeconomically disadvantaged areas: 28 per cent more male deaths than in the most disadvantaged areas, with the highest elevation being 60 per cent for lung cancer. Deaths of females in the most disadvantaged areas were less highly elevated (by 10 per cent over deaths in the most advantaged areas), although lung cancer rates were elevated by 58 per cent. In more recent work, Mathers (in press) has reported that the socioeconomic differentials in mortality rates related to cancer have persisted in 1995-97 (**Table 5.2**). In NSW in 1990-94 an inverse relationship was specifically found between high socioeconomic status and cervical cancer (-0.22) and lung cancer (-0.25) (NSW Health Department 1997). In Victoria in 1996 increased rates of (age standardised) years of life lost were found for mouth, stomach, lung and larynx cancer for males and lung cancer for females in the lowest compared to the highest socioeconomic quintiles of the population (Department of Human Services Victoria, in press).

Brisbane (Queensland as the Standard)

There were 6.2 per cent more deaths of people aged from 15 to 64 years in **Brisbane** over the years from 1992 to 1995 than from 1985 to 1989, an increase from an average of 705 deaths per year to 749 per year. Of the total of 2,996 cancer deaths in this age group, 1,689 were males and 1,307 were females. Residents of **Brisbane** had 1 per cent fewer deaths than expected from the State rates, an SDR of 99.

The majority of areas had ratios mapped in the middle range (within 15 per cent of the level expected), with only seven areas recording a ratio in the lowest range (**Map 5.12**). As for all causes of death for both males and females, the inner city suburbs had the highest ratios. The most highly elevated ratios were recorded in Northgate (an SDR of 261**), Underwood (241**), the combined areas of Gumdale/Ransome/Wakerley (197*) and East Brisbane/Kangaroo Point (178**).

The lowest ratios were recorded in the areas of Calamvale/Stretton, Pine Rivers, Ferny Hills/Everton Hills, Runcorn/ Eight Mile Plains, Moorooka/Yeerongpilly, Anstead/ Bellbowrie/Moggill and Red Hill/Kelvin Grove.

The largest numbers of cancer deaths of people aged from 15 to 64 years were recorded in Caboolture [Part A] (161 deaths) and Ipswich (136).

The correlation analysis was not undertaken, as there were too many areas with small numbers of cases.

Gold Coast-Tweed Heads

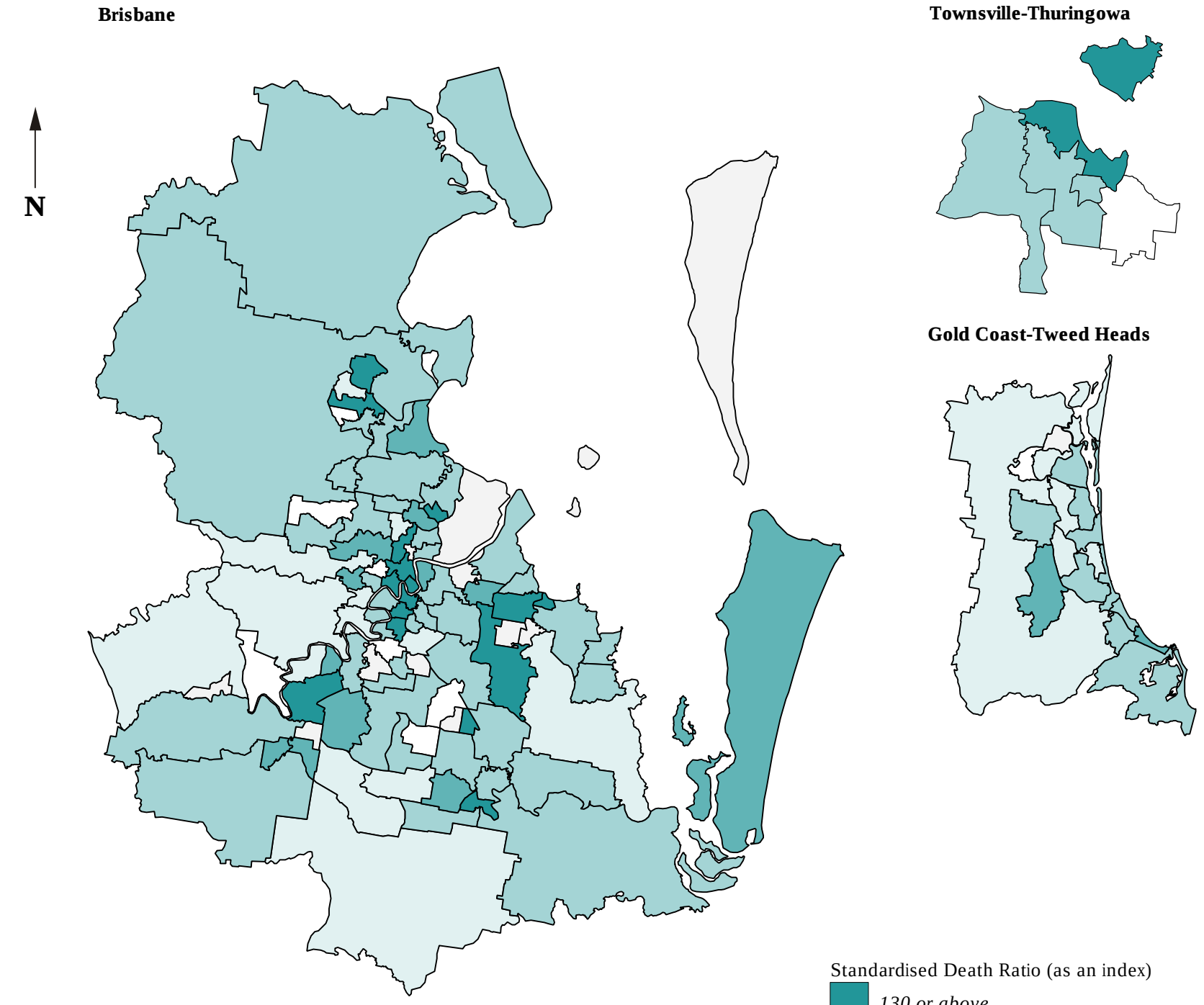
There were 753 premature deaths from cancer in **Gold Coast-Tweed Heads**, 2 per cent fewer than expected from the State rates (an SDR of 98). The lowest ratio was recorded in Oxenford, with 40 per cent fewer deaths than expected (six deaths). The other areas had ratios ranging from 72 in Arundel/Ashmore to 120 in Worongary-Tallai/Mudgeeraba.

Townsville-Thuringowa

There were 246 premature cancer deaths in **Townsville-Thuringowa,** nine per cent more than expected from the State rates (an SDR of 109). The highest ratio was recorded in the combined area of Townsville Coastal/Magnetic Island (133*), while Townsville South East had 33 per cent fewer deaths from cancer than expected.

Map 5.12: Deaths of people aged 15 to 64 years from cancer, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1992 to 1995

Standardised Death Ratio: number of deaths in each area* compared with the number expected#



Most SLAs have been grouped to approximate postcode areas

#*Expected numbers were derived by indirect age-sex standardisation, based on Queensland totals*

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Deaths of people aged 15 to 64 years from cancer, 1992 to 1995

State/Territory comparison (Australia as the Standard)

The highest Standardised Death Ratio (SDR) for deaths from cancer of people aged from 15 to 64 years in the *Rest of State/Territory* areas was recorded in the Northern Territory (an SDR of 148**). The other States all had SDRs within 10 per cent of the level expected from the Australian rates. At the *Whole of State/Territory* level, only the Northern Territory (137**) and Tasmania (110**) had notably more deaths from cancer than expected from the Australian rates.

The non-metropolitan areas of New South Wales, Victoria and Queensland had similar differentials (from the Australian rates) in the SDR recorded in the later period shown in **Table 5.18**. The Northern Territory had the highest SDR (suggesting a worsening in death rates relative to the Australian experience); South Australia, Western Australia and Tasmania also had noticeably higher SDRs in the later period, although with much smaller increases than that for the Northern Territory.

Table 5.18: Deaths of people aged 15 to 64 years from cancer, State/Territory
Standardised death ratios

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1992 to 1995									
Capital city	99	100	98	97	95**	112*	117*	91*[1]	98*
Other major urban centres[2]	106*	123**	99	..	..	..	..	..	105**
Rest of State/Territory	103	105**	100	96	93*	109*	148**	–[3]	102*
Whole of State/Territory	101	102	99	97	94**	110**	137**	91*	100
1985 to 1989									
Rest of State/Territory	103	104*	98	86**	87**	103	123**	–[3]	99

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

As for **Brisbane** and the other major urban centres, deaths from cancer (malignant neoplasms) were also the second most common cause of death of people of all ages in the non-metropolitan areas of Queensland, accounting for 26.5 per cent of all deaths (9,221 deaths) over the four year period from 1992 to 1995. Cancer was, however, the most common cause of premature death, accounting for 34.5 per cent of all deaths of people aged from 15 to 64 years. Although the largest absolute numbers of cancer deaths were recorded for people aged 65 years and over, they only accounted for 24.5 per cent of deaths at those ages.

Rest of State (Queensland as the Standard)

Over the years from 1992 to 1995, there were 2,986 premature deaths from cancer recorded in the non-metropolitan areas of Queensland, 1 per cent more than expected from the State rates (an SDR of 101). The number of male deaths (1,726) exceeded the number of female deaths (1,260).

Data for a number of SLAs have not been mapped for this variable, as there were considered to be too few cases from which to calculate reliable rates. SLAs with the highest ratios, of 130 and above, were distributed throughout Queensland in no distinguishable pattern (**Map 5.13**). A large number of SLAs had ratios for premature cancer deaths within 15 per cent of the level expected from the State rates. The lowest SDRs were located primarily throughout the south-east of Queensland.

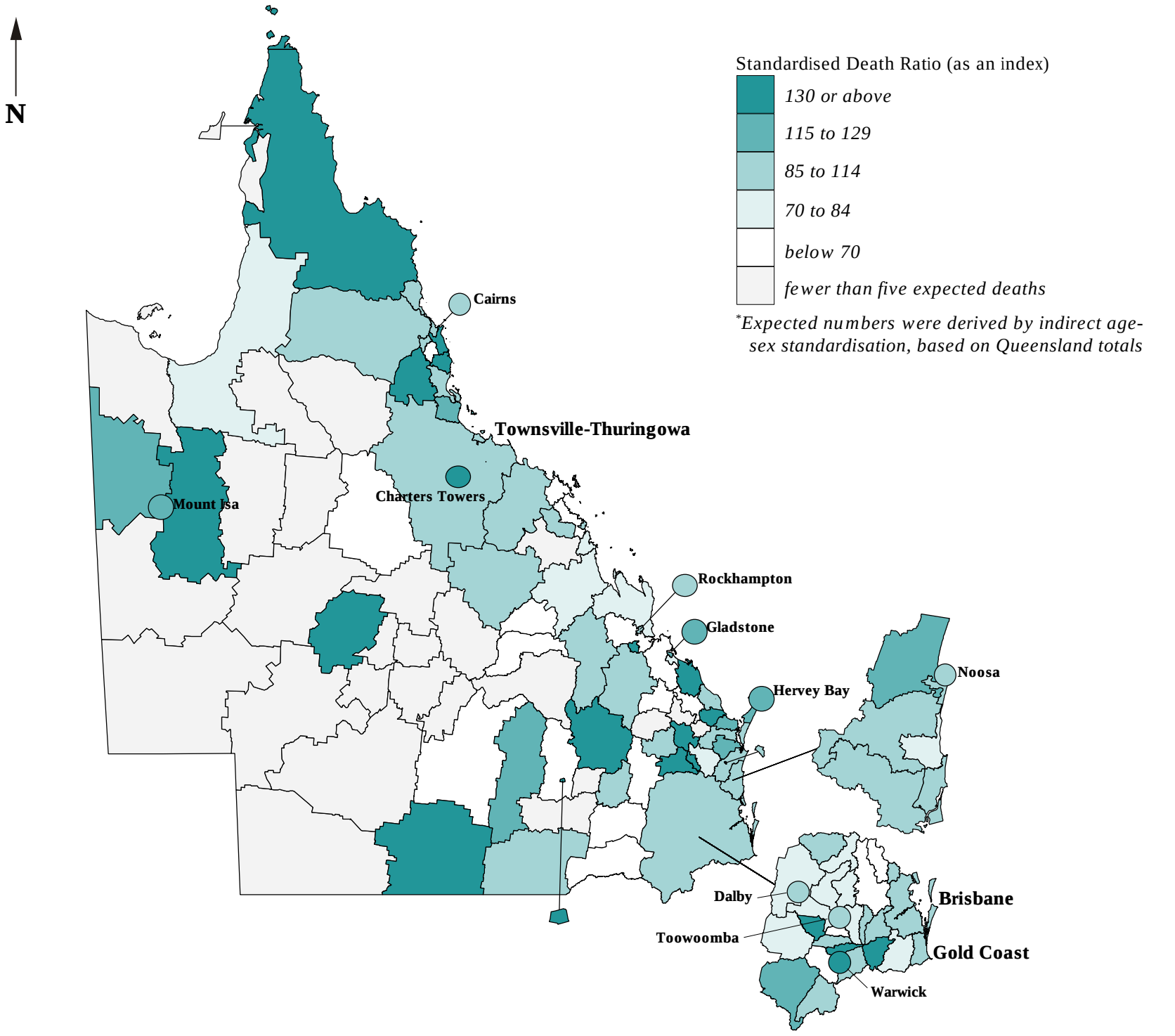
The most highly elevated ratios for premature deaths from cancer over the years from 1992 to 1995, were recorded in Cloncurry (an SDR of 235**; and 13 deaths), Charters Towers (201**; and 37 deaths) and Mount Morgan (186**; and 15 deaths). Residents of Tara, Cambooya and Bungil had the lowest SDRs for premature cancer deaths. Tara, located in the south-east, had 67 per cent fewer deaths than expected from the State rate, with an SDR of 33*. Both Cambooya and Bungil had 64 per cent fewer deaths than expected, with SDRs of 36.

The largest numbers of premature deaths from cancer were recorded in Cairns, with 187 deaths; Toowoomba, with 184 deaths; Maroochy [Part A], with 154 deaths; and Bundaberg/ Burnett, with 151 deaths.

The correlation analysis was not undertaken as there were too many SLAs with small numbers of cases.

Map 5.13:Deaths of people aged 15 to 64 years from cancer, Queensland, 1992 to 1995

Standardised Death Ratio: number of deaths in each Statistical Local Area compared with the number expected*



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

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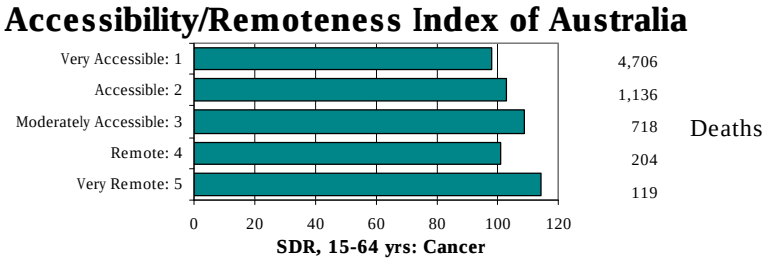


The SDRs for deaths of people aged from 15 to 64 years from all cancers are close to the level expected from the State rates in the Remote ARIA category (an SDR of 101), with the highest SDRs in the Very Remote (114) and Moderately Accessible (109) categories, and the lowest (98) in the Very Accessible category, the only category with fewer deaths than expected from the State rates.

Source: Calculated on ARIA classification, DHAC

Deaths of people aged 15 to 64 years from lung cancer, 1992 to 1995

Capital city comparison (Australia as the Standard)

Over the four years from 1992 to 1995, **Darwin** with a Standardised Death Ratio (SDR) of 164**, and **Hobart**, with an SDR of 120, had the most highly elevated ratios of the capital cities for deaths from lung cancer of people aged from 15 to 64 years. **Canberra** (77*) had the lowest ratio, with 23 per cent fewer deaths than expected from the Australian rates; ratios in the other capitals were close to the *All capitals* average. Overall, the variations from the Australian rates between the two time periods analysed (**Table 5.19**) were relatively small, with the exception of ratios in **Darwin** and **Hobart**. In **Darwin**, the higher SDR in the later period suggests a worsening (relative to the Australian rates) in the death rates for residents from lung cancer between the periods analysed. This is in line with the rates for deaths from all cancers and all causes, recorded above. The lower SDR for **Hobart** suggests an improvement relative to the Australian deaths' experience.

Table 5.19: Deaths of people aged 15 to 64 years from lung cancer, capital cities
Standardised death ratios

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
1992-95	102	94*	103	95	90*	120	164**	77*	98*
1985-89	101	99	108*	92*	99	134**	131	82*	100

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

In **Brisbane** and the other major urban centres, deaths from cancer of the trachea, bronchus and lung (referred to here as lung cancer) accounted for 19.9 per cent of all cancer deaths among 15 to 64 year olds from 1992 to 1995. Although males account for around three quarters of these deaths, the rate among females has increased sharply since the 1970s, as a result of increased cigarette consumption since the 1950s. For example, the ratio of male to female mortality rates from lung cancer in the 1970s and 1980s was consistently above 5; however, in 1996 the ratio fell to an all time low of 2.9 (AIHW, 1998).

A relationship also exists between socioeconomic status and lung cancer. Standardised mortality rates from lung cancer for both males and females from low socioeconomic status areas were highly elevated in relation to those from high socioeconomic status areas (Mathers 1994). The rates were 60 per cent higher for males and 58 per cent higher for females.

Brisbane[7] (Queensland as the Standard)

In total, there were 588 deaths from lung cancer in metropolitan **Brisbane** over the four years from 1992 to 1995, two per cent more than expected from the State rates (an SDR of 102).

The combined areas of Nundah/Wavell Heights (an SDR of 172), Bracken Ridge/Sandgate (154*) and Chermside/Chermside West (137), located north of the Brisbane River, recorded the highest ratios for this variable. Inala/Durack/Doolandella-Forest Lake/ Ellen Grove/Richlands, Gold Coast [Part B], and Berrinba-Karawatha/Kingston, located in the south, also had ratios elevated by 30 per cent or more.

In total, 14 areas were mapped in the middle range, with ratios within 15 per cent of the level expected (**Map 5.14**). Within this range, the highest ratio was recorded in Redcliffe (with eight per cent more premature deaths from lung cancer than expected from the State rates), while there were 15 per cent fewer premature deaths from lung cancer in both Caboolture [Part A] and Bridgeman Downs/Boondall.

Areas with ratios mapped in the lowest range were generally located to the south of the Brisbane River. The lowest ratios for this variable were recorded in Chelmer/Taringa (an SDR of 30), Ferny Hills/Everton Hills (41), Upper Brookfield/Fig Tree Pocket (49) and Tanah-Merah/Carbrook-Cornubia (55). The combined areas of Clayfield and Hendra, with an SDR of 55; Cleveland (57); and Windsor/Lutwyche/Wooloowin (60), were also mapped in the lowest range, although the figures were not statistically significant.

The largest numbers of premature deaths from lung cancer were recorded in Ipswich (with 31 deaths), Caboolture [Part A] (28 deaths) and Redcliffe (26 deaths).

The correlation analysis was not undertaken, as there were too many areas with small numbers of cases.

Gold Coast-Tweed Heads

There were 156 deaths from lung cancer of people aged from 15 to 64 years in **Gold Coast-Tweed Heads**, one per cent more deaths than expected from the State rates (an SDR of 101). At the small area level, ratios were in the range of from 86 per cent above to 40 per cent below the level expected from the State rates. The inner combined area of Worongary-Tallai/Mudgeeraba recorded the highest SDR, of 186*.

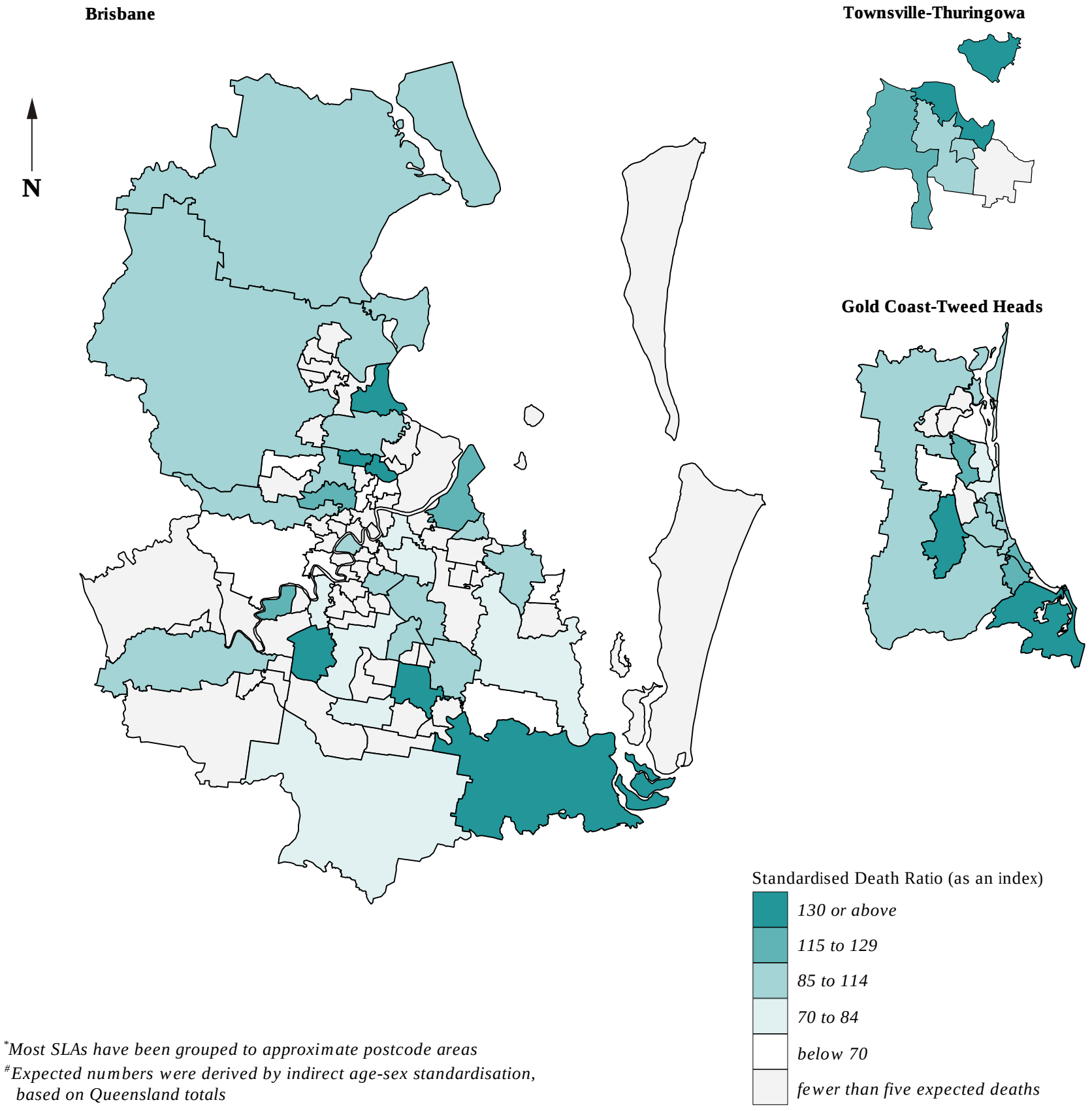
Townsville-Thuringowa

There were 51 premature deaths from lung cancer of people aged from 15 to 64 years in **Townsville-Thuringowa**, 19 per cent more deaths than expected from the State rates (an SDR of 119). By far the highest ratio was recorded in the combined areas of Townsville Coastal and Magnetic Island, with 68 per cent more lung cancer deaths than expected from the State rates (an SDR of 168*). Murray/Mt Louisa and Townsville South East were the only areas to record ratios below the level expected, with SDRs of 96 and 93 respectively.

[7]As there were relatively few areas with sufficient cases to analyse for this variable in the non-metropolitan areas of Queensland, the data have not been mapped. A summary of the main features is on page 172.

Map 5.14: Deaths of people aged 15 to 64 years from lung cancer, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1992 to 1995

Standardised Death Ratio: number of deaths in each area* compared with the number expected#



Most SLAs have been grouped to approximate postcode areas

#*Expected numbers were derived by indirect age-sex standardisation, based on Queensland totals*

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Deaths of people aged 15 to 64 years from circulatory system diseases, 1992 to 1995

Capital city comparison (Australia as the Standard)

Over the four years from 1992 to 1995, Standardised Death Ratios (SDRs) for deaths from circulatory system diseases of people aged from 15 to 64 years ranged from 77** in **Canberra** to 118 in **Darwin**. With the exception of **Hobart** (with an SDR of 105), the other capital cities had fewer deaths than expected from the Australian rates. **Perth** and **Melbourne** also had relatively low ratios, of 82** and 85**, respectively. There was a higher differential (from the Australian rates) in the SDR recorded for **Darwin** in the later period shown in **Table 5.20**, although neither of the SDRs was statistically significant. The higher SDR in this later period suggests a worsening (relative to the Australian rates) in rates of death from circulatory system diseases between the periods analysed. The movement in the ratios for **Brisbane** suggests an improvement in death rates relative to the Australian rates, although neither ratio was statistically significant.

Table 5.20: Deaths of people aged 15 to 64 years from circulatory system diseases, capital cities
Standardised Death Ratios

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
1992-95	98	85**	96	94*	82**	105	118	77**	91**
1985-89	101	87**	103	94**	80**	104	94	77**	94**

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Circulatory system diseases (diseases of the heart and blood vessels) are the major cause of death in the population. In **Brisbane** and the other major urban centres, they accounted for 43.7 per cent of deaths of people of all ages (21,456 deaths) and 24.0 per cent of deaths (2,529 deaths) among people aged from 15 to 64 years over the period from 1992 to 1995. Overall, roughly equal numbers of males and females die from these causes, although it is an important cause of death for males at a much earlier age than for females. For example, the ratio of male to female deaths from this cause was approximately 3:1 between the ages of 45 and 64 years, and it is only above age 75 years that it changes to 2:3 (male to female deaths).

The main causes of death within this group were heart disease (69.0 per cent) – in particular ischaemic heart disease – and cerebrovascular disease (stroke, 24.4 per cent). The AIHW (1994) reports that among people aged 35 to 69 years, men who were current smokers had 2.9 times the age-adjusted risk of a first coronary event (fatal or non-fatal) than non-smokers. For female current smokers, the risk was 3.5 times that of non-smokers.

Brisbane (Queensland as the Standard)

There were 1,890 premature deaths from circulatory system diseases in **Brisbane**, six per cent fewer than were expected from the State rates (an SDR of 94*). Almost three quarters (71.9 per cent) were deaths of males.

The majority of areas with ratios in the lowest category were located in the east and south-east of **Brisbane** (**Map 5.15**). The areas with ratios in the highest range mapped reflected the distribution of male and female deaths from all causes.

New Farm (with an SDR of 262**), the combined areas of Darra Sumner/Wacol (223**), and West End/South Brisbane/Highgate Hill (206**) all had more than twice the number of premature deaths from circulatory system diseases than expected from the State rates. Ratios elevated by 80 per cent or more were also recorded in the combined areas of Inala/Durack/Doolandella-Forest Lake/Ellen Grove/Richlands (an SDR of 181**), East Brisbane/Kangaroo Point (185**) and Dutton Park/ Woolloongabba (191*)

There were a number of areas with low ratios, including St Lucia (with an SDR, of 30*), the combined areas of Moorooka/ Yeerongpilly (32**) and Jindalee/River Hills (44**), located just south of the Brisbane River; and the area from Upper Brookfield to Fig Tree Pocket just to the north (46**).

The largest numbers of premature deaths from circulatory system diseases were recorded in Ipswich (129 deaths), Caboolture [Part A] (110 deaths) and Redcliffe (85 deaths).

The correlation analysis was not undertaken as there were too many areas with small numbers of cases.

Gold Coast-Tweed Heads

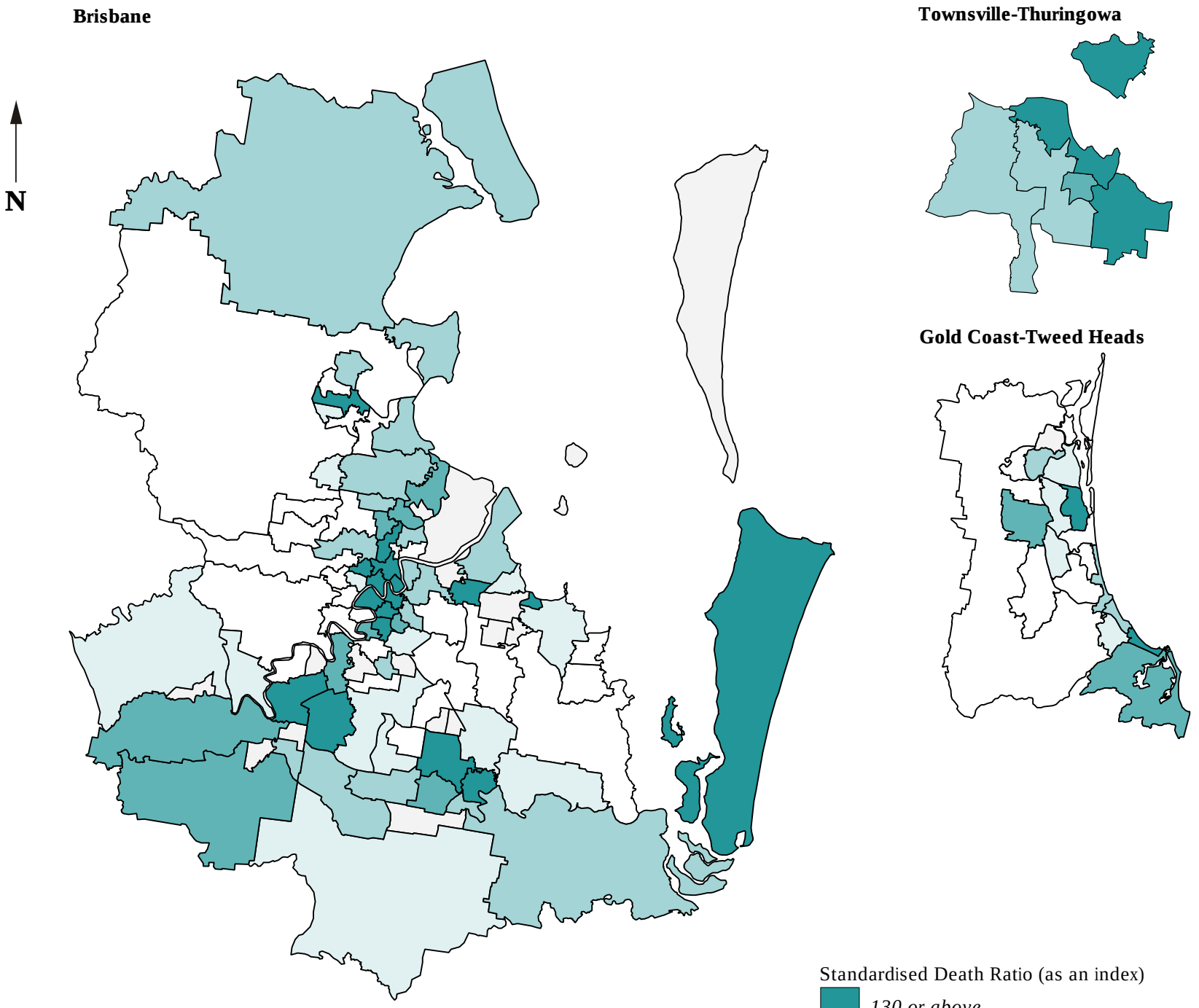
There were 453 premature deaths from circulatory system diseases in the years from 1992 to 1995 in **Gold Coast-Tweed Heads,** 12 per cent fewer than expected from the State rates (an SDR of 88**). Ratios elevated by at least 30 per cent were recorded in Labrador/Southport (an SDR of 135*) and Coolangatta/Tugun (132). Several areas were mapped in the lowest range including Oxenford (an SDR of 60), Robina/ Kerrydale/Burleigh Waters (56**), Surfers Paradise/Benowa (54**), Gold [Part B] Balance (52*), Broadbeach Waters/Mermaid Waters (51**) and Worongary-Tallai/Mudgeeraba (44*).

Townsville-Thuringowa

There were 24 per cent more premature deaths from circulatory system diseases in **Townsville-Thuringowa** than expected from the State rates, an SDR of 124** (and 186 deaths). Thuringowa [Part A] had the lowest ratio, with six per cent fewer deaths than expected. More deaths than expected were recorded in the remaining areas, with the most highly elevated ratio in Townsville Coastal/Magnetic Island (an SDR of 160**).

Map 5.15: Deaths of people aged 15 to 64 years from circulatory system diseases, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1992 to 1995

Standardised Death Ratio: number of deaths in each area* compared with the number expected#



Most SLAs have been grouped to approximate postcode areas

#*Expected numbers were derived by indirect age-sex standardisation, based on Queensland totals*

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Deaths of people aged 15 to 64 years from circulatory system diseases, 1992 to 1995

State/Territory comparison (Australia as the Standard)

Residents of the non-metropolitan areas of all States and the Northern Territory had higher Standardised Death Ratios (SDRs) from diseases of the circulatory system than those living in the capital cities. The largest differentials were in the Northern Territory and Western Australia, with the Northern Territory also recording the highest non-metropolitan SDR, of 289**. At the *Whole of State/Territory* level SDRs ranged from 26 per cent lower than expected in the Australian Capital Territory, an SDR of 74**, to almost twice the number of deaths expected in the Northern Territory, an SDR of 191**.

There was little difference in the SDRs for the two periods shown in **Table 5.21** for most States and Territories, although the higher SDRs in the later period for the Northern Territory, Tasmania and Western Australia suggest a worsening (relative to the Australian rates) in the death rates from these causes.

Table 5.21: Deaths of people aged 15 to 64 years from circulatory system diseases, State/Territory
Standardised death ratios

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1992 to 1995									
Capital city	98	85**	96	94*	82**	105	118	77**[1]	91**
Other major urban centres[2]	120**	107	95	..	..	..	..	..	111**
Rest of State/Territory	121**	101	109**	117**	112**	127**	289**	–[3]	115**
Whole of State/Territory	107**	90**	101	101	90**	118**	191**	74**	100
1985 to 1989									
Rest of State/Territory	119**	99	105**	114**	103	120**	260**	–[3]	111**

[1] Includes Queanbeyan (C)
[2] Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Over the four year period from 1992 to 1995, 43.3 per cent of deaths of people of all ages (15,077 deaths) in the non-metropolitan areas of Queensland were attributable to circulatory system diseases. These causes of death accounted for 25.0 per cent of deaths of people aged from 15 to 64 years and 51.1 per cent of deaths of people aged 65 years and over.

Deaths from circulatory system diseases were a more important cause of death for males at a much earlier age than for females. Between the ages of 45 and 64 years, there were 1,333 male deaths and only 530 female deaths from these causes (over the years from 1992 to 1995). This relationship turned around at the age of 75 years and over, when the number of female deaths (5,299) exceeded the number of male deaths (4,323).

Rest of State (Queensland as the Standard)

There were 2,160 deaths in the non-metropolitan areas of Queensland, eight per cent more deaths of people aged from 15 to 64 years from circulatory system diseases than expected from the State rates (an SDR of 108).

Only five SLAs, all located in the south-east, recorded ratios in the lowest range mapped, while the majority of SLAs had ratios within 15 per cent of the level expected from the State rates. However, data for a number of SLAs have not been mapped for this variable, as there were considered to be too few cases from which to calculate reliable rates (**Map 5.16**).

Elevated ratios of statistical significance were recorded in Torres (with more than four times the number of deaths expected from the State rates, an SDR of 469** and 38 deaths), Cook (338**; 26 deaths), Murgon (280**; 18 deaths) and Mulgrave [Part B] (245**; 22 deaths).

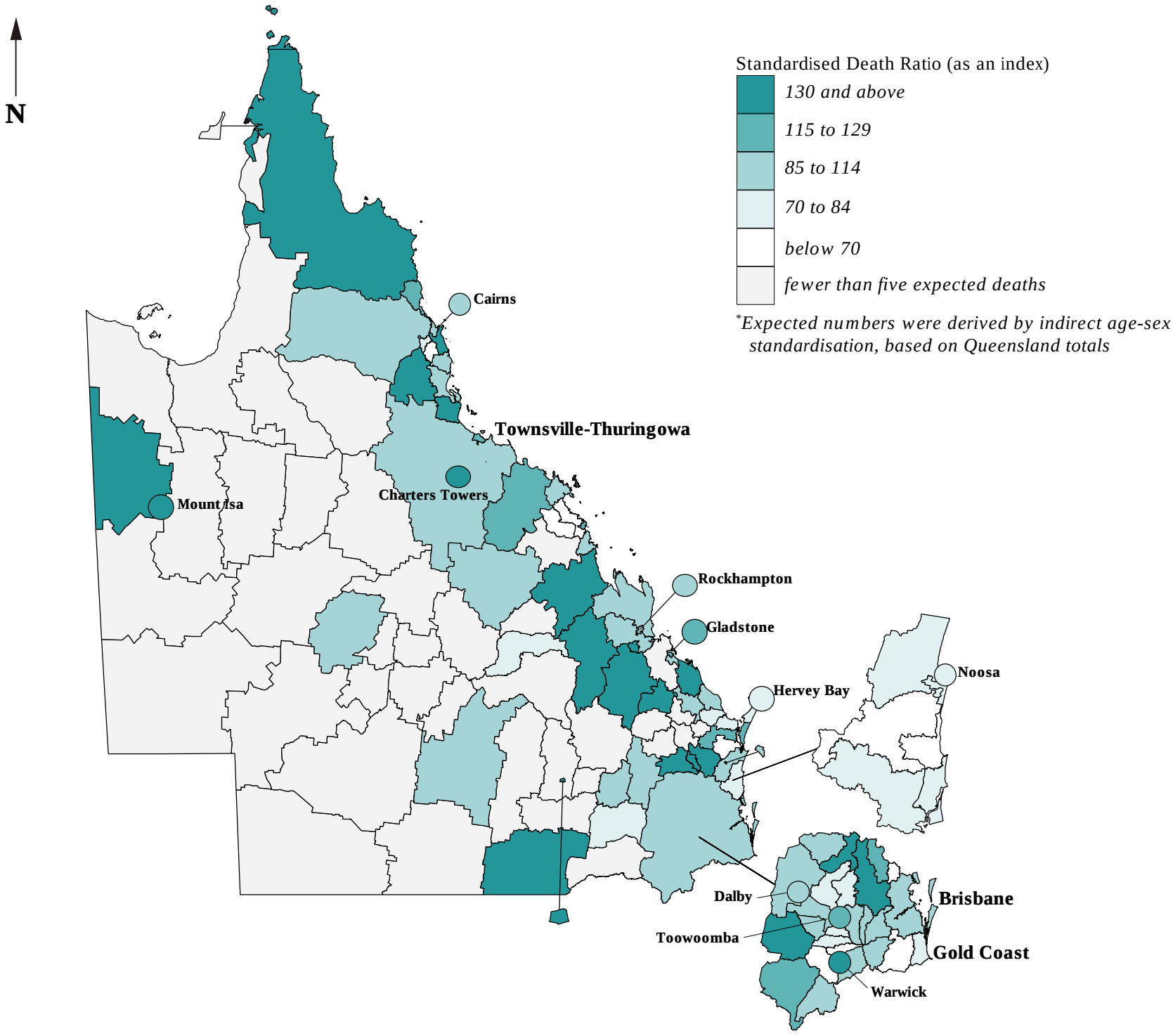
The SLA of Tiaro had the lowest ratio, with 71 per cent fewer deaths of people aged 15 to 64 years from circulatory system diseases than expected from the State rates (an SDR of 29). Fewer than the expected number of deaths were also recorded in Caboolture [Part B] (31), Pioneer [Part B] (50*), Mirani (53) and Maroochy [Part B] (57*).

The largest numbers of deaths were recorded in Toowoomba (146), Cairns (119), Bundaberg/Burnett (105), and Rockhampton (91).

The correlation analysis was not undertaken as there were too many SLAs with small numbers of cases.

Map 5.16: Deaths of people aged 15 to 64 years from circulatory system diseases, Queensland, 1992 to 1995

Standardised Death Ratio: number of deaths in each Statistical Local Area compared with the number expected*



Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

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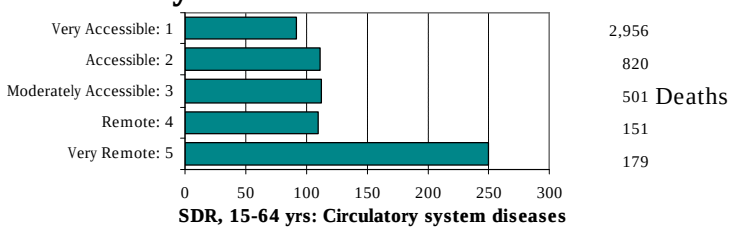


Death rates of people aged from 15 to 64 years from circulatory system diseases are elevated in all but the Very Accessible category (with an SDR of 92). The Remote (an SDR of 110), Accessible (111) and Moderately Accessible (112) categories all recorded similar elevated ratios, with a very highly elevated ratio of 250 in the Very Remote category. The elevated SDR in the Very Remote category is likely to reflect the very high premature death rates experienced by Indigenous people.

Source: Calculated on ARIA classification, DHAC

Deaths of people aged 15 to 64 years from respiratory system diseases, 1992 to 1995

Capital city comparison (Australia as the Standard)

Over the four years from 1992 to 1995, Standardised Death Ratios (SDRs) for deaths from respiratory system diseases of people aged from 15 to 64 years ranged from 64** in **Perth** to 193** in **Darwin**. **Canberra** and **Melbourne** also had relatively low ratios, of 79 and 79**, respectively. With the exception of **Hobart** (with an SDR of 115), the other capital cities had fewer deaths than expected. There was a larger differential (from the Australian rates) in the SDR recorded in a number of the capital cities in the later period shown in **Table 5.22**, with the largest in **Darwin**. The higher ratio in this later period suggests a worsening (relative to the Australian rates) in rates of death from respiratory system diseases between the periods analysed. The movement in the ratios for **Perth** and **Melbourne** suggest a marked improvement in death rates relative to the Australian rates.

Table 5.22: Deaths of people aged 15 to 64 years from respiratory system diseases, capital cities
Standardised death ratios

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
1992-95	94	79**	98	87*	64**	115	193**	79	87**
1985-89	90**	90**	101	74**	73**	98	124	71**	88**

[1]Includes Queanbeyan (C)
Source: See *Data sources,* Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

The organs of the respiratory system include the nose, pharynx, larynx, trachea, bronchi and lungs.

There were 3,881 deaths from diseases of the respiratory system over the years from 1992 to 1995, 7.9 per cent of all deaths of residents of **Brisbane** and the other major urban centres. More than two thirds (62.7 per cent) of deaths from diseases of the respiratory system were from chronic obstructive pulmonary disease (largely deaths from bronchitis, emphysema and asthma), while 21.4 per cent were deaths from pneumonia and influenza. People aged from 15 to 64 years accounted for 11.9 per cent of these deaths.

There is a strong association between deaths from respiratory system diseases and socioeconomic status. Mathers (1994) noted substantial differentials in mortality rates from respiratory system diseases among working age Australians: men aged from 25 to 64 years living in areas of greatest socioeconomic disadvantage had death rates 2.3 times higher than those living in areas of least disadvantage (rates elevated by 130 per cent). For females the differential was just more than double (106 per cent). These differentials have persisted in 1995-97 (**Table 5.2**). In NSW, a marked correlation (-0.45) has been found between premature deaths from respiratory illness and socioeconomic status over the period 1990-94 (NSW Health Department 1997). Increased rates of (age standardised) years of life lost have also been found in the lowest socioeconomic quintile in Victoria in 1996 (Department of Human Services Victoria, in press).

Deaths from respiratory system diseases are also a major cause of death for Aboriginal people. Over the period from 1992 to 1994, these death rates were reported to be over 7 times higher than expected in SA, WA and the NT. This represents 17 per cent of the excess deaths in Indigenous men and 12 per cent of the excess deaths in Indigenous women in these States (AIHW/ABS 1996). More recent figures indicate that respiratory diseases accounted for 13.4 per cent of excess deaths in Indigenous men and 15.8 per cent of excess deaths in Indigenous women in SA, WA and the NT (ABS/AIHW 1999).

Brisbane (Queensland as the Standard)

As there were many SLAs in the non-metropolitan areas of Queensland with too few cases to analyse for this variable, the data have not been mapped. *Summary details are on page 173.*

There were 365 deaths of people aged from 15 to 64 years from respiratory system diseases in **Brisbane**, five per cent fewer deaths than expected from the State rates (an SDR of 95). Males accounted for over half (57.3 per cent) of the deaths.

The highest ratios were recorded in the areas from Berrinba-Karawatha to Kingston (with an SDR of 217**); the combined areas of Hemmant-Lytton/Wynnum/Wynnum West (171), west of the city; and Graceville/Oxley, south of the Brisbane River (161) (**Map 5.17**). The combined area of Ashgrove/The Gap had by far the lowest ratio for deaths from respiratory system diseases among this age group, an SDR of 13*. The only other low ratio (of statistical significance) was recorded for the Rochedale South/Slacks Creek area, an SDR of 32*.

Ipswich (with 27 deaths) and Caboolture [Part A] (25 deaths) had the largest number of deaths from respiratory system diseases in the 15 to 64 year age group.

The correlation analysis was not undertaken as there were too many areas with small numbers of cases.

Gold Coast-Tweed Heads

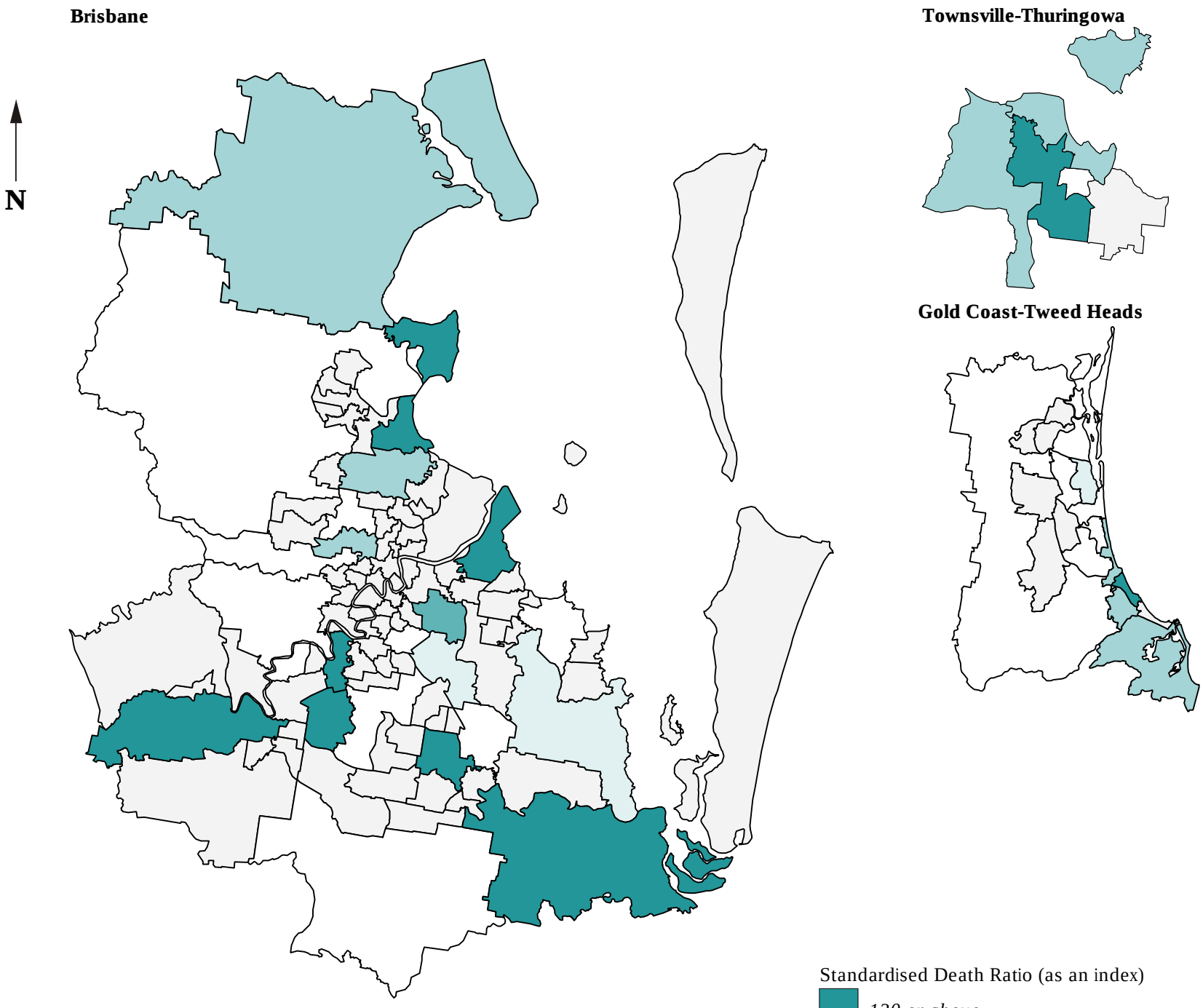
Over the years from 1992 to 1995, there were 66 deaths from respiratory system diseases in **Gold Coast-Tweed Heads**, 34 per cent fewer than expected (an SDR of 66**)**.** Elevated ratios were recorded in the combined areas of Palm Beach/Currumbin (131) and Broadbeach/Burleigh Heads (113). With the exception of Tweed Heads (with an SDR of 94), all other areas had ratios in the lowest range mapped.

Townsville-Thuringowa

There were 30 deaths from respiratory system diseases in **Townsville-Thuringowa**, 4 per cent more than expected from the State rates, with SDRs ranging from 140 in the areas of Murray/Mt Louisa to 17 in Gulliver/Hermit Park.

Map 5.17: Deaths of people aged 15 to 64 years from respiratory system diseases, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1992 to 1995

Standardised Death Ratio: number of deaths in each area* compared with the number expected#



Most SLAs have been grouped to approximate postcode areas

#*Expected numbers were derived by indirect age-sex standardisation, based on Queensland totals*

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

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Accidents, poisonings and violence as a cause of death

Introduction

Accidental and violent deaths are classified according to the external cause of death, that is, according to the circumstances of the accident or violent incident that produced the fatal injury, rather than the nature of the injury. This differs from the other causes of death analysed, which are classified according to the underlying disease or condition.

The main causes of death in this classification of accidents, poisonings and violence are comprised of the following:

- suicide (30.1 per cent);
- motor vehicle traffic accidents (28.9 per cent);
- accidental falls (12.8 per cent, mainly of elderly people); and
- accidental drownings (3.8).

Although representing only 7.0 per cent of deaths of people of all ages, deaths from the external causes of accidents, poisonings and violence are a major cause of premature death, accounting for 21.7 per cent of deaths in the 15 to 64 year age group. Among people aged from 15 to 64 years, the major causes of death from external causes are as follows:

- suicide (36.7 per cent);
- motor vehicle traffic accidents (31.5 per cent);
- assault without weapon or weapon not specified (3.9 per cent); and
- accidental drownings (3.2 per cent).

Over the period from 1992 to 1995, there were 1,161 deaths in Queensland from the combined external causes of accidents, poisonings and violence among people aged from 15 to 24 years, representing 75.8 per cent of all deaths in this age group. Motor vehicle traffic accidents and suicides accounted for the majority of these deaths (74.8 per cent in total: 43.1 per cent from motor vehicle traffic accidents and 31.7 per cent from suicides).

Males predominated in these causes of death, accounting for 77.2 per cent of deaths from these causes in the 15 to 64 year age group (ranging from 80.1 per cent of suicides to 73.0 per cent of motor vehicle traffic accidents) and 77.5 per cent of deaths among 15 to 24 year olds (see **Table 5.23**).

Table 5.23: Deaths from accidents, poisonings & violence, by cause, Queensland, 1992 to 1995

Age (years) and sex	Motor vehicle traffic accidents		Suicides		All accidents, poisonings & violence[1]	
	No.	%	No.	%	No.	%
15 to 24						
Males	369	73.8	303	82.3	900	77.5
Females	131	26.2	65	17.7	261	22.5
Total	**500**	**100.0**	**368**	**100.0**	**1,161**	**100.0**
15 to 64						
Males	944	73.0	1,205	80.1	3,170	77.2
Females	350	27.0	300	19.9	936	22.8
Total	**1,294**	**100.0**	**1,505**	**100.0**	**4,106**	**100.0**

[1] Includes other accidents, poisonings and violence.
Source: See *Data sources*, Appendix 1.3

As can be seen from **Table 5.24**, death rates from the combined causes of accidents, poisonings and violence were substantially higher, across all age groups, in the non-metropolitan areas of Queensland than in **Brisbane**. The biggest difference was recorded among males aged from 15 to 64 years, where the rates ranged from 85.1 per 100,000 population in the non-metropolitan areas to 46.3 per 100,000 population in **Brisbane**.

Table 5.24: Deaths from accidents, poisonings and violence, by area of residence, Queensland, 1992 to 1995

Age (years) and sex	Brisbane		Rest of Queensland		Total	
	No.	Rate	No.	Rate	No.	Rate
15 to 24						
Males	**396**	**78.4**	**391**	**97.1**	**900**	**86.3**
Females	**108**	**21.9**	**124**	**32.8**	**261**	**26.2**
Total	**504**	**50.5**	**515**	**66.0**	**1,161**	**56.9**
15 to 64						
Males	**1,263**	**46.3**	**1,519**	**85.1**	**3,170**	**73.5**
Females	**399**	**22.7**	**425**	**25.0**	**936**	**22.2**
Total	**2,166**	**34.6**	**1,944**	**55.7**	**4,106**	**48.2**
All ages						
Males	**1,603**	**55.0**	**1,972**	**74.1**	**4,083**	**63.7**
Females	**718**	**23.9**	**749**	**29.4**	**1,686**	**26.4**
Total	**2,321**	**39.5**	**2,721**	**51.8**	**5,769**	**26.4**

[1]Rate per 100,000 population of same age and sex
Source: See *Data sources*, Appendix 1.3

Mathers (1994) noted substantial differentials in mortality rates from accidents, poisonings and violence among working age Australians, with men aged 25 to 64 years living in areas of greatest socioeconomic disadvantage having death rates almost twice as high (96 per cent higher) as those living in areas of least disadvantage. For females the differential was 69 per cent. Similar differentials for males and females have persisted over the years from 1995 to 1997, with differentials for motor vehicle traffic accidents becoming substantially larger (**Table 5.2**).

The NSW Health Department (1997) found an inverse relationship (-0.23) between high socioeconomic status and death by accidents, poisoning and violence in 15 to 64 year olds over the period from 1990 to 94.

Indigenous people also have higher death rates from these causes. The ABS and AIHW (1999) report that for Indigenous men, the standardised mortality ratio (from accidents, poisonings and violence) was 3.2 times that expected from the overall Australian rates, and deaths from causes in this group were responsible for 19.3 per cent of the excess mortality experienced. For Indigenous women, the standardised mortality ratio was 3.6 times that expected, and deaths from causes in this group were responsible for 16.9 per cent of the excess mortality. These figures were derived from data for deaths of Indigenous people in SA, WA and the NT for the three-year period 1995-1997.

Years of potential life lost from accidents, poisonings and violence

Estimates have been made of the number of years of potential life lost (YPLL: see discussion on page 166 for additional details of this concept) from deaths from the external causes of accidents, poisonings and violence (Ginpil et al 1992). For people of 'working life' (ages 18 to 65 years) it is estimated that 180,234 years of (potential) life have been lost due to premature deaths from these external causes. This is 34.2 per cent of the total number of YPLL from all causes of death, of which 15.0 per cent were from road crashes, 8.9 per cent from suicides, 8.4 per cent from other accidents, and 1.9 per cent from violence. For males, 32.5 per cent of YPLL during their working life were from these external causes and, for females, 16.0 per cent.

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Deaths of people aged 15 to 64 years from accidents, poisonings and violence, 1992 to 1995

Capital city comparison (Australia as the Standard)

Over the four years from 1992 to 1995, Standardised Death Ratios (SDRs) for deaths from accidents, poisonings and violence, of people aged from 15 to 64 years ranged from 75** in **Canberra** to 149** in **Darwin**. With the exception of **Darwin**, and **Hobart** (an SDR of 114**), the other capital cities had fewer deaths than expected. **Melbourne** and **Sydney** also had relatively low ratios, of 80** and 84**, respectively.

There was a higher differential (from the Australian rates) in the SDRs recorded for **Hobart** and **Darwin** in the later period shown in **Table 5.25**, suggesting a worsening (relative to the Australian rates) in rates of death from accidents, poisonings and violence between the periods analysed. The movement in the ratios for **Canberra** indicates an improvement in death rates relative to the Australian rates; similar, but smaller movements were evident in the ratios for **Sydney** and **Melbourne**.

Table 5.25: Deaths of people aged 15 to 64 years from accidents, poisonings and violence, capital cities
Standardised death ratios

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
1992-95	84**	80**	99	96	95	114**	149**	75**	88**
1985-89	91**	86**	92**	86**	82**	98	141**	88**	89**

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Within **Brisbane** and the other major urban centres, there were 3,107 deaths from the combined causes of accidents, poisonings and violence (75.7 per cent of all deaths from these causes). Some 70.7 per cent of these (2,197 deaths) were deaths of 15 to 64 year olds, and 76.3 per cent were males. There were 26.0 per cent fewer deaths of 15 to 64 year olds resident in **Brisbane** from these external causes over the years from 1992 to 1995 than over the period from 1985 to 1989, declining from an average 393 deaths per year to 291 per year.

Brisbane (Queensland as the Standard)

There were 1,662 premature deaths from accidents, poisonings and violence of residents of **Brisbane** over the four years from 1992 to 1995, 13 per cent fewer than expected from the State rates (an SDR of 87**). Three quarters of the deaths (76.0 per cent) were males.

In **Brisbane**, areas with ratios elevated by 30 per cent or more were generally located in the inner and outer southern suburbs, and areas with at least 30 per cent fewer deaths than expected were situated just north or south of the Brisbane River (**Map 5.18**).

The combined areas of East Brisbane/Kangaroo Point (with an SDR of 248**), Darra Sumner/Wacol (218**), West End/South, Brisbane/Highgate Hill (213**) and Dutton Park/Woolloongabba (212**) had more than twice the expected number of deaths of people aged from 15 to 64 years from this group of external causes.

In contrast, the lowest ratios for premature deaths from accidents, poisonings and violence were recorded in Albany Creek (with an SDR of 14**), Browns Plains (30**) and the combined area of Algester/Parkinson-Drewvale (35*).

The largest numbers of premature deaths from these external causes were recorded in Ipswich and Caboolture, with 106 and 103 deaths respectively.

The correlation analysis was not undertaken as there were too many areas with small numbers of cases.

Gold Coast-Tweed Heads

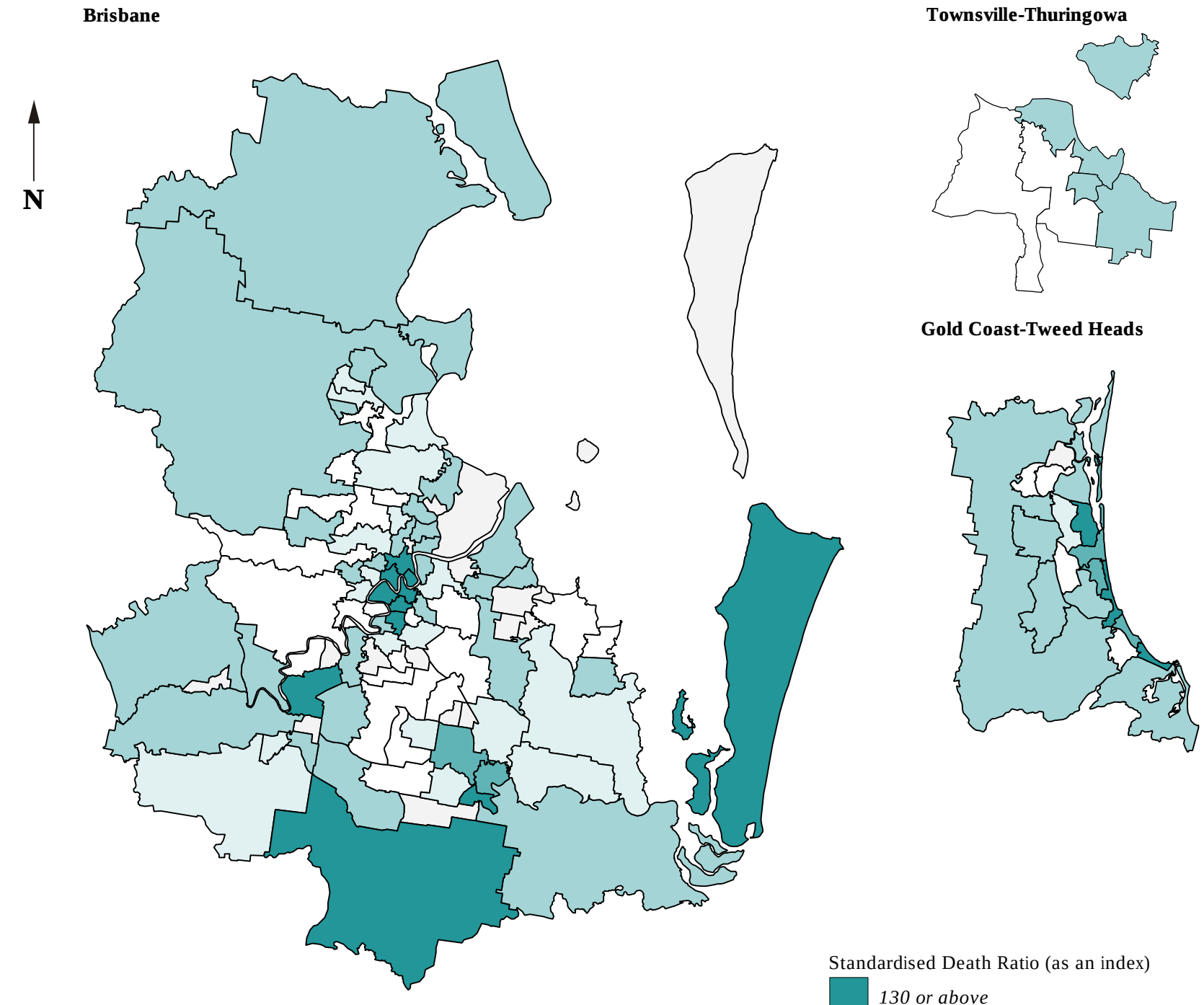
In **Gold Coast-Tweed Heads** there were four per cent more deaths of 15 to 64 year olds from this group of external causes than were expected from the State rates (an SDR of 104 and 403 deaths). Broadbeach/Burleigh Heads (with an SDR of 157**), Coolangatta/Tugun (145) and Labrador/Southport (145**) all had highly elevated ratios. Ratios of below 70 were recorded in Helensvale (67), Oxenford (63), Currumbin Waters/Elanora (53*) and Carrara-Merrimac (30*).

Townsville-Thuringowa

There were 132 premature deaths from this group of external causes in the major urban centre of **Townsville-Thuringowa**, 23 per cent fewer than expected from the State rates (an SDR of 77**). Elevated ratios were recorded in Gulliver/Hermit Park (an SDR of 112) and Townsville South East (107), while ratios below the level expected were recorded in the combined areas of Townsville Coastal/Magnetic Island (97), Murray/Mt Louisa (60**) and Thuringowa [Part A] (55**).

Map 5.18: Deaths of people aged 15 to 64 years from accidents, poisonings and violence, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1992 to 1995

Standardised Death Ratio: number of deaths in each area* compared with the number expected#



*Most SLAs have been grouped to approximate postcode areas

#Expected numbers were derived by indirect age-sex standardisation, based on Queensland totals

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Deaths of people aged 15 to 64 years from accidents, poisonings and violence, 1992 to 1995

State/Territory comparison

Residents of the non-metropolitan areas of all States and the Northern Territory had higher Standardised Death Ratios (SDRs) from the external causes of accidents, poisonings and violence than those living in the capital cities. Apart from Tasmania, the differentials were substantial, with the largest being in the Northern Territory: the Northern Territory also had the highest non-metropolitan SDR, of 254**.

The main differences from the Australian rates in the SDRs for the two periods shown in **Table 5.26** were in Western Australia (the higher SDR in the later period suggesting a worsening, relative to the Australian rates, in the death rates from these external causes) and the Northern Territory, with a somewhat lower ratio, suggesting an improvement (relative to the Australian rates) in the death rates from these causes.

Table 5.26: Deaths of people aged 15 to 64 years from accidents, poisonings and violence, State/Territory
Standardised death ratios

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1992 to 1995									
Capital city	84**	80**	99	96	95	114**	149**	75**[1]	88**
Other major urban centres[2]	95	111	108	..	..	..	..	..	101
Rest of State/Territory	121**	108**	131**	132**	152**	129**	254**	–[3]	127**
Whole of State/Territory	94**	88**	113**	105*	110**	123**	204**	74**	100
1985 to 1989									
Rest of State/Territory	122**	120**	133**	126**	123**	116**	285**	–[3]	126**

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

There were 2,721 deaths in the non-metropolitan areas of Queensland attributable to accidents, poisonings and violence, representing 7.8 per cent of all deaths for all ages. Unlike deaths from all causes, where the highest proportion is experienced among people aged 65 years and over, deaths from accidents, poisonings, and violence are a major cause of premature death, of people between the ages of 15 and 64 years. Premature deaths accounted for 71.4 per cent of the 2,721 deaths recorded in the non-metropolitan areas of Queensland; in comparison only 21.3 per cent of these deaths occurred at the age of 65 years and over.

Rest of State (Queensland as the Standard)

There were 1,944 deaths from the external causes of accidents, poisonings and violence of residents of the non-metropolitan areas of Queensland aged from 15 to 64 years, 16 per cent more than expected from the State rates (an SDR of 116**). The relatively higher death rates of Aboriginal people from this group of causes may be an influence in some of the high standardised death ratios recorded for the more remote areas. Males accounted for more than three quarters (78.1 per cent) of these deaths.

More than half of the SLAs in the non-metropolitan areas of Queensland had elevated ratios (**Map 5.19**). The highest of these was recorded for residents of Carpentaria, with nearly four times more deaths from these causes than expected from the State rates (an SDR of 398** and 20 deaths). A further eight SLAs had more than twice the number of deaths expected from the State rates. The majority of these SLAs were situated in the most northern part of the State, and included Eacham (with an SDR of 289** and 20 deaths), Cook (265**; 19), Mulgrave [Part B] (262**; 21), Herberton (241**; 13), and Charters Towers (217**; 25). The remaining three SLAs, located in the south-east, were Murgon (222**; 12), Isis (220**; 14), and Tiaro (217**; 11).

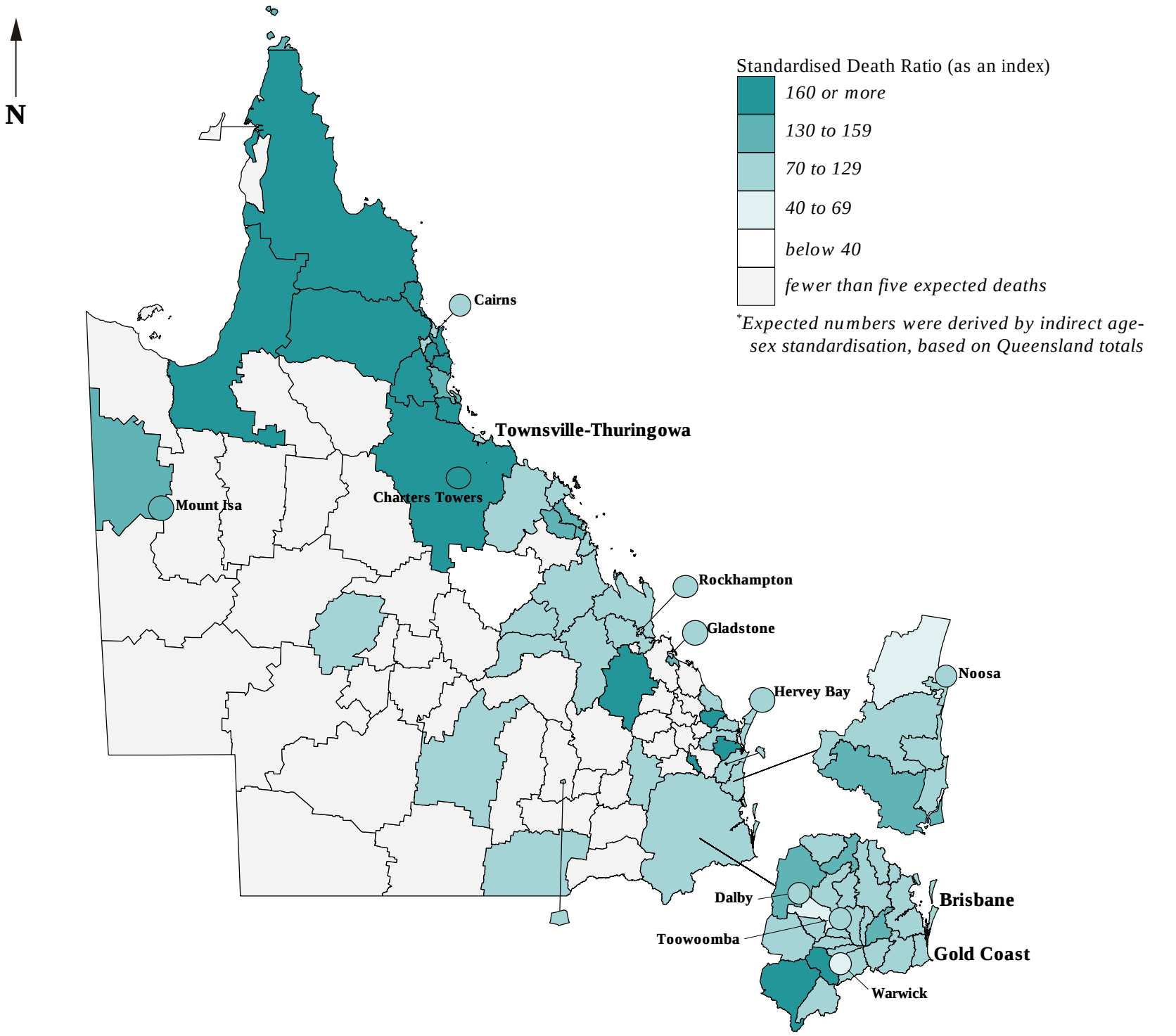
Belyando had the lowest SDR for premature deaths from external causes in comparison with the State rate (an SDR of 19**). Fewer deaths than expected were also recorded in Fitzroy [Part A], Warwick and Jondaryan, with SDRs of 35, 53 and 54 respectively.

The largest numbers of deaths of people aged from 15 to 64 years from these external causes were recorded in Cairns, with 129 deaths; Maroochy [Part A], with 81 deaths; Bundaberg/ Burnett, 80 deaths; and Toowoomba, 78 deaths.

The correlation analysis was not undertaken as there were too many SLAs with small numbers of cases.

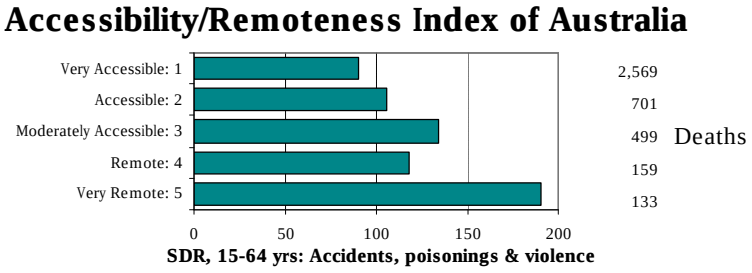
Map 5.19: Deaths of people aged 15 to 64 years from accidents, poisonings and violence, Queensland, 1992 to 1995

Standardised Death Ratio: number of deaths in each Statistical Local Area compared with the number expected*



Source: See Data sources, Appendix 1.3 ***Details of map boundaries are in Appendix 1.2***

Accessibility/Remoteness Index of Australia



There are major differences in SDRs for accidents, poisonings and violence across the ARIA categories. The most highly elevated ratio (an SDR of 190 n the Very Remote category) is more than twice the lowest ratio (an SDR of)0 in the Very Accessible category). The middle three categories all had elevated ratios, the highest being in the Moderately Accessible category (an SDR of 134). Again, the influence of Indigenous deaths is likely to be an important influence in the high ratios for the more remote areas.

Source: Calculated on ARIA classification, DHAC

Deaths of people aged 15 to 24 years from accidents, poisonings and violence, 1992 to 1995

Capital city comparison (Australia as the Standard)

Over the four years from 1992 to 1995, Standardised Death Ratios (SDRs) for deaths from accidents, poisonings and violence of people aged from 15 to 24 years ranged from 65** in **Canberra** to 127* in **Hobart**. With the exception of **Darwin** (with an SDR of 124) and **Brisbane** (104), the other capital cities recorded fewer deaths than expected. **Sydney** and **Melbourne** also had relatively low ratios, of 76** and 78**, respectively.

There was a higher differential (from the Australian rates) in the SDRs recorded for **Perth**, **Brisbane**, **Hobart** and **Darwin** in the later period shown in **Table 5.27**, suggesting a worsening (relative to the Australian rates) in rates of death from accidents, poisonings and violence between the periods analysed. The movements in the ratios for the other capitals (and in particular in **Canberra)** indicate an improvement in death rates relative to the Australian rates.

Table 5.27: Deaths of people aged 15 to 24 years from accidents, poisonings and violence, capital cities
Standardised death ratios

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
1992-95	76**	78**	104	85**	97	127*	124	65**	84**
1985-89	88**	81**	83**	89*	76**	95	112	97	85**

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Deaths from the external causes of accidents, poisonings and violence were the major cause of death for people aged from 15 to 24 years. Over the four year period from 1992 to 1995, they represented 76.3 per cent of all deaths in Queensland in this age group - 81.3 per cent of male deaths and 62.1 per cent of female deaths from these external causes. Males predominated, accounting for 78.0 per cent of all deaths. Almost half (41.0 per cent) of these male deaths were from motor vehicle traffic accidents and one third (33.7 per cent) were from suicides.

Mathers (1994) examined the extent of disparities (related to socioeconomic status of area of residence) in mortality rates according to the major cause of death. Differentials in mortality rates for deaths from injury and poisonings were clearly evident for both males and females (aged from 15 to 24 years) from the most socioeconomically disadvantaged areas - 47 per cent more deaths of males than in the most advantaged areas, and 66 per cent more for females. This relationship was also evident between socioeconomic status and suicides, with 35 per cent more male deaths and 30 per cent more female deaths in the most socioeconomically disadvantaged areas than there were in the most advantaged areas. Mathers (in press) has recently reported an increase in the rates of male suicide in areas of low socioeconomic status over the decade from 1985.

Brisbane[8] (Queensland as the Standard)

There were 5.9 per cent more deaths of people aged from 15 to 24 years in **Brisbane** over the years from 1992 to 1995 than from 1985 to 1989, an increase from an average of 119 deaths per year from the external causes of accidents, poisonings and violence, to 126 deaths per year. Deaths of residents of **Brisbane** from these external causes were 11 per cent lower than expected from the State rates**,** an SDR of 89**.

Greenbank [Part A]/Beaudesert was the only area to record an elevated ratio of statistical significance (an SDR of 234**). The inner combined areas of Inala/Durack/Doolandella-Forest Lake/Ellen Grove/Richlands (with an SDR of 156) and West End/South Brisbane/Highgate Hill (155) also recorded ratios in the highest range mapped (**Map 5.20**).

The area of Windsor/Lutwyche/Wooloowin had the lowest ratio (an SDR of 18) with one death, when six were expected from the State rates). Low ratios were also recorded in Browns Plains (with an SDR of 38) and in the combined area of Hemmant-Lytton/Wynnum/Wynnum West (40).

The largest numbers of premature deaths from these causes were recorded in Caboolture [Part A] (33 deaths) and Ipswich (29 deaths).

The correlation analysis was not undertaken as there were too many areas with small numbers of cases.

Gold Coast-Tweed Heads

In **Gold Coast-Tweed Heads**, there were three per cent more premature deaths of young adults from these external causes than were expected from the State rates, an SDR of 103 (with 104 deaths). Broadbeach Waters/Mermaid Waters, Labrador/Southport and Robina/Kerrydale/Burleigh Waters had elevated ratios, with SDRs of 191, 160 and 138, respectively. Gold Coast [Part B] Balance recorded the lowest ratio, with 60 per cent fewer deaths than expected (an SDR of 40).

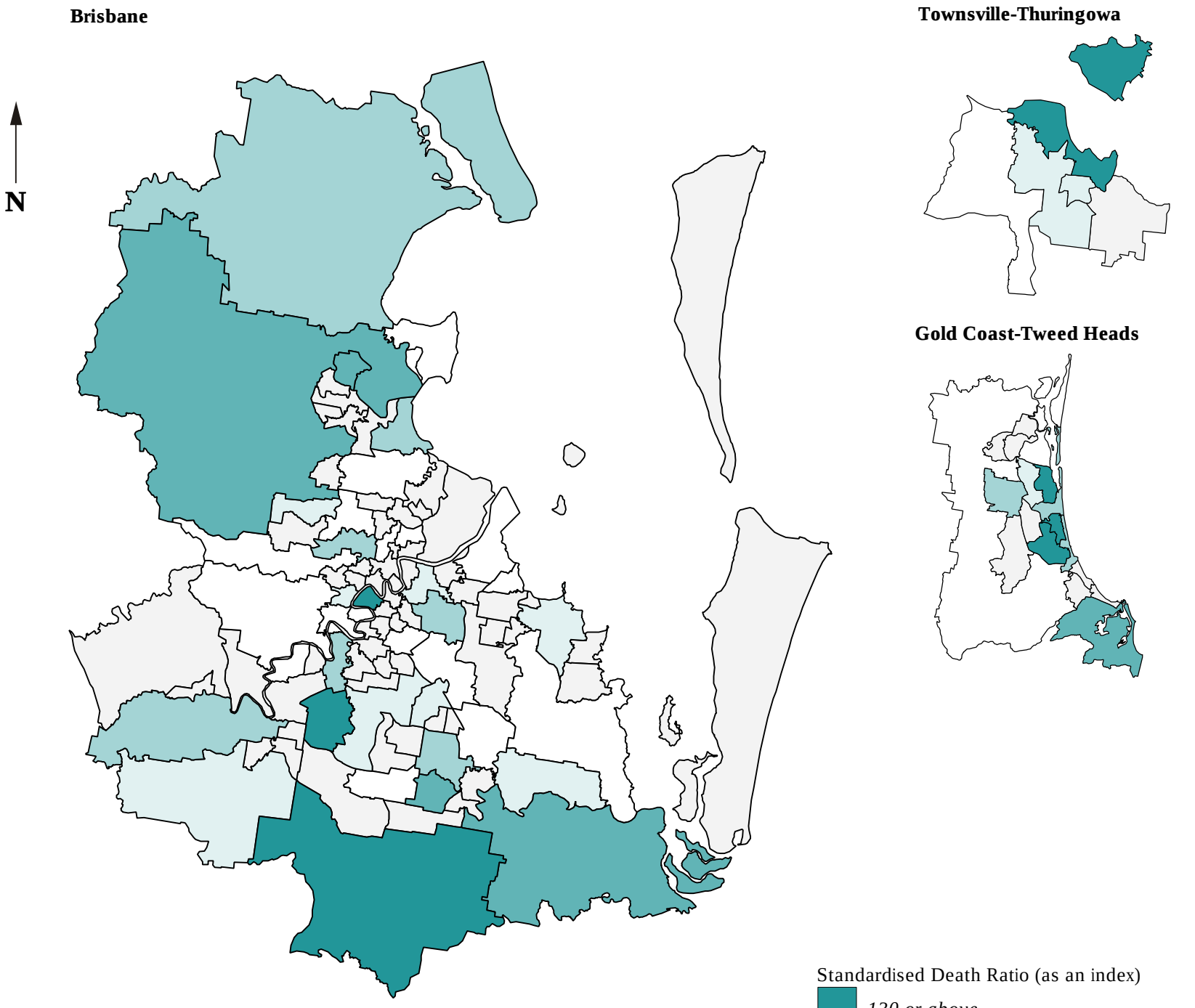
Townsville-Thuringowa

Townsville-Thuringowa with an SDR of 84 (and 48 deaths of 15 to 24 year olds from these external causes), had a much lower ratio than recorded for residents of **Gold Coast-Tweed Heads**. The combined areas of Townsville Coastal and Magnetic Island recorded 36 per cent more premature deaths from external causes (an SDR of 136), while the remaining areas had ratios below the level expected.

[8]As there were relatively few areas with sufficient cases to analyse for this variable in the non-metropolitan areas of Queensland, the data have not been mapped. A summary of the main features is on page 174.

Map 5.20: Deaths of people aged 15 to 24 years from accidents, poisonings and violence, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1992 to 1995

Standardised Death Ratio: number of deaths in each area* compared with the number expected#



Most SLAs have been grouped to approximate postcode areas

#*Expected numbers were derived by indirect age-sex standardisation, based on Queensland totals*

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Deaths of people aged 15 to 64 years: years of potential life lost, 1992 to 1995

Capital city comparison (Australia as the Standard)

One measure of the impact of premature death is the number of potential years of life lost as a result of death before the age of 65 years. This measure is calculated as the sum of all the years of life that could potentially have been lived had people not died before the age of 65 years. The total number of years of potential life lost (YPLL) is calculated by assuming that people who died at 17 years of age would have otherwise lived to the age of 65 years (ie. 65 minus 17 years), or 48 years. In this analysis, deaths included were of people aged from 15 to 64 years. The results are expressed as rates per 100,000 population, and age standardised to the Australian population.

People in most capital cities had fewer years of potential life lost (YPLL) than were expected from the Australian rates, with the lowest standardised ratios (SRs) in **Canberra** (81**), **Perth** (89**) and **Melbourne** (90**) (**Table 5.28**). **Darwin** (with an SR of 137**) and **Hobart** (108**) had the only elevated ratios: the ratio of 137** in **Darwin** indicates that there were 37 per cent more YPLL by 15 to 64 year old residents of **Darwin** than would be expected from the Australian rates. Overall, ratios for females (95**) were generally higher than for males (94**), the exceptions being **Sydney** and **Darwin** (**Table 5.28**).

Table 5.28: Deaths of people aged 15 to 64 years: years of potential life lost, capital cities, 1992 to 1995
Standardised ratios

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
Males	**99****	**90****	**93****	**93****	**88****	**104****	**144****	**79****	**94****
Females	**96****	**91****	**97****	**100**	**91****	**114****	**122****	**84****	**95****
Total	**98****	**90****	**94****	**96****	**89****	**108****	**137****	**81****	**94****

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Brisbane (Queensland as the Standard)c

Over the years from 1992 to 1995, there were an estimated 221,323 YPLL as a result of deaths of residents of **Brisbane** aged from 15 to 64 years, seven per cent fewer YPLL than were expected from the State rates (an SR of 93**). Males accounted for almost two thirds (137,812 years, 62.3 per cent) and females for over one third (83,511 years, 37.7 per cent).

The distribution of standardised ratios produced a pattern consistent with that evident for many of the measures of socioeconomic status, with the highest ratios located in a band of areas along the Brisbane River, and the lowest generally located in the mid-north and south of **Brisbane** (**Map 5.21**).

The highest ratio of 240**, was recorded in New Farm, indicating that there were nearly two and a half times the number of YPLL than were expected from the State rates. Ratios elevated by 50 per cent or more were also recorded in the inner and middle areas of Darra Sumner/Wacol (an SR of 217**), Dutton Park/Woolloongabba (204**), East Brisbane/Kangaroo Point (204**), City/Spring Hill (190**), Northgate (187**), Herston/ Newstead (182**), West End/South Brisbane/Highgate Hill (177**) and Murarrie (154**).

Residents of Chandler had the lowest ratio for this variable, with 59 per cent fewer YPLL than were expected from the State rates (an SR of 41**). Low ratios to the north of the Brisbane River were recorded in Ferny Hills/Everton Hills (an SR of 53**), Upper Brookfield/Fig Tree Pocket (62**), Bald Hills (64**), Albany Creek (65**) and Ashgrove/The Gap (68**).

The distribution of SRs for males across **Brisbane** was very similar to that recorded for females (with an SR of 93** for males and of 95** for females). However, ratios recorded for males were substantially higher than those for females among residents of City/Spring Hill (an SR of 223** for males and 96 for females), Moreton Island (123 and 0) and Carole Park (144** and 56**). Ratios for females exceeded those for males in Capalaba West (183** and 0), Pinkenba-Eagle Farm (213** and 111) and Kuraby (166** and 75**).

The greatest impact of premature death (when measured by YPLL by the population aged from 15 to 64 years) was recorded for residents of Ipswich (a loss of 12,719 years), Caboolture [Part A] (12,638 years) and Redcliffe (8,423 years).

There were correlations of meaningful significance with the variables for dwellings with no motor vehicle (0.68), unemployment (0.50) and low income families (0.50). These results, together with the inverse correlation of meaningful significance with the IRSD (-0.51), indicate an association at the small area level between high rates of premature death (of people aged from 15 to 64 years) and socioeconomic disadvantage.

Gold Coast-Tweed Heads

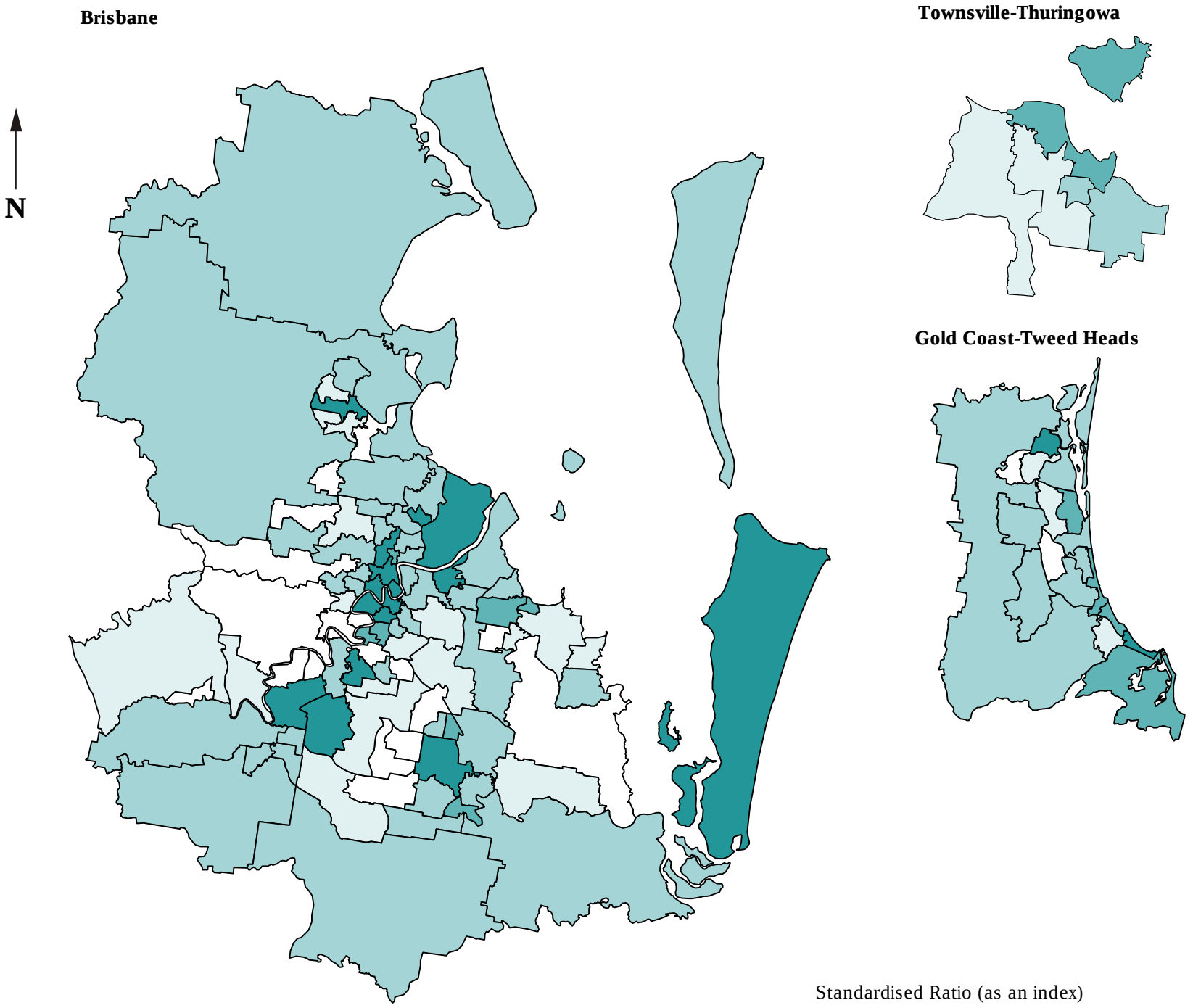
There were 52,563 YPLL recorded for residents of **Gold Coast-Tweed Heads**, one per cent fewer than were expected from the State rates (an SR of 99**). Hope Island, Coolangatta/Tugun, Labrador/Southport, Broadbeach/Burleigh Heads, Palm Beach/Currumbin and Tweed Heads, all recorded SRs above the level expected, ranging from 191** to 115**. Carrara-Merrimac had the lowest SR of 61**, followed by Oxenford (66**).

Townsville-Thuringowa

There were five per cent fewer YPLL in **Townsville-Thuringowa** than expected from the State rates, an SR of 95** (18,645 years). The highest SR, of 128**, was recorded in Townsville Coastal/Magnetic Island, while the lowest SR was recorded in Thuringowa [Part A] (76**).

Map 5.21: Deaths of people aged 15 to 64 years: years of potential life lost, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1992 to 1995

Standardised Ratio: number of years of potential life lost in each area* compared with the number expected#



*Most SLAs have been grouped to approximate postcode areas

#Expected numbers were derived by indirect age-sex standardisation, based on Queensland totals

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Deaths of people aged 15 to 64 years: years of potential life lost, 1992 to 1995

State/Territory comparison (Australia as the Standard)

All of the *Rest of State/Territory* areas in **Table 5.29** had higher standardised ratios (SRs) for years of potential life lost (YPLL) than were calculated for the capital cities. The largest differential was in the Northern Territory, with more than twice the SR in the *Rest of State/Territory* areas than was calculated for **Darwin**; the next highest differential was in Western Australia. In contrast to the male and female rates recorded in the metropolitan areas, male rates (113**) were generally above those recorded for females (111**), with the exceptions being Queensland, the Northern Territory and Tasmania.

Table 5.29: Deaths of people aged 15 to 64 years; years of potential life lost, State/Territory, 1992 to 1995
Standardised ratios

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
Capital city	98**	90**	94**	96**	89**	108**	137**	81**[1]	94**
Other major urban centres[2]	104**	108**	97**	..	..	..	..	..	102**
Rest of State/Territory	112**	102**	109**	112**	118**	117**	278**	–[3]	113**
Whole of State/Territory	102**	94**	101**	100	97**	113**	210**	79**	100
Rest of State/Territory									
Males	114**	103**	108**	112**	119**	117**	273**	–[3]	113**
Females	108**	102**	110**	112**	117**	117**	287**	–[3]	111**

[1] Includes Queanbeyan (C)
[2] Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Rest of State (Queensland as the Standard)

There were 236,030 YPLL as a result of deaths of residents of the non-metropolitan areas of Queensland aged from 15 to 64 years over the years from 1992 to 1995, eight per cent more than were expected from the State rates (an SR of 108**). Males accounted for nearly two thirds (63.4 per cent) of these years of potential years lost, a total of 149,670 years.

Several SLAs had ratios in the highest range mapped, the highest in the SLA of Aurukun with more than ten times the number of YPLL that were expected from the State rates (an SR of 1045**). Highly elevated ratios of at least twice the level expected were recorded in the SLAs of Mornington (an SR of 600**), Burke (555**), Carpentaria (346**), Torres (286**), Boulia (283**), Croydon (279**), Cook (277**), Murgon (254**), Mulgrave [Part B] (253**) and Aramac (205**). As can be seen from **Map 5.22**, a large proportion of the northern region of the State was mapped in the highest range.

In total, 85 SLAs were mapped in the middle range, with ratios within 30 per cent of the level expected. Within this range, 27 per cent more YPLL were recorded in Roma, and 27 per cent fewer were recorded in Nebo.

Only 12 SLAs had ratios mapped in the two lowest ranges, all of which were highly significant. In areas where there were more than 20 YPLL, Bungil (located in the south-west) recorded the lowest ratio of 39**, indicating that there were 61 per cent fewer YPLL than were expected. Also mapped in the two lowest ranges were the SLAs of Bauhinia (53**), Fitzroy [Part A] (57**), Cambooya (57**), Rosenthal (58**), Bulloo (58**), Belyando (60**), Caboolture [Part B] (62**) and Warroo (66**).

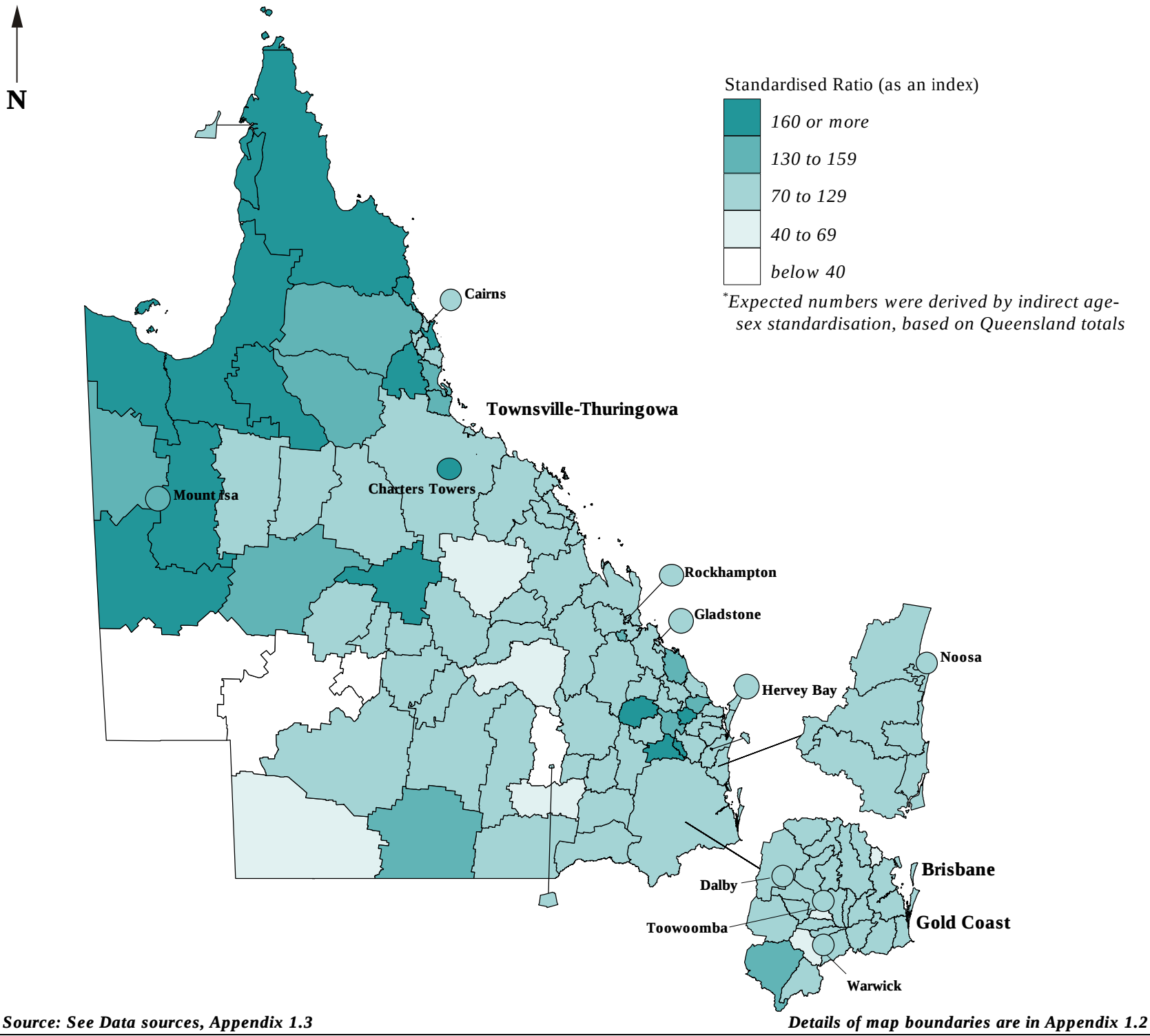
The most notable differences recorded between the ratios for males and females were in Boulia and Croydon, where the ratio recorded for females was zero and the male ratios were 409** and 431**, respectively. In contrast, female ratios were substantially higher in Mornington (1258** compared to 291**), Aurukun (1342** compared to 904**) and Burke (782** compared to 455**).

The greatest impact of premature death (when measured by YPLL by the population aged from 15 to 64 years) was recorded for residents of the towns of Cairns (17,145 years), Toowoomba (12,965 years), Bundaberg/Burnett (11,039 years), Maroochy [Part A] (10,474 years) and Rockhampton (9,376 years).

There were correlations of substantial significance with the variables for Indigenous people (0.85), dwellings with no motor vehicle (0.84) and single parent families (0.73). These results, together with the inverse correlation of substantial significance with the IRSD (-0.80), indicate an association at the SLA level between high rates of premature death (of people aged from 15 to 64 years) and socioeconomic disadvantage.

Map 5.22: Deaths of people aged 15 to 64 years: years of potential life lost, Queensland, 1992 to 1995

SR: number of years of potential life lost in each Statistical Local Area compared with the number expected*



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

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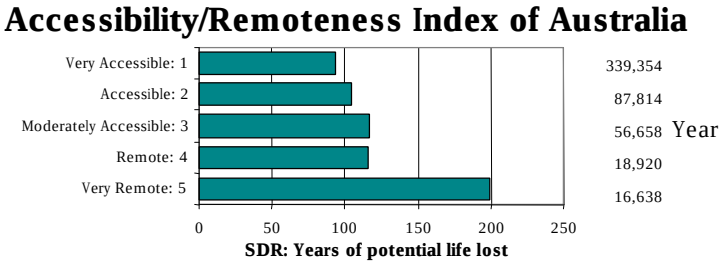

The ARIA graph of years of potential life lost provides a summary measure of the impact of premature deaths over the years from 1992 to 1995. The lowest standardised ratio is in the Very Accessible areas (an SDR of 93) and the most substantial increase occurs between the Moderately Accessible category (117) and the Very Remote category (199), where the impact of Indigenous deaths is likely to be an important influence in the high ratios.

Source: Calculated on ARIA classification, DHAC

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The information on these four pages provides summary details for variables where it was considered that there were too few cases to map the data at the SLA level. Where SLA data is available it is in the tables in Volume 4.1.

Infant deaths, 1992 to 1995

State/Territory comparison

The infant death rate is calculated as the number of infant deaths (deaths under one year of age) per 1,000 live births. The rate varied between the States and Territories, from a high of 13.9 in the Northern Territory to less than half that level in a number of States and the Australian Capital Territory. Rates in the *Rest of State/Territory* areas were similarly highest in the Northern Territory and were higher than the capital city rates for all but Queensland (where they were the same) and Tasmania (where they were lower).

Infant death rates in the *Rest of State/Territory* areas were 26.7 per cent lower over the years from 1992 to 1995 than over the years from 1985 to 1989 (**Table 5.30**). The largest reductions occurred in the non-metropolitan areas of Tasmania (down by 46.7 per cent) and the smallest in the Northern Territory (down by 10.4 per cent). Western Australia (22.8 per cent) and Queensland (24.4 per cent) experienced the next smallest reductions, with declines of around one third occurring in the remaining States.

Table 5.30: Infant deaths, State/Territory
Infant deaths per 1,000 live births

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1992 to 1995									
Capital city	6.1	5.2	6.7	5.2	5.3	7.5	10.3	5.9[1]	5.8
Other major urban centres[2]	6.4	4.6	7.1	..	..	..	..	..	6.2
Rest of State/Territory	7.1	5.4	6.7	5.9	7.1	5.7	16.3	–[3]	6.8
Whole of State/Territory	6.4	5.3	6.8	5.4	5.9	6.4	13.9	5.1	6.2
1985 to 1989[4]									
Rest of State/Territory	9.3	8.3	9.0	9.0	9.2	10.7	18.2	–[3]	9.3

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
[4]For 1985-89 the rate was calculated per 1,000 children aged under 12 months plus infant deaths: this approximates live births
Source: See *Data sources*, Appendix 1.3

Although Aboriginal infant mortality has generally improved, rates remain high. The Australian Institute of Health and Welfare (1998) has published estimates of infant death rates in the Indigenous populations of SA, WA and NT, the only States and Territory with reliable data. In 1991-96 infant death rates were 19.2 per 1,000 live births in the Indigenous population compared to 6.1 per 1,000 in the non Indigenous population. The high rates for Aboriginal and Torres Strait Islander people are likely to influence the regional rates in areas with very high proportions of Aboriginal people in the population, in particular the remote areas of Australia.

Rest of State

Over the four year period 1992 to 1995, there were 565 infant deaths recorded in the non-metropolitan areas of Queensland, representing 6.9 infant deaths per 1,000 live births.

The far northern region of Cape York generally recorded the highest percentages, with Cook, Carpentaria, Hinchinbrook, Cardwell and Torres recording 27.5, 22.0, 14.1, 12.6 and 12.5 infant deaths per 1,000 live births respectively. The next highest rates were found to the north-west of **Brisbane**, in Murgon (20.6) and Nanango (14.9).

The lowest rates were found on the Sunshine coast in the SLAs of Maroochy [Part A], with 3.5 infant deaths per 1,000 live births and Caloundra [Part A], with 3.8 infant deaths per 1,000 live births.

Residents of Toowoomba recorded the largest number of infant deaths in the non-metropolitan areas of Queensland (37 deaths). More than 20 infant deaths were also recorded in Cairns, with 34 deaths; Rockhampton, with 31 deaths; and Mackay [Part A], with 26 deaths.

The correlation analysis was not undertaken as there were too many SLAs with small numbers of cases.

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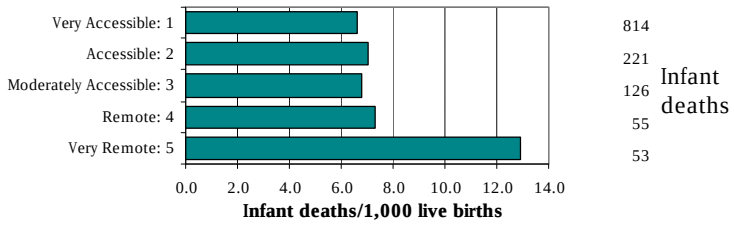

Infant death rates were highest in the Very Remote ARIA category (12.9 infant deaths per 1,000 live births), although with just 53 infant deaths in this four year period. The other rates ranged from 6.6 in the Very Accessible category to 7.3 in the Remote areas. The very high figure in the most remote areas is likely to reflect the high infant death rates among Indigenous Australians.

Source: Calculated on ARIA classification, DHAC

Deaths of people aged 15 to 64 years from lung cancer, 1992 to 1995

State/Territory comparison (Australia as the Standard)

The highest Standardised Death Ratio (SDR) for deaths from lung cancer of people aged from 15 to 64 years in the *Rest of State/Territory* areas was recorded in the Northern Territory (an SDR of 258**). Apart from the relatively low ratio in South Australia (an SDR of 84*), the other State all had SDRs within 10 per cent of the level expected from the Australian rates. At the *Whole of State/Territory* level, only the Northern Territory (214**) had substantially more deaths from lung cancer than expected from the Australian rates.

Most States had similar differentials (from the Australian rates) in the SDR recorded for their non-metropolitan areas in the later period shown in **Table 5.31**. The major exception is the Northern Territory, with a markedly higher SDR (suggesting an increase in death rates relative to the Australian experience) between the periods analysed.

Table 5.31: Deaths of people aged 15 to 64 years from lung cancer, State/Territory
Standardised death ratios

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1992 to 1995									
Capital city	102	94*	103	95	90*	120	164**	77*[1]	98*
Other major urban centres[2]	105	125	104	..	..	..	..	..	107
Rest of State/Territory	106	100	99	84*	96	107	258**	–[3]	102
Whole of State/Territory	104	97	102	92*	92*	113	214**	80*	100
1985 to 1989									
Rest of State/Territory	100	98	99	83**	94	112	165**	–[3]	99

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

In the non-metropolitan areas of Queensland**,** 18.8 per cent of all cancer deaths were from cancers of the trachea, bronchus and lung (referred to as lung cancer). This was a minor cause of death in the non-metropolitan areas, accounting for 5.0 per cent of deaths at all ages; 4.6 per cent of deaths of people aged 65 years and over; and 6.7 per cent of all deaths before age 65.

Rest of State (Queensland as the Standard)

In the four year period from 1992 to 1995, there were 576 lung cancer deaths of 15 to 64 year old people recorded in the non-metropolitan areas of Queensland, two per cent fewer deaths than expected from the State rates (an SDR of 98).

Residents of Gladstone recorded the highest ratio, with 90 per cent more premature lung cancer deaths than expected from the State rates (an SDR of 190**). Elevated ratios were also recorded in Mackay [Part A] (with an SDR of 139), Mount Isa (137) and Maryborough/Woocoo (132).

Bowen had the lowest ratio in the non-metropolitan areas of Queensland, with an SDR of 18* (and one death when six were expected). There were 63 per cent fewer deaths than expected in Gympie (an SDR of 37; and 2 deaths) and 52 per cent fewer in Banana (48; and 3 deaths).

The largest numbers of premature lung cancer deaths were recorded for Toowoomba (with 37 deaths), Cairns (33 deaths) and Mackay [Part A] and Maroochy [Part A] (both with 31 deaths).

The correlation analysis was not undertaken, as there were too many SLAs with small numbers of cases.

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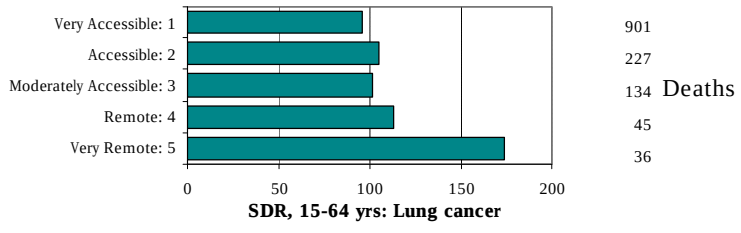

The SDRs for deaths from lung cancer in the three 'accessible' ARIA categories are all close to the level expected from the State rates (with the only ratio below the level expected in the Very Accessible category (an SDR of 96)). SDRs are elevated in the Remote areas (an SDR of 113), and highly elevated in the Very Remote category (174) with almost one and three quarter times the level expected from the State rates.

Source: Calculated on ARIA classification, DHAC

Deaths of people aged 15 to 64 years from respiratory system diseases, 1992 to 1995

State/Territory comparison (Australia as the Standard)

Residents of the non-metropolitan areas of all States and the Northern Territory had higher Standardised Death Ratios (SDRs) from diseases of the respiratory system than those living in the capital cities. The largest differentials were in the Northern Territory, Tasmania and Western Australia, with the Northern Territory also recording the highest non-metropolitan ratio, an exceptionally high SDR of 908**. There were differences in the SDRs for the two periods shown in **Table 5.32** for all but Victoria; the higher SDRs in the later period for Tasmania, the Northern Territory, South Australia and Western Australia suggest a worsening (relative to the Australian rates) in the death rates from these causes.

Table 5.32: Deaths of people aged 15 to 64 years from respiratory system diseases, State/Territory
Standardised death ratios

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1992 to 1995									
Capital city	94	79**	98	87*	64**	115	193**	79[1]	87**
Other major urban centres[2]	112	90	75**	..	..	..	..	..	98
Rest of State/Territory	116**	111*	118**	123*	134**	133**	908**	–[3]	128**
Whole of State/Territory	102	88**	104	97	82**	125**	511**	76	100
1985 to 1989									
Rest of State/Territory	127**	111*	129**	98	115	93	805**	–[3]	124**

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

There were 2,654 deaths from diseases of the respiratory system over the period from 1992 to 1995 in the non-metropolitan areas of Queensland, 7.6 per cent of all deaths. The majority of these deaths (82.2 per cent, 2,182 deaths) were of people aged 65 years and over, with 16.5 per cent of deaths being of people aged from 15 to 64 years. Deaths from these causes represented 14 per cent of all deaths for this age group.

Rest of State (Queensland as the Standard)

There were 437 deaths of non–metropolitan residents aged from 15 to 64 years, 14 per cent more deaths from respiratory system diseases than were expected from the State rates. Almost two thirds (64.3 per cent) were males.

Elevated ratios of statistical significance were recorded in Mareeba (with an SDR of 220**) and Mount Isa (205*), both with more than twice the number of premature deaths from respiratory system diseases than expected from the State rates.

Although not statistically significant, there were elevated rates of premature death from respiratory system diseases in the SLAs of Cairns, Mackay [Part A], Bundaberg/Burnett, and Toowoomba.

The SLA of Beaudesert [Part B] had the only low ratio of statistical significance, with an SDR of 15* (and one death from respiratory system diseases when seven were expected). Maroochy [Part B] and Noosa, on the south-east coast; Johnstone, in the north-west; and Livingstone, on the east coast; all recorded SDRs of 40 per cent or more lower than expected from the Queensland rates.

The largest numbers of deaths were recorded in the SLAs of Cairns (29 deaths), Toowoomba (26 deaths), Bundaberg/Burnett (24 deaths) and Maroochy [Part A] (21 deaths).

The correlation analysis was not undertaken as there were too many SLAs with small numbers of cases.

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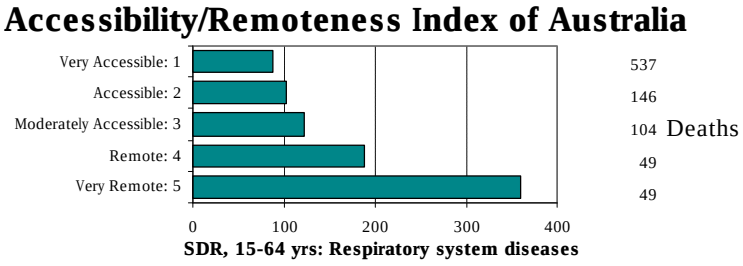

SDR, 15-64 yrs: Respiratory system diseases

Death rates of people aged from 15 to 64 years from respiratory system diseases rise markedly in line with increasing remoteness across the ARIA categories. They range from an SDR of 87 in the Very Accessible areas to an SDR of 360 in the Very Remote category. The next highest SDR was 189 in the Remote category. The highly elevated SDRs in the remote categories are likely to reflect the high premature death rates experienced by Indigenous people.

Source: Calculated on ARIA classification, DHAC

Deaths of people aged 15 to 24 years from accidents, poisonings and violence, 1992 to 1995

State/Territory comparison (Australia as the Standard)

Residents of the non-metropolitan areas of all States and the Northern Territory had higher Standardised Death Ratios (SDRs) from the external causes of accidents, poisonings and violence than those living in the capital cities. In all cases the differentials were substantial, with the largest being in the Northern Territory, Western Australia and South Australia: the Northern Territory also had the highest non-metropolitan SDR, of 267**.

The main differences from the Australian rates in the SDRs for the two periods shown in **Table 5.33** were in the ratios for Western Australia and the Northern Territory, with the higher SDRs in the later period suggesting a worsening, relative to the Australian rates, in the death rates from these causes.

Table 5.33: Deaths of people aged 15 to 24 years from accidents, poisonings and violence, State/Territory
Standardised death ratios

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
1992 to 1995									
Capital city	76**	78**	104	85**	97	127*	124	65**[1]	84**
Other major urban centres[2]	89	94	110	..	..	..	..	..	98
Rest of State/Territory	127**	123**	136**	158**	188**	144**	267**	–[3]	140**
Whole of State/Territory	89**	89**	117**	102	120**	137**	202**	66**	100
1985 to 1989									
Rest of State/Territory	135**	132**	132**	146**	139**	130**	235**	–[3]	136**

[1] Includes Queanbeyan (C)
[2] Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3
Statistical significance: * significance at 5 per cent; ** significance at 1 per cent

Over the four year period from 1992 to 1995, there were 515 deaths of people aged from 15 to 24 years from this group of external causes in the non-metropolitan areas of Queensland. This was a rate of 66.0 per 100.000 population, higher than the **Brisbane** rate of 50.5 per 100,000 population. Although this was a relatively small number of deaths, they accounted for 78.5 per cent of all deaths in this age group - 83.2 per cent of male deaths and 58.2 per cent of female deaths. The data analysed for this variable represented 18.9 per cent of all deaths from this cause.

Rest of State (Queensland as the Standard)

There were 515 deaths of residents aged from 15 to 24 years of the non-metropolitan areas of Queensland from the combined causes of accidents, poisonings and violence, This was 16 per cent more deaths than expected from the Queensland rates (an SDR of 116**).

Beaudesert [Part B], Livingstone, Mount Isa, and the combined areas of Burdekin/Dalrymple/Thuringowa/Townsville all had ratios of premature deaths from accidents, poisonings and violence elevated by 50 per cent or more. Beaudesert [Part B], located in the south-east, had the highest SDR, with 85 per cent more deaths than expected from the State rates (an SDR of 185*; and 11 deaths). Livingstone (with an SDR of 181*; and 12 deaths), Mount Isa (173*; and 17 deaths) and the combined areas of Burdekin/Dalrymple/Thuringowa/Townsville (159; and 17 deaths) also had highly elevated ratios.

Of SLAs mapped in the middle range (within 30 per cent of the level expected from the State rates), Cairns (with an SDR of 112), Hinchinbrook (112), Caloundra [Part A] (111), Gladstone (108), and Bundaberg/Burnett (107) all recorded more deaths than expected. The lowest ratios in this range were in Rockhampton and Maryborough/Woocoo, with SDRs of 72 and 84 respectively.

The lowest ratio was recorded for residents aged from 15 to 24 years in Noosa, with 80 per cent fewer premature deaths from accidents. poisonings, and violence than were expected from the State rates (an SDR of 20, with one death when five were expected). Fewer deaths than expected were also recorded in Maroochy [Part A] (an SDR of 59*), Gatton (59) and Toowoomba (67*).

Cairns (40 deaths) and Toowoomba (25 deaths) recorded the largest numbers of premature deaths of young adults from these external causes. The correlation analysis was not undertaken as there were too many SLAs with small numbers of cases.

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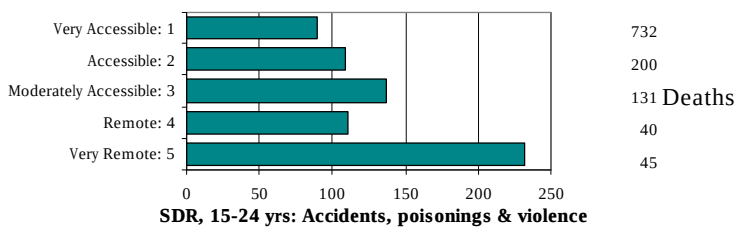


The differences across the ARIA categories in SDRs for accidents, poisonings and violence among 15 to 24 year olds are similar to those for the 15 to 64 year age group. There were more than two and a half times the number of deaths in the Very Remote category than were expected from the State rates (an SDR of 232) when compared with the Very Accessible category (89). The highest of the other ratios was in the Moderately Accessible category (an SDR of 137). The influence of Indigenous deaths is likely to be an important influence in the high ratios in the Very Remote areas.

Source: Calculated on ARIA classification, DHAC

Total Fertility Rate

Introduction

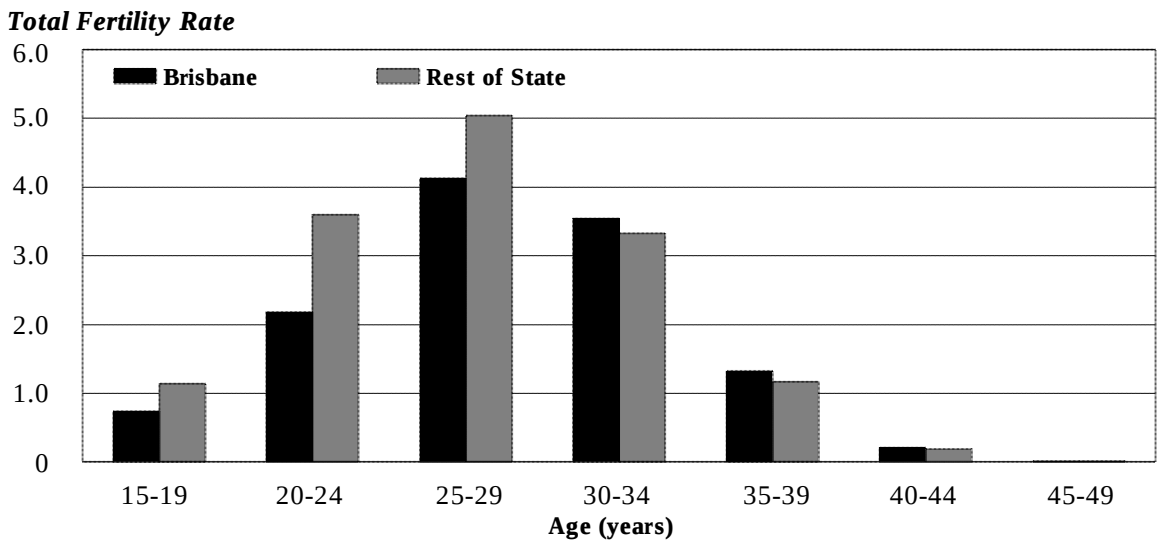
The Total Fertility Rate (TFR) is a measure of the production of children and is calculated from details of the age of the female population, the number of live births and the age of the mother at birth. It represents the mean number of children which females, living right through their child-bearing period, will (on average) bear, if they are subject to the fertility conditions holding in a particular area during the given period.

A TFR of 2.11 is the level at which a population replaces itself over the long term – ie. each woman has, on average, 2.11 births. In order to keep the ranges as simple as possible, the distribution mapped here has been split at 1.5 or 2.0 (and at intervals of 0.5 above and below), rather than at the replacement level figure of 2.11.

Details of the TFR are included in this chapter (rather than in Chapter 3 with the other demographic variables) because they have been compiled on the same boundaries as other data in this chapter. Common boundaries are important in enabling the correlation and cluster analysis to be undertaken, and to enhance the value of the maps in highlighting associations in the patterns of distribution.

The highest Total Fertility Rates (TFRs) in Queensland are those for females aged from 25 to 29 years living in areas outside **Brisbane** (**Figure 5.10**). Females aged from 25 to 29 years and living in **Brisbane**, as well as those aged from 20 to 24 years and living in the non-metropolitan areas of Queensland, and those aged from 30 to 34 years, regardless of residence, had the next highest TFRs. The largest difference in TFRs between residents of **Brisbane** and the rest of Queensland was in the 20 to 24 year age group.

Figure 5.10: Total Fertility Rates, Brisbane and Rest of State, 1992 to 1995



Source: See *Data sources*, Appendix 1.3

Total Fertility Rate, 1992 to 1995

Capital city comparison

The capital cities recorded similar Total Fertility Rates (TFRs) over the four years from 1992 to 1995 (**Table 5.34**), with the exception of a higher rate in **Darwin** (2.06). The lowest TFR was that in **Adelaide** (1.64).

Table 5.34: Total Fertility Rate, capital cities, 1992 to 1995

Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra[1]	All capitals
1.81	1.70	1.73	1.64	1.76	1.79	2.06	1.72	1.75

[1]Includes Queanbeyan (C)
Source: See *Data sources*, Appendix 1.3

Areas with fewer than 20 births over this four year period have been excluded from the analysis.

Brisbane

The TFR for females in **Brisbane** over the four years from 1992 to 1995 was 1.73, slightly lower than the State rate of 1.86. The highest rates were recorded for females aged from 25 to 29 years (a TFR of 4.13), followed by those aged from 30 to 34 years (a TFR of 3.54) (see **Figure 5.10**, previous page).

The majority of areas in **Brisbane** had TFRs of between 1.50 and 2.00, with only two areas with rates in the highest range (greater than 2.50) and five in the lowest (lower than 1.00).

Map 5.23 shows that areas with high rates of total fertility are located in the outer northern and southern parts of **Brisbane**, with the highest TFRs recorded in Pinkenba-Eagle Farm (with a rate of 3.16) and Carole Park (with a rate of 2.76). The southern areas of Loganlea (2.37), the combined area of Inala/ Durack/Doolandella-Forest Lake/Ellen Groves/Richlands (2.34), Greenbank [Part B]/Waterford West (2.29) and Marsden (2.27) also had high TFRs.

Just under half (47.2 per cent) of the areas in **Brisbane** had rates of between 1.50 and 1.99. TFRs in this class interval were generally distributed just to the north and south of the Brisbane River, with the highest rates recorded in Tingalpa (a TFR of 1.99), Northgate (1.98), Anstead/Bellbowrie/Moggill and Strathpine (both with 1.97) and in the areas from Bracken Ridge to Sandgate (1.96).

However, areas located in the inner city region generally reported the lowest TFRs, with Albion recording 0.96, Herston/Newstead with 0.95 and St Lucia and New Farm, both with a TFR of 0.85. Capalaba West, with a TFR of 0.70 and the combined area of City/Spring Hill, with a TFR of 0.56, had the lowest rates of total fertility in **Brisbane**.

Over the four year period from 1992 to 1995, there were 82,300 births to mothers aged from 15 to 49 years, with the largest numbers being in Caboolture [Part A] (5,763 births), Ipswich (5,518), and Berrinba-Karawatha/Kingston (2,597). There were fewer than 50 births recorded for females of these ages and resident in the combined area of Chandler/Capalaba West (49 births), in Pinkenba-Eagle Farm (28) and in Moreton Island (3).

As would be expected, there was a strong association between high TFRs and the variable for children aged from 0 to 4 years (a correlation of substantial significance, of 0.73). There was also a correlation of substantial significance at the small area level with the variable for early school leavers (0.76), and of meaningful significance with unskilled and semi-skilled workers (0.66). An inverse correlation of substantial significance was recorded with managers and administrators, and professionals (-0.72). These results, together with the inverse correlation with the IRSD (-0.47), support the existence of an association at the small area level between high Total Fertility Rates and socioeconomic disadvantage.

Gold Coast-Tweed Heads

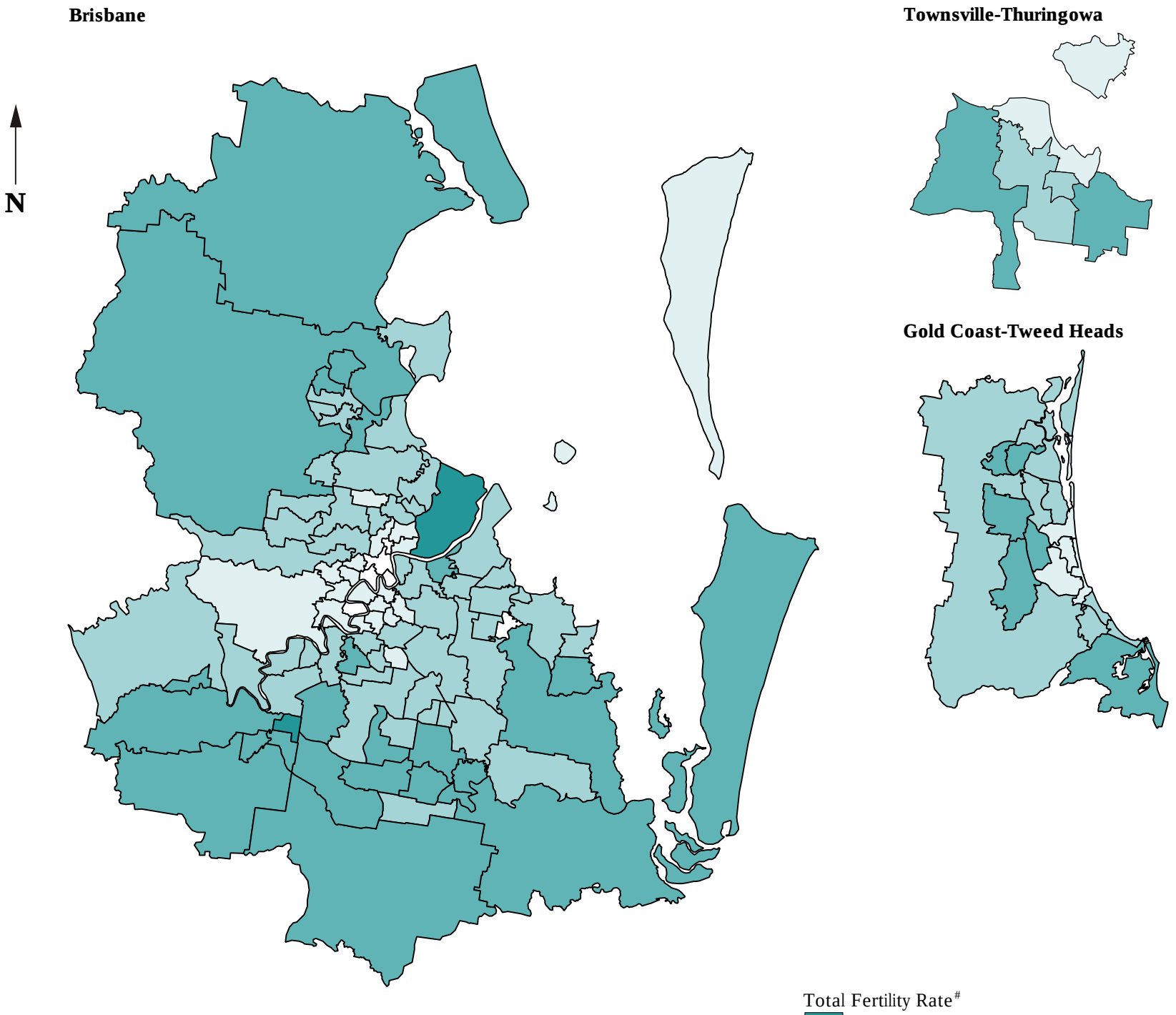
Females in the major urban centre of **Gold Coast-Tweed Heads** had a TFR of 1.71 over the years from 1992 to 1995. The highest rates were recorded in the inner areas of Nerang (with a TFR of 2.16) and Worongary-Tallai/Mudgeeraba and Oxenford (both with a TFR of 2.11). The coastal areas of Surfers Paradise/Benowa (with a TFR of 1.15), Broadbeach/Mermaid Waters (1.3) and Broadbeach/Burleigh Heads (1.38) recorded the lowest Total Fertility Rates.

Townsville-Thuringowa

The Total Fertility Rate in **Townsville** over the years from 1992 to 1995 was 1.81, the highest among the major urban centres outside of the capital city. Rates of above 2.00 were recorded in both Townsville South East (2.20) and Thuringowa [Part A] (2.04), while the combined areas of Townsville Coastal/Magnetic Island recorded the lowest TFR, of 1.45.

Map 5.23: Total Fertility Rate*, Brisbane, Gold Coast-Tweed Heads and Townsville-Thuringowa, 1992 to 1995

Total Fertility Rate* in each area#



*Most SLAs have been grouped to approximate postcode areas

#The Total Fertility Rate is a measure of the number of children a woman can expect to bear in her lifetime: it was derived by indirect age standardisation, based on Queensland totals

Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

National Social Health Atlas Project, 1999

Total Fertility Rate, 1992 to 1995

State/Territory comparison

The Total Fertility Rates (TFRs) were higher in the non-metropolitan areas of Australia in each State and the Northern Territory (**Table 5.35**). The Northern Territory had the highest non-metropolitan rate, as did **Darwin** among the capital cities, although there was less difference between the rates than was evident for the capital cities. The lowest non-metropolitan TFRs were in Tasmania (2.06) and Queensland (2.07). At the *Whole of State/Territory* level, the Northern Territory again had the highest rate and the Australian Capital Territory and South Australia had the lowest rates.

Table 5.35: Total Fertility Rate, State/Territory, 1992 to 1995

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
Capital city	1.81	1.70	1.73	1.64	1.76	1.79	2.06	1.72[1]	1.75
Other major urban centres[2]	1.91	1.86	1.73	..	..	..	..	..	1.84
Rest of State/Territory	2.24	2.15	2.07	2.12	2.22	2.08	2.66	–[3]	2.16
Whole State/Territory	1.91	1.79	1.86	1.75	1.87	1.95	2.38	1.69	1.86

[1]Includes Queanbeyan (C)
[2]Includes Newcastle and Wollongong (NSW); Geelong (Vic); and Gold Coast-Tweed Heads and Townsville-Thuringowa (Qld)
[3] Data included with ACT total
Source: See *Data sources*, Appendix 1.3

Rest of State

The Total Fertility Rate (TFR) for females in the non metropolitan areas of Queensland over the four year period from 1992 to 1995 was 2.07, above the **Brisbane** rate of 1.73. The highest TFRs were recorded for women aged from 25 to 29 years (a TFR of 5.04), followed by those aged from 20 to 24 years (a TFR of 3.60) (**Figure 5.10**, page 175).

As many of the TFRs are high, the ranges mapped have been changed to enhance the pattern of differentiation in the map. The highest and lowest ranges have been set at greater than 3.00 and less than 1.50 respectively, rather than 2.50 and 1.00 as in the map for **Brisbane** for this variable.

There was no particular pattern in the spatial distribution of TFRs across the State (**Map 5.24**). The highest rates were recorded in the SLAs of Isisford (a TFR of 6.00), located in the central west; Perry (a TFR of 4.67) and Eidsvold (a TFR of 3.49), just north of **Brisbane**; and Jericho (a TFR of 3.36), situated north-west of the city. Relatively high rates were also found in Croydon (3.83), Torres (3.24), Cook (3.11), Burke (3.04), Booringa (3.02) and Murgon (3.01).

Generally speaking, there was little variation in TFRs across the areas mapped, with almost half (49.6 per cent) of the SLAs with rates of between 2.00 and 2.50. The highest rates in this range were in the SLAs of Flinders (with a TFR of 2.49) and Winton and Rosalie (both 2.46). Nanango (with a TFR of 2.00), Widgee (2.02) and Kilkivan (2.02) had the lowest values in this range.

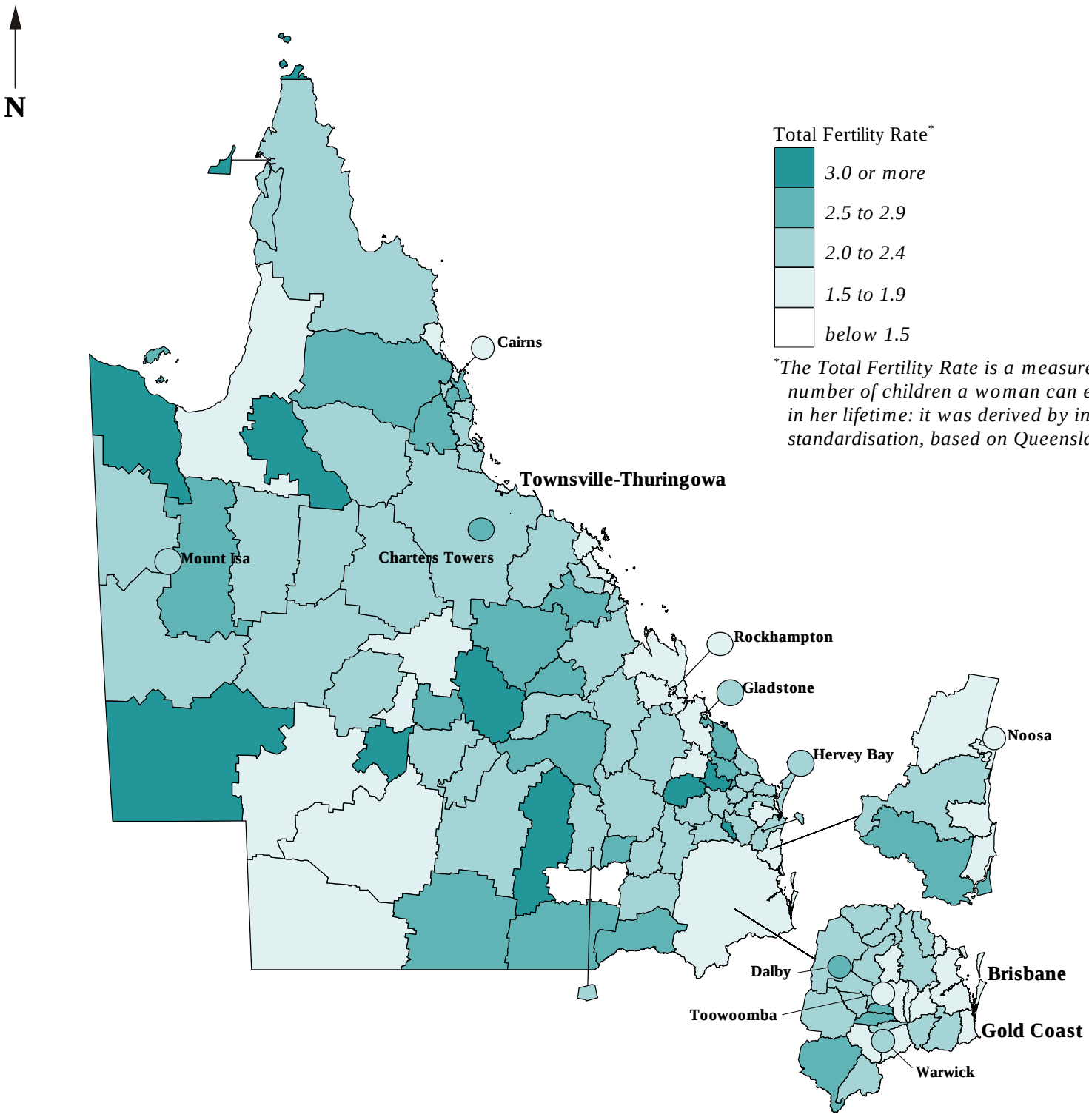
Warroo, with the lowest rate (a TFR of 1.30) was the only SLA mapped in the lowest range. Bulloo (with a TFR of 1.52) and Pioneer [Part B] (1.62) also recorded low TFRs.

In the non-metropolitan areas of Queensland the largest numbers of births to mothers aged from 15 to 49 years were recorded in the SLAs of Cairns, with 6,560; Toowoomba, with 4,972; Maroochy [Part A], with 3,959; Mackay [Part A], with 3,702; Bundaberg/Burnett, with 3,664; and Rockhampton, with 3,655.

There was a weak association evident in the correlation analysis at the SLA level between high Total Fertility Rates and the indicators of socioeconomic disadvantage.

Map 5.24: Total Fertility Rate*, Queensland, 1992 to 1995

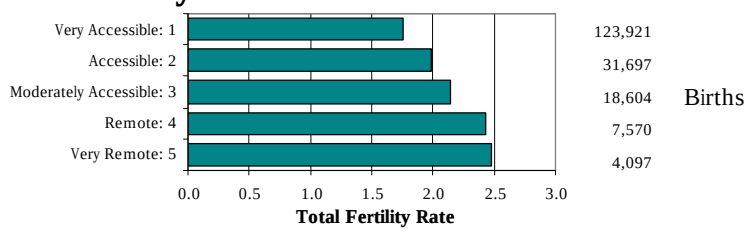
Total Fertility Rate* in each Statistical Local Area



Source: See Data sources, Appendix 1.3

Details of map boundaries are in Appendix 1.2

Accessibility/Remoteness Index of Australia



The Total Fertility Rate (TFR) increases notably across the first four ARIA categories, from a low of 1.76 in areas in the Very Accessible category to 2.43 in the Remote areas. There is a marginally higher TFR of 2.48 in the Very Remote areas.

Source: Calculated on ARIA classification, DHAC

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