AIHW
AUSTRALIAN INSTITUTE OF HEALTH & WELFARE

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bulletin

Australian health inequalities

1 Birthplace

Mortality

Generally, overseas-born persons experience all-cause death rates 10% to 15% lower than for Australian-born persons.

Asian-born immigrants have especially low death rates for colorectal and prostate cancer, respiratory causes and suicide.

Immigrants born in the United Kingdom & Ireland experience higher rates of breast and lung cancer. Some immigrant groups from Europe, the Pacific Islands and Asia also have higher diabetes mortality rates.

Hospitalisation

Overseas-born immigrants have lower hospitalisation rates for most diagnoses.

Asian-born immigrants are hospitalised more often for tuberculosis, although the annual number of cases is small. Females born in Asia also have higher rates of hospitalisation for cervical cancer.

Disability and core activity restriction

Asian-born immigrants report significantly lower rates of disability and core activity restriction.

Health risk factors

Asian-born immigrants report lower rates of overweight and obesity and medium or high risk alcohol drinking, but higher rates of inactivity. Immigrants from Other European countries also report higher rates of inactivity.

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Australian health inequalities: birthplace

Introduction

In 2000, an estimated 24% of Australians were born overseas, with more than half of these residents born in a non-English-speaking country.

Australia is an ethnically diverse nation. In 2000, an estimated 24% of Australians were born overseas, with more than half of these residents born in a non-English-speaking country. Those born in the United Kingdom & Ireland were the largest group of overseas-born (27%), followed by New Zealand (8%), Italy (5%) and Vietnam (4%) (ABS 2001).

Although immigrants come from diverse regions of the world, almost all demonstrate good, if not better, health on arrival and for some years following than does the Australian-born population. This better health is reflected in longer life expectancy, lower death and hospitalisation rates, and a lower prevalence of some lifestyle-related risk factors. This phenomenon has been explained by the 'healthy migrant effect', with health requirements and eligibility criteria ensuring that generally only those in good health migrate to Australia.

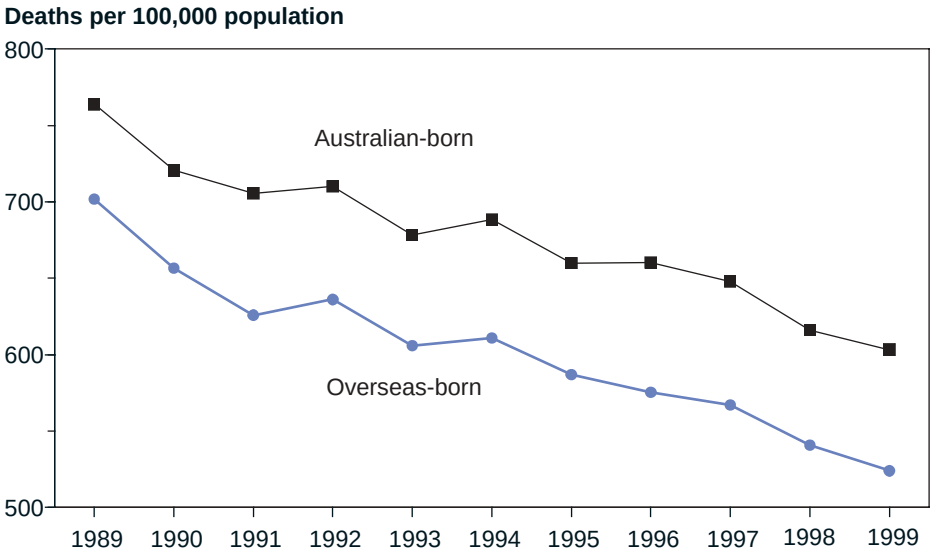
The health status of immigrants can vary according to birthplace, age, socioeconomic status, fluency in English, and satisfaction with job and life in Australia (Kliewer & Jones 1997). Immigrants have different illness patterns from Australian-born residents, enjoying advantage for many conditions and disadvantage for some others. Immigrants also bring their own particular risk factors, such as diet and cultural practices, which may affect health. The health advantage seen on arrival is known to become smaller with increasing length of residence in Australia (Young 1992).

For ease of comparison and to facilitate analysis across different data collections, this bulletin classifies birthplace into several large country groupings. These groupings were used by Mathers (1994), who combined major groups used in the Australian Standard Classification of Countries for Social Statistics (ABS 1990). The country groupings used here include the United Kingdom & Ireland, Other Europe, Asia and Other (see Abbreviations and definitions). Although there are health differences between these country groupings, it should also be born in mind that there are differences within country groupings. The health status, for example, of Maori and non-Maori New Zealanders and other Pacific Islanders varies markedly on such measures as all-cause mortality, diabetes prevalence, and overweight and obesity.

Mortality

In 1999 there were 128,000 deaths registered in Australia, comprising 92,000 Australian-born and 36,000 overseas-born persons. Overseas-born persons experienced death rates that were 10–15% lower than for Australian-born persons throughout the 1990s (Figure 1). Rates fell by over 20% for both groups over the 10-year period. By 1999, the death rate among overseas-born persons had fallen to 524 per 100,000 population, compared with 603 per 100,000 population among Australian-born persons (de Looper & Bhatia 2001).

Figure 1: Standardised mortality rates among Australian-born and overseas-born persons, 1989–1999



Recent mortality data (1997–99) indicate that migrants born in Asia have the lowest standardised mortality ratios (SMRs) for deaths from all causes compared with other birthplace groups, with rates 28% less than Australian-born males and 20% less than Australian-born females (Table 1). The three other birthplace groups also had SMRs significantly lower than those of the Australian-born. Persons born in the United Kingdom & Ireland had rates closest to those of Australian-born persons (SMR of 0.89 for males and 0.94 for females, meaning rates 11% and 6% less than the Australian rates).

Examination of specific causes of death indicates that, for most causes, overseas-born people experience lower SMRs than do Australian-born persons. People born in Asia had notably lower SMRs, especially for deaths from colorectal and prostate cancers, respiratory causes and suicide.

There are, however, a number of causes of death where mortality rates among overseas-born persons are higher than among the Australian-born population. Females born in the United Kingdom & Ireland have significantly higher rates of cancer mortality (SMR of 1.05) and, more specifically, higher rates of mortality from breast cancer (SMR of 1.12). Both males and females born in the United Kingdom & Ireland have higher rates of lung cancer (SMRs of 1.17 and 1.43 respectively). Strong et al. (1998) noted that, since current and former smokers account for a large proportion of the individuals dying from lung cancer, these smoking-related SMRs may reflect a higher level of smokers (or former smokers) in migrants from the United Kingdom & Ireland.

Table 1: Standardised mortality ratios, by cause of death, birthplace and sex, 1997–99

Cause of death (ICD-10)	Males				Females			
	UK & Ireland	Other Europe	Asia	Other	UK & Ireland	Other Europe	Asia	Other
Cancers	0.95*	0.88*	0.69*	0.85*	1.05*	0.86*	0.79*	0.95
Colorectal	0.84*	0.76*	0.54*	0.77*	0.81*	0.77*	0.64*	0.73*
Lung	1.17*	1.02	0.79*	0.87*	1.43*	0.68*	0.78*	1.07
Breast	n.a.	n.a.	n.a.	n.a.	1.12*	0.85*	0.72*	1.06
Prostate	0.82*	0.64*	0.45*	0.76*	n.a.	n.a.	n.a.	n.a.
Diabetes mellitus	0.84*	1.28*	1.36*	0.92	0.80*	1.64*	1.67*	1.28*
Cardiovascular	0.87*	0.85*	0.75*	0.86*	0.88*	0.83*	0.81*	0.90*
Coronary heart disease	0.89*	0.86*	0.75*	0.86*	0.89*	0.84*	0.76*	0.91*
Stroke	0.83*	0.83*	0.81*	0.87*	0.88*	0.78*	0.92*	0.91
Respiratory	0.93*	0.62*	0.60*	0.75*	1.08*	0.53*	0.59*	0.84*
Digestive	0.87*	0.85*	0.74*	0.69*	1.02	0.75*	0.71*	0.80*
Injury and poisoning	0.91*	0.80*	0.56*	1.05	0.85*	0.91	0.77*	1.03
Motor vehicle	0.86	0.69*	0.61*	1.02	0.92	1.01	0.86	0.93
Suicide	0.91	0.77*	0.41*	1.02	0.79*	0.99	0.70*	1.09
All causes	**0.89***	**0.83***	**0.72***	**0.86***	**0.94***	**0.82***	**0.80***	**0.90***

* Significantly different from 1.00 (Australian-born) at the 5% level.
Source: AIHW National Mortality Database.

Diabetes mellitus is another cause from which some overseas-born persons experience greater mortality. Males and females born in Other European countries had higher SMRs (1.28 and 1.64 respectively), as did males and females born in Asia (SMRs of 1.36 and 1.67). The prevalence of diabetes is high for certain immigrant groups, compared with Australian-born persons, particularly among persons of European, Pacific Islander and Asian origin (AIHW 2000). The Federation of Ethnic Communities' Councils of Australia noted that poor glycaemic control is more marked among some migrant groups, leading to a need to provide information and education for effective self-management of diabetes (FECCA 1997).

There is some evidence to indicate that inequalities in mortality between Australian-born and overseas-born persons are increasing, at least for some overseas-born populations. In 1989, the all-cause standardised mortality rate for overseas-born persons was 8% less than for Australian-born persons. By 1999, this had increased to 13% (Figure 1).

Table 2: Standardised mortality ratios for all causes of death, by birthplace and sex, 1985–87 and 1997–99

	Males aged 25–64		Females aged 25–64	
Birthplace	1985–87	1997–99	1985–87	1997–99
Australia	1.00	1.00	1.00	1.00
UK & Ireland	0.86	0.80	0.91	0.84
Other Europe	0.79	0.79	0.73	0.73
Asia	0.61	0.63	0.67	0.69
Other	0.90	0.87	0.89	0.93

Note: Ratios compiled from rates age-standardised to the Australian population at 30 June 1988.
Sources: Mathers 1994; AIHW National Mortality Database.

Mathers (1994) examined 1985–87 mortality data for persons aged 25–64 years and found significant inequalities between Australian-born and overseas-born persons. A comparison of these data with data from 1997–99 show that these inequalities have continued and that, for persons born in the United Kingdom & Ireland, they have increased (Table 2).

Hospitalisation

The pattern for hospitalisation is similar to that noted for mortality, with generally lower hospitalisation rates among overseas-born populations (Table 3), reflecting results of previous analyses (Mathers 1994; d'Espaignet & Stevenson 1992). In 1999–00, males born in the United Kingdom & Ireland or in Asia had hospitalisation rates 27% lower than for Australian-born males. Females born in Asia had rates 25% lower than for Australian-born females. The rate for females born in Other countries was closest to that for Australia-born females, but this rate was still 13% less than the Australian-born rate.

Persons born in Asia had significantly lower hospitalisation rates for a number of principal diagnoses, including all cancers, and more specifically melanoma, prostate and breast cancer, as well as mental disorders, respiratory conditions, injury and poisoning.

Hospitalisation for melanoma was markedly lower among overseas-born populations. The rate for Asian-born males was 6% of the rate for the Australian-born population. Factors such as arrival in Australia as adults after spending early years of life in countries with lower sun exposure levels, as well as skin less susceptible to sun damage in some migrant groups, are reflected in lower standardised hospitalisation ratios (SHRs) (AIHW 2000).

Table 3: Standardised hospitalisation ratios, by principal diagnosis, birthplace and sex, persons aged 15 years and over, 1999–00

Principal diagnosis (ICD-10-AM)	Males				Females			
	UK & Ireland	Other Europe	Asia	Other	UK & Ireland	Other Europe	Asia	Other
Infectious and parasitic	0.75*	0.70*	0.89*	0.89*	0.79*	0.68*	0.81*	0.90*
Tuberculosis	0.77	1.37	9.39*	2.96*	1.04	2.17*	17.89*	5.39*
Cancers	0.70*	0.72*	0.53*	0.77*	0.80*	0.77*	0.67*	0.85*
Lung	1.02	1.01	0.71*	0.90	1.29*	0.69*	0.62*	0.79*
Melanoma	0.42*	0.26*	0.06*	0.61*	0.50*	0.25*	0.15*	0.53*
Breast	n.a.	n.a.	n.a.	n.a.	0.98	0.81*	0.70*	0.97
Prostate	0.68*	0.61*	0.44*	0.80*	n.a.	n.a.	n.a.	n.a.
Cervix	n.a.	n.a.	n.a.	n.a.	0.85*	0.83*	1.42*	1.62*
Diabetes mellitus	0.69*	0.77*	0.60*	0.74*	0.58*	0.87*	0.66*	0.64*
Mental and behavioural	0.66*	0.60*	0.36*	0.61*	0.79*	0.74*	0.33*	0.70*
Cardiovascular	0.78*	0.86*	0.75*	0.87*	0.82*	0.94*	0.76*	0.88*
Coronary heart disease	0.79*	0.82*	0.82*	0.90*	0.82*	0.88*	0.79*	0.94*
Stroke	0.71*	0.88*	0.81*	0.79*	0.78*	0.88*	0.95	0.93
Respiratory	0.77*	0.74*	0.62*	0.78*	0.81*	0.62*	0.57*	0.77*
Asthma	0.65*	0.38*	0.58*	0.87*	0.68*	0.42*	0.66*	0.92
Digestive	0.78*	0.78*	0.68*	0.79*	0.82*	0.80*	0.66*	0.80*
Injury and poisoning	0.73*	0.64*	0.45*	0.79*	0.83*	0.73*	0.56*	0.81*
All diagnoses	**0.73***	**0.83***	**0.73***	**0.81***	**0.77***	**0.82***	**0.75***	**0.87***

* Significantly different from 1.00 (Australian-born) at the 5% level.
Source: AIHW National Hospital Morbidity Database.

Overseas-born populations exhibited higher rates of hospitalisation for some principal diagnoses. Asian and Other-born males and females had significantly higher rates of hospitalisation for tuberculosis, although the annual number of admissions was comparatively small. Asian and Other-born females also had higher rates of hospitalisation for cervical cancer.

A comparison of hospitalisation data for 1995–96 with data for 1999–00 shows little change over time. In 1995–96, the SHR was 0.71 for Asian-born males and 0.77 for females. In 1999–00, the corresponding figures were 0.73 for males and 0.75 for females. The greatest change was among males born in Other countries (SHR of 0.86 in 1995–96 and 0.81 in 1999–00), and among females born in the United Kingdom & Ireland (SHR of 0.82 in 1995–96 and 0.77 in 1999–00).

Disability and core activity restriction

Disabilities and core activity restrictions may be long-term outcomes of a health condition, disease or accident that can have a severe impact on the quality of life of the

affected person. More than 3.6 million people in Australia reported a disability in the 1998 ABS Survey of Disability, Ageing and Carers, and almost 80% of these were reported as restricted in their core activities.

Except for Asian-born immigrants, there is little difference in the prevalence of self-reported disability between birthplace groups (Table 4). Both males and females born in Asia reported lower rates of disability and core activity restriction. The prevalence of reported severe and profound core activity restriction was also significantly lower for females born in Asia and Other countries.

Table 4: Standardised prevalence ratios for self-reported disability and core activity restriction, by birthplace and sex, ages 15 years and over, 1998

	Males				Females			
Disability/Core activity restriction	UK & Ireland	Other Europe	Asia	Other	UK & Ireland	Other Europe	Asia	Other
Disability	0.84	0.90	0.59*	0.86	1.00	0.99	0.65*	0.97
Core activity restriction	0.99	1.02	0.74*	1.00	0.83	0.90	0.61*	0.80
Severe and profound core activity restriction	1.10	1.07	0.88	1.14	0.82	0.99	0.74*	0.76*

* Significantly different from 1.00 (Australian-born) at the 5% level.
Source: AIHW analysis of 1998 ABS Survey of Disability, Ageing and Carers.

Mathers (1994) notes that differentials in self-reported disability should be treated with caution owing to the possibility of reporting biases related to cultural and linguistic differences.

An analysis of services provided under the Commonwealth/State Disability Agreement indicates that Australian-born consumers were more likely to report intellectual disability, whereas consumers born in other countries were more likely to report acquired brain injury and physical, vision, hearing, psychiatric and neurological disabilities (AIHW 2001). It was also observed that consumers born outside Australia were more likely to be represented in older age groups. This largely reflects the age distribution of the population, with a greater proportion of overseas-born Australians than Australian-born persons aged 45 years and over. Screening of migrants may also lead to a lower incidence of some types of disability, as disabilities arising either at birth or in early developmental periods may preclude migrants from entering Australia.

Health risk factors

There are numerous social and environmental determinants of human behaviour, which, in turn, may also affect human physiology. These behavioural and physiological factors are commonly known as 'health risk factors'. These risk factors include smoking, risk alcohol drinking, poor nutrition, physical inactivity, overweight and obesity, high blood pressure and high blood cholesterol. Individually or in combination, they are associated

Inequalities in health status by birthplace, and changes in health advantage among migrants after arrival in Australia, provide insight into the effect of lifestyle-related health risk factors on health outcomes.

with increased levels of cardiovascular disease, cancer, injury and other diseases, and poorer mental health. Behavioural and physiological risk factors, unlike other risk factors such as heredity, sex and age, can be modified through reducing smoking, sensible eating and drinking, and regular physical activity.

Information from the 1995 National Health Survey indicates that these health risk factors are found to differ among overseas-born populations (Table 5). Persons born in Asia are less likely to be overweight and obese, or to drink alcohol at risk levels. They do, however, report higher levels of leisure-time physical inactivity. Females born in Asia also report low levels of smoking. In addition, Strong et al. (1998) found that females born in Asia were less likely to have regular Pap smear tests or breast examinations. This lower proportion may be reflected in their higher levels of incidence (noted by McCredie et al. 1993 in Vietnamese women in New South Wales), hospitalisation and mortality for cervical cancer.

Table 5: Standardised prevalence ratios for self-reported health risk factors, by birthplace and sex, ages 15 years and over, 1995

	Males				Females			
Health risk factor	UK & Ireland	Other Europe	Asia	Other	UK & Ireland	Other Europe	Asia	Other
Tobacco smoking	1.07	1.10	0.87	0.92	1.09	0.84	0.27*	0.97
Risk alcohol drinking	1.08	0.73	0.34*	0.83	1.19	0.46*	0.24*	0.94
Physical inactivity during leisure-time	0.89	1.38*	1.33*	0.94	0.85	1.37*	1.54*	1.09
Overweight and obesity	0.92	1.04	0.65*	1.01	0.89	1.13	0.57*	0.98
Self-reported fair/poor health	0.94	1.15	0.97	0.93	0.98	1.35*	1.06	1.22

* Significantly different from 1.00 (Australian-born) at the 5% level.
Source: AIHW analysis of 1995 ABS National Health Survey.

Females born in Other European countries reported increased physical inactivity in their leisure-time, as well as lower levels of risk alcohol drinking, and were more likely to report their health as only fair or poor. Males born in these countries were also more likely to be inactive in their leisure-time.

Health risk factor behaviour also varies between sexes within particular birthplace groups. Males born in Asia and Other European countries are more likely than females to smoke and to drink alcohol at risk levels. Females born in Asia are more likely to report leisure-time inactivity, and females born in Other European countries report only fair or poor health more often than do males.

Nutrient intake has also been found to differ among migrants from different regions of birth. The 1995 ABS National Nutrition Survey found that adults born in East Asia consumed larger amounts of protein, carbohydrate, starch and cholesterol, and smaller

amounts of fats, sugars and dietary fibre, than other adults (ABS 1998). They also consumed more provitamin A and zinc, but less calcium, than other adults. Men born in Australia consumed more energy, fats and sugars than other men. Women born in Australia, the United Kingdom & Ireland, and New Zealand consumed more fats and sugars than other women. Poor nutrition and excess intake of fats, sugars and other sources of energy can affect a number of health-related risk factors such as blood pressure, cholesterol levels, diabetes, and overweight and obesity. These, in turn, may lead to poorer health outcomes.

Conclusion

Persons born overseas generally enjoy better health than Australia-born persons do, if gauged by such measures as mortality and hospitalisation rates and the prevalence of lifestyle-related health risk factors.

These inequalities are largely explained by the 'healthy migrant effect', which ensures that, for the most part, only those migrants in good health migrate to Australia.

Inequalities in health status by birthplace, and changes in health advantage among migrants after arrival in Australia, provide insight into the effect of lifestyle-related health risk factors on health outcomes. They might also guide health professionals in targeting education, screening and other health interventions.

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Abbreviations and definitions

ABS—Australian Bureau of Statistics.

Age standardisation—A method of removing the influence of age when comparing populations with different age structures. Unless stated otherwise, all rates are directly age-standardised to the 30 June 1991 Australian population.

AIHW—Australian Institute of Health and Welfare.

Core activity restriction—Core activity restriction is identified when a person, because of a disability, needs assistance, has difficulty or uses aids with the core activities of self-care, mobility or communication. Depending on the level of assistance needed or difficulty experienced, restriction in core activities can be mild, moderate, severe or profound.

Birthplace categories—For ease of comparison, these are defined in terms of the country groups used in the Australian Standard Classification of Countries for Social Statistics (ABS 1990). These include the United Kingdom & Ireland, Other Europe (Western and Eastern Europe, the former USSR and the Baltic States), Asia (Northeast, Southeast and Southern Asia, the Middle East and Northern Africa) and Other (Southern Africa, the Americas, New Zealand and the Pacific region).

Disability—The 1998 ABS Survey of Disability, Ageing and Carers defines disability as the presence of one or more of 17 limitations, restrictions or impairments that have lasted or are likely to last for 6 months or more.

ICD-10-AM—International Classification of Diseases, 10th Revision, Australian Modification.

Inactivity—Persons who, in the 2 weeks prior to interview, undertook no walking for sport, recreation or fitness, and no moderate or vigorous exercise, are classified inactive.

Overweight and obese—Based on self-reported height and weight, persons are categorised as overweight and obese if their Body Mass Index, derived from their weight (kg) divided by the square of their height (m^2), is greater than 25.

Risk alcohol drinking—Persons whose average daily consumption of alcohol exceed 50 ml for males and 25 ml for females are at heightened risk for a number of diseases and disorders.

Self-reported fair/poor health—Respondents' perception of their general health status on a scale of 'excellent', 'very good', 'good', 'fair' or 'poor'.

Standardised Mortality Ratio (SMR) and Standardised Hospitalisation Ratio (SHR)—Measures of death or hospitalisation from a specific condition in the overseas-born population relative to the Australian-born population. The ratio for Australian-born is 1.00, and ratios that exceed 1.00 indicate a greater mortality or hospitalisation rate in that population than for the Australian-born. Likewise, ratios less than 1.00 indicate a lower rate. A ratio of 1.13 among an overseas-born population indicates a rate that is 13% higher than the Australian rate.

Tobacco smoking—Persons who are current smokers.

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AIHW Cat. No. AUS 27

ISSN 1446-9820

ISBN 1 74024 188 6

Suggested citation

AIHW: Singh M & de Looper M 2002. Australian health inequalities: 1 birthplace. Bulletin no. 2. AIHW Cat. No. AUS 27. Canberra: AIHW.

Australian Institute of Health and Welfare

Published by the Australian Institute of Health and Welfare

Printed by Picton Press