



Asthma in Australia
with a focus chapter on
chronic obstructive pulmonary disease
2011



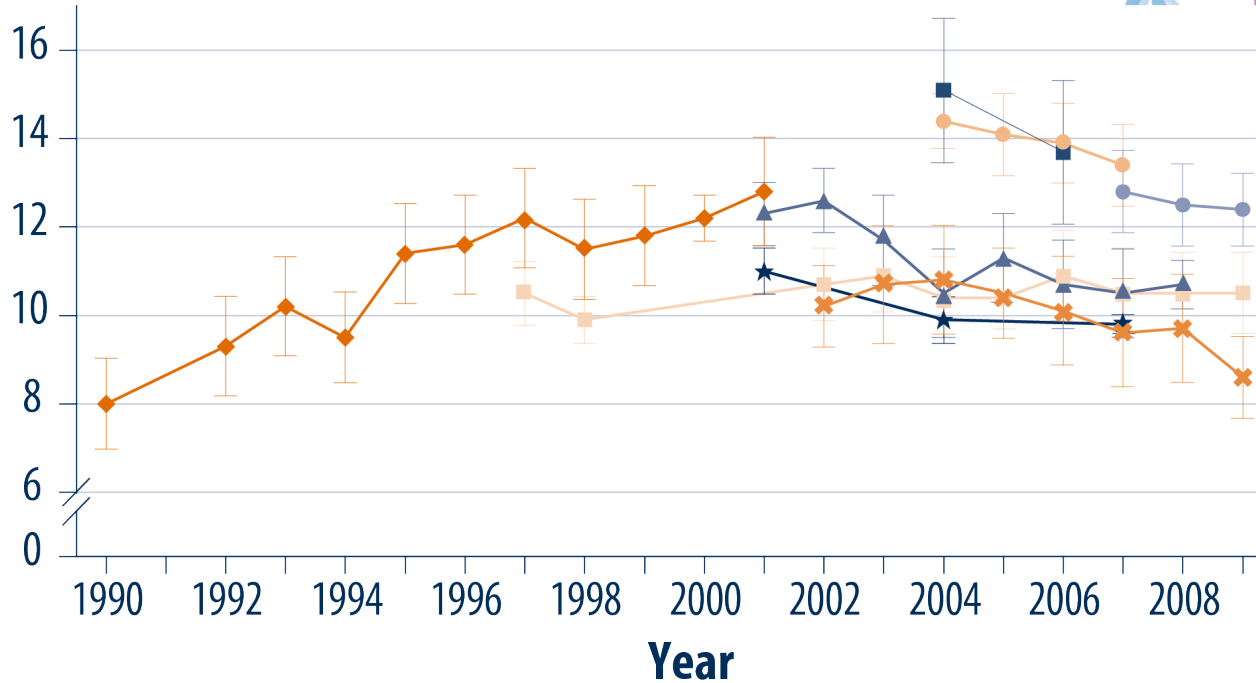
Chapter 2

Prevalence, incidence and natural history

Time trends in prevalence of asthma, adults



Proportion (per cent)

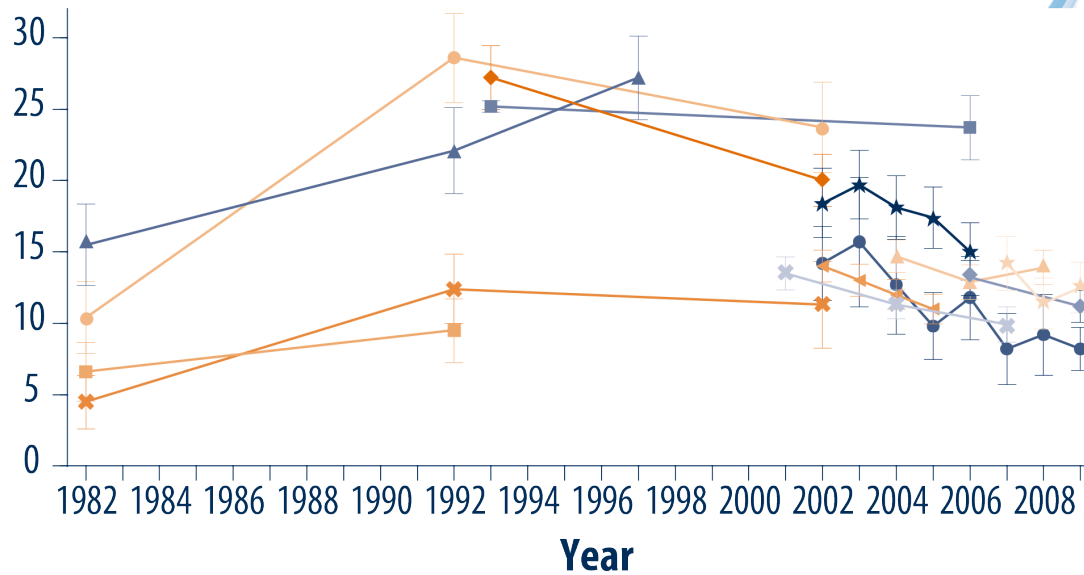


- (1) Ever diagnosed + symptoms or treatment (NSW, 16 years+)
- (2) Ever diagnosed + symptoms or treatment (SA, 16 years+)
- ▲ (3) Ever diagnosed + symptoms (Vic, 18 years+)
- ◆ (4) Ever diagnosed + still have asthma (SA, 15 years+)
- ★ (5) Ever diagnosed and still have asthma (Australia, 16 years+)
- ✕ (6) Ever diagnosed + symptoms or treatment in last year (WA, 16 years+)
- (7) Ever diagnosed + symptoms or treatment in last year (Qld, 18 years+)
- (8) Ever diagnosed + symptoms or treatment (SA, 18 years+)

Time trends in prevalence of asthma, children



Proportion (percent)



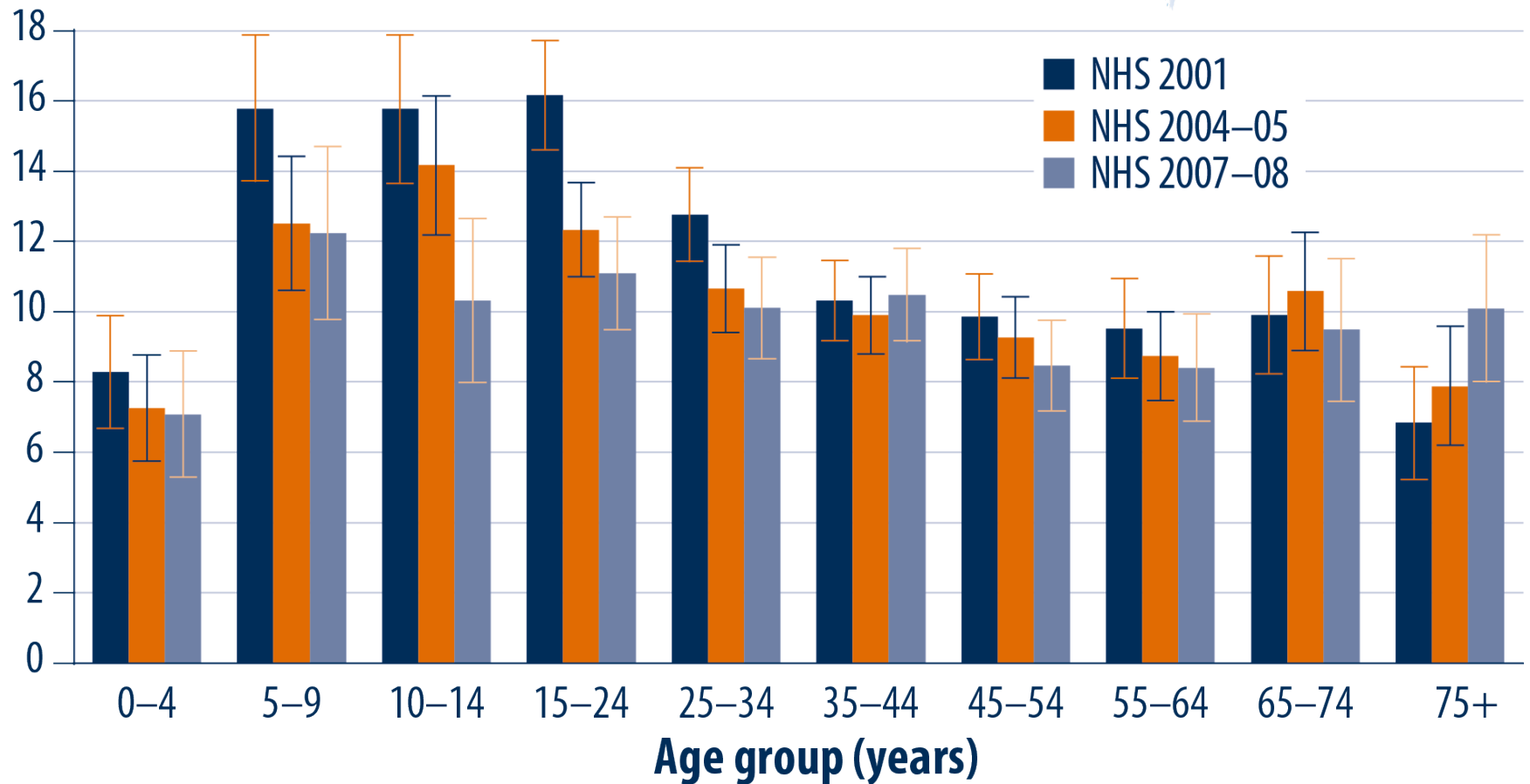
- (1) Recent wheeze (SA, age 4–5 years)
- (2) Recent wheeze (Belmont, NSW)
- ▲ (3) Recent wheeze (Wagga Wagga, NSW)
- ◆ (4) Current wheeze (Melbourne, Vic)
- ★ (5) Ever diagnosed + symptoms or treatment (SA, SAMSS, age 2–15y)
- ✱ (6) Recent wheeze + AHR (Belmont, NSW)
- (7) Recent wheeze + AHR (Wagga Wagga, NSW)
- (8) Ever diagnosed + symptoms or treatment in the last year (WA, age 0–15y)
- ◀ (9) Ever diagnosed + symptoms or treatment in last year (ACT)
- ▲ (10) Ever diagnosed + symptoms or treatment in last year (NSW, age 2–15y)
- ◆ (11) Ever diagnosed + symptoms in last year (Vic, age 1–12y)
- ★ (12) Ever diagnosed + symptoms or treatment in last year (SA, age 2–17y)
- ✱ (13) Ever diagnosed + symptoms or treatment in last year (Australia, age 0–15y)



Prevalence of current asthma by age and National Health Survey



Prevalence of current asthma (per cent)

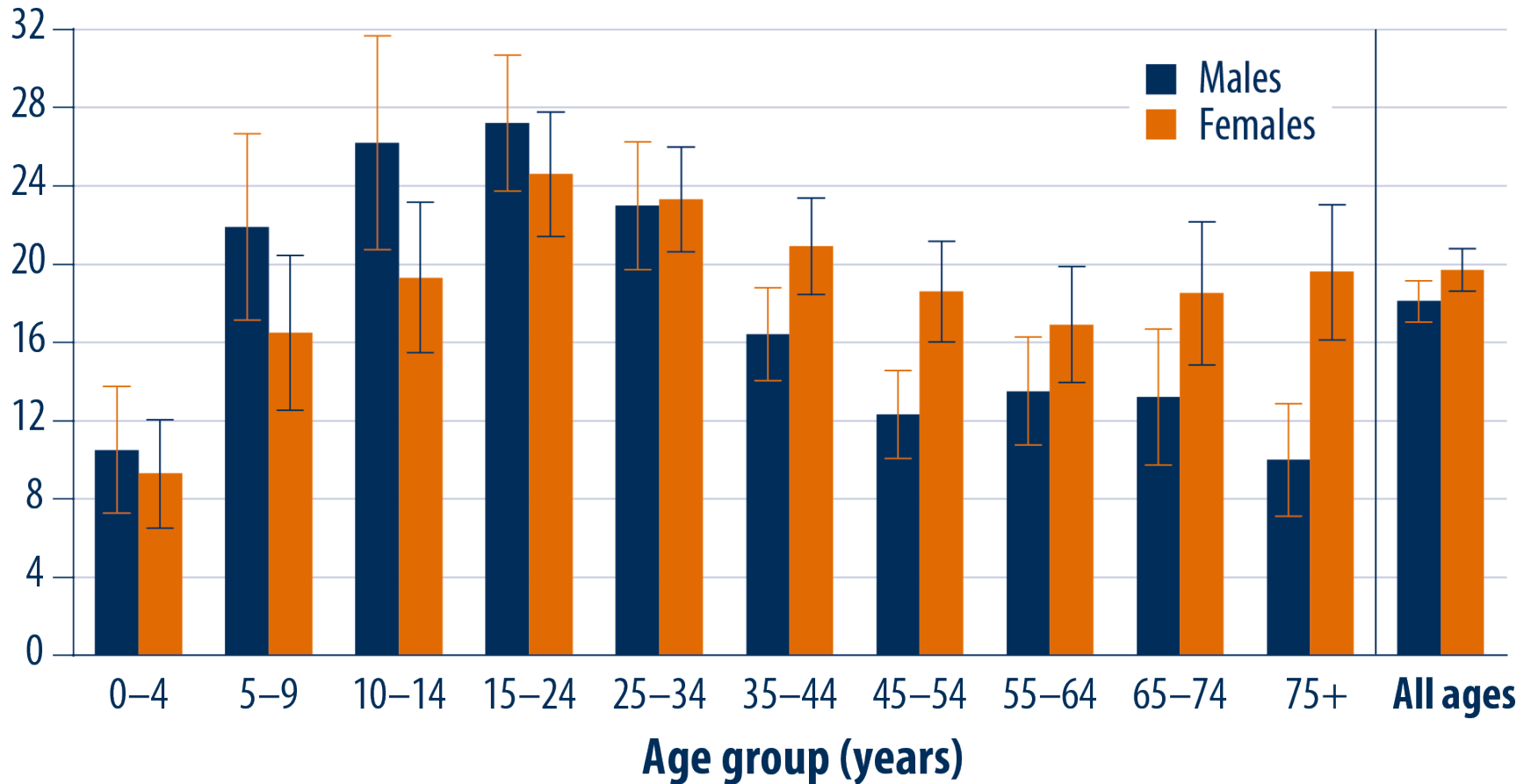


Source: National Health Survey

Prevalence of ever-diagnosed asthma by age and sex



Prevalence of ever-diagnosed asthma (per cent)

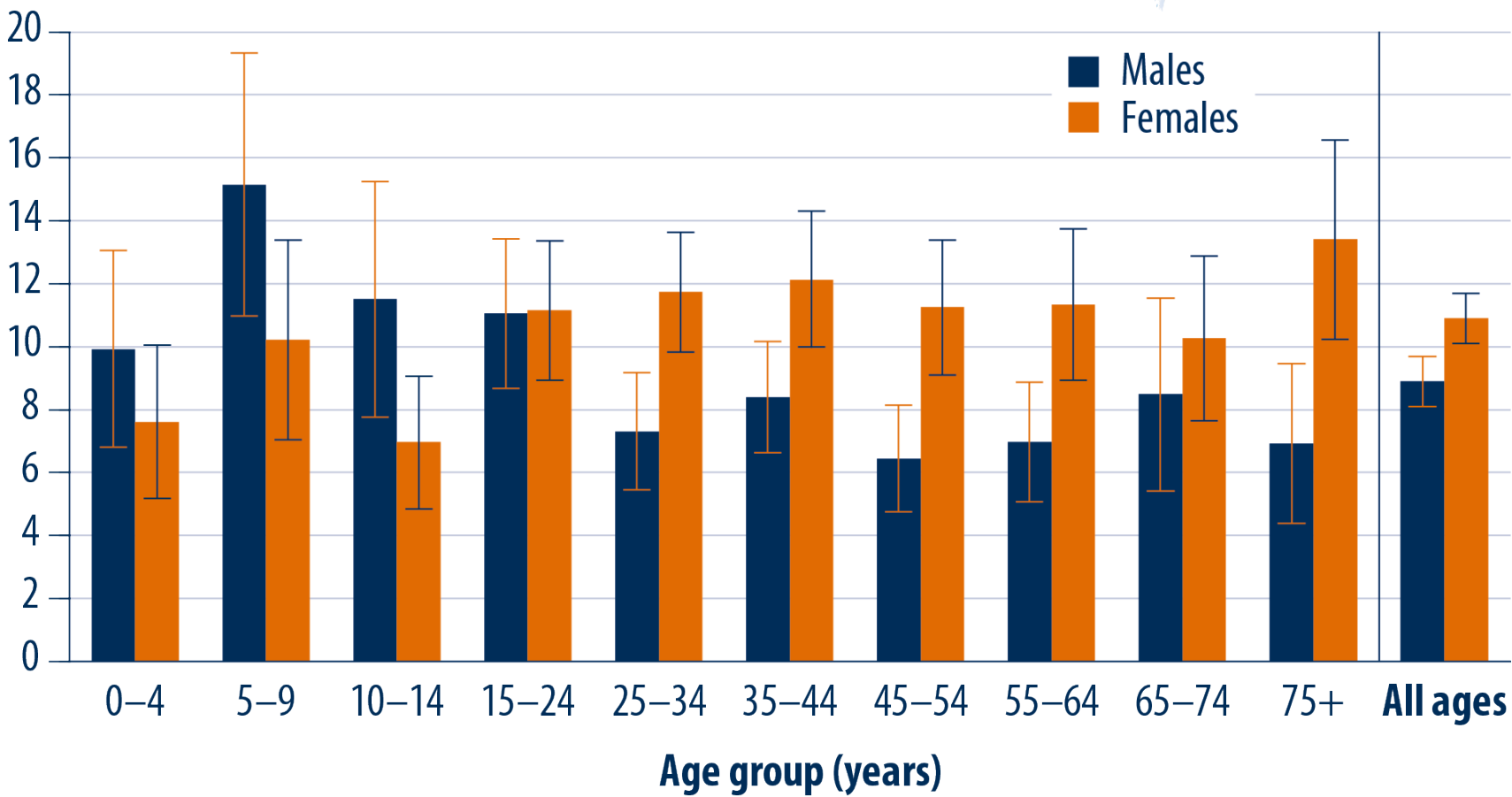


Source: National Health Survey 2007-08

Prevalence of current asthma by age and sex



Prevalence of current asthma (per cent)

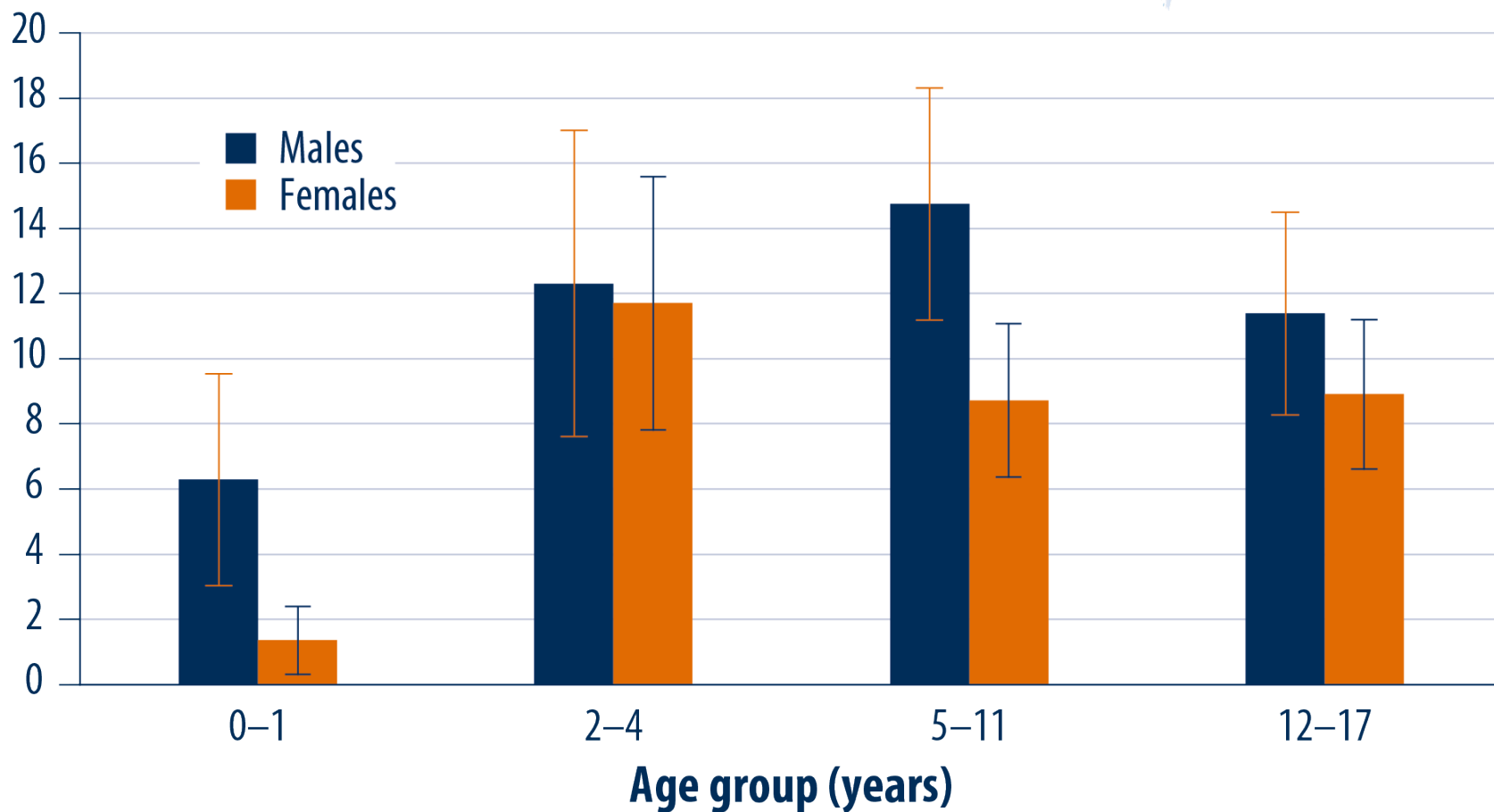


Source: National Health Survey 2007-08

Prevalence of current asthma in children by age and sex



Prevalence of current asthma (per cent)

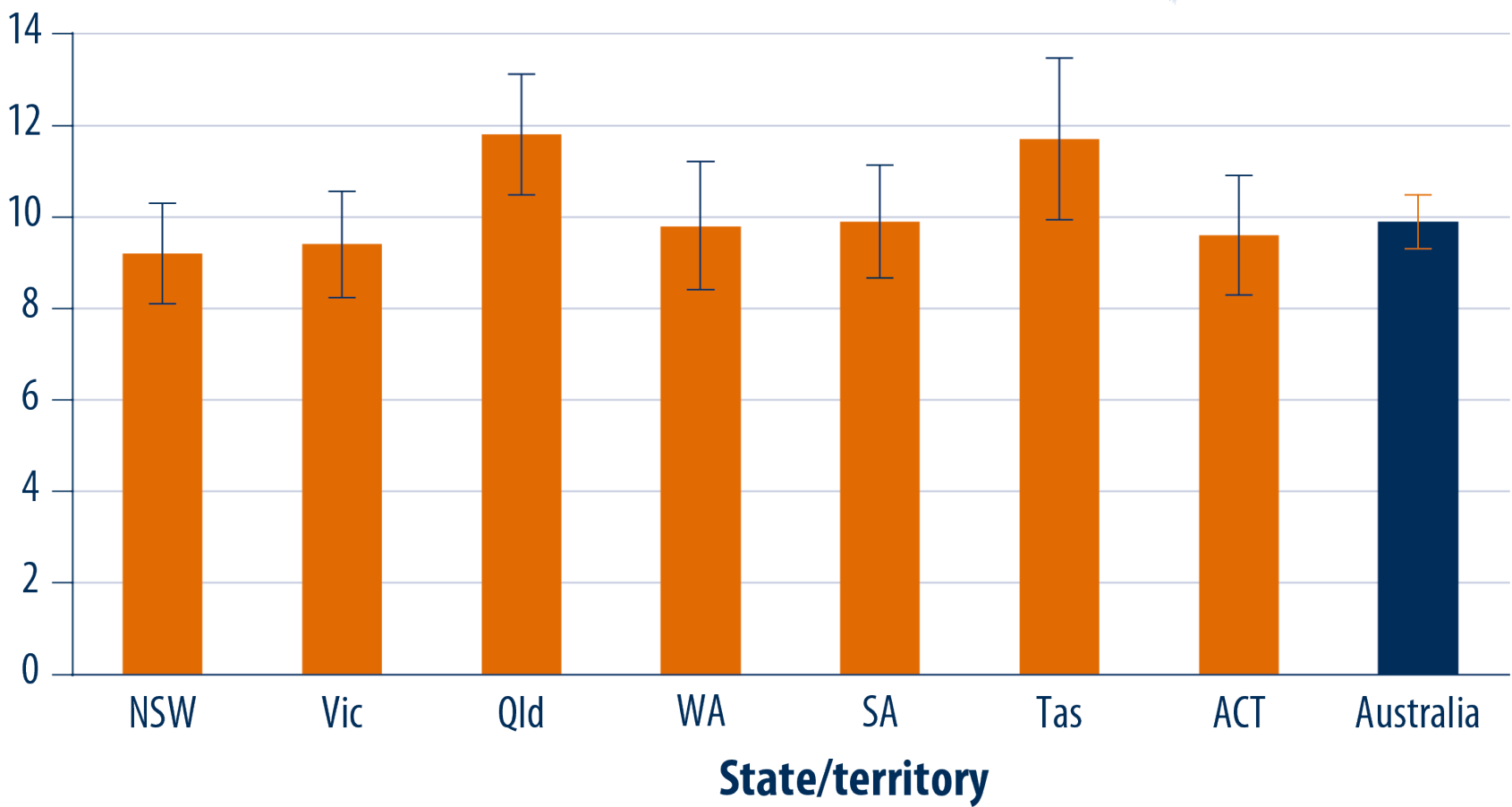


Source: National Health Survey 2007-08

Prevalence of current asthma by state/territory



Prevalence of current asthma (per cent)

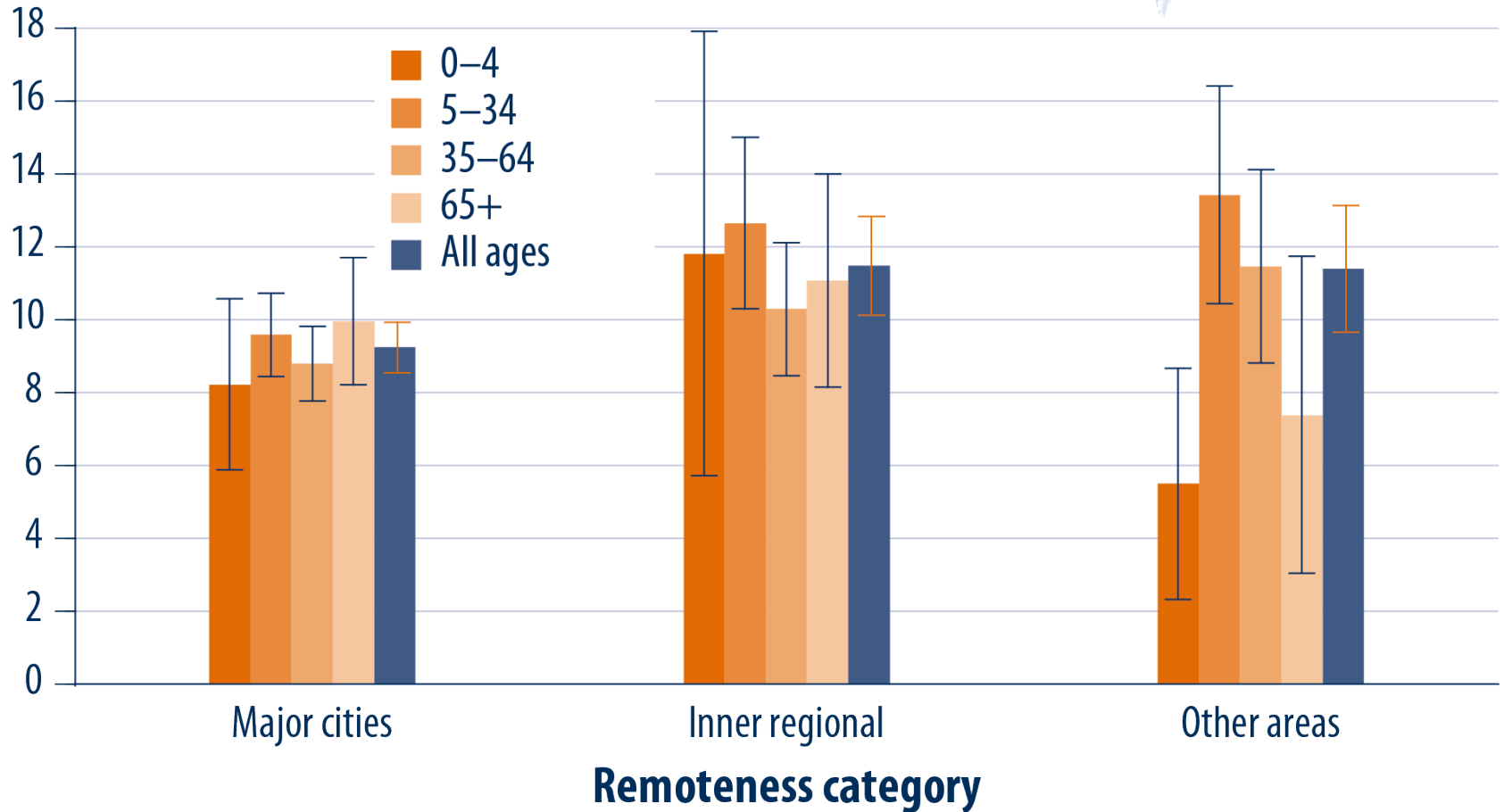


Source: National Health Survey 2007–08

Prevalence of current asthma by age and remoteness



Prevalence of current asthma (per cent)

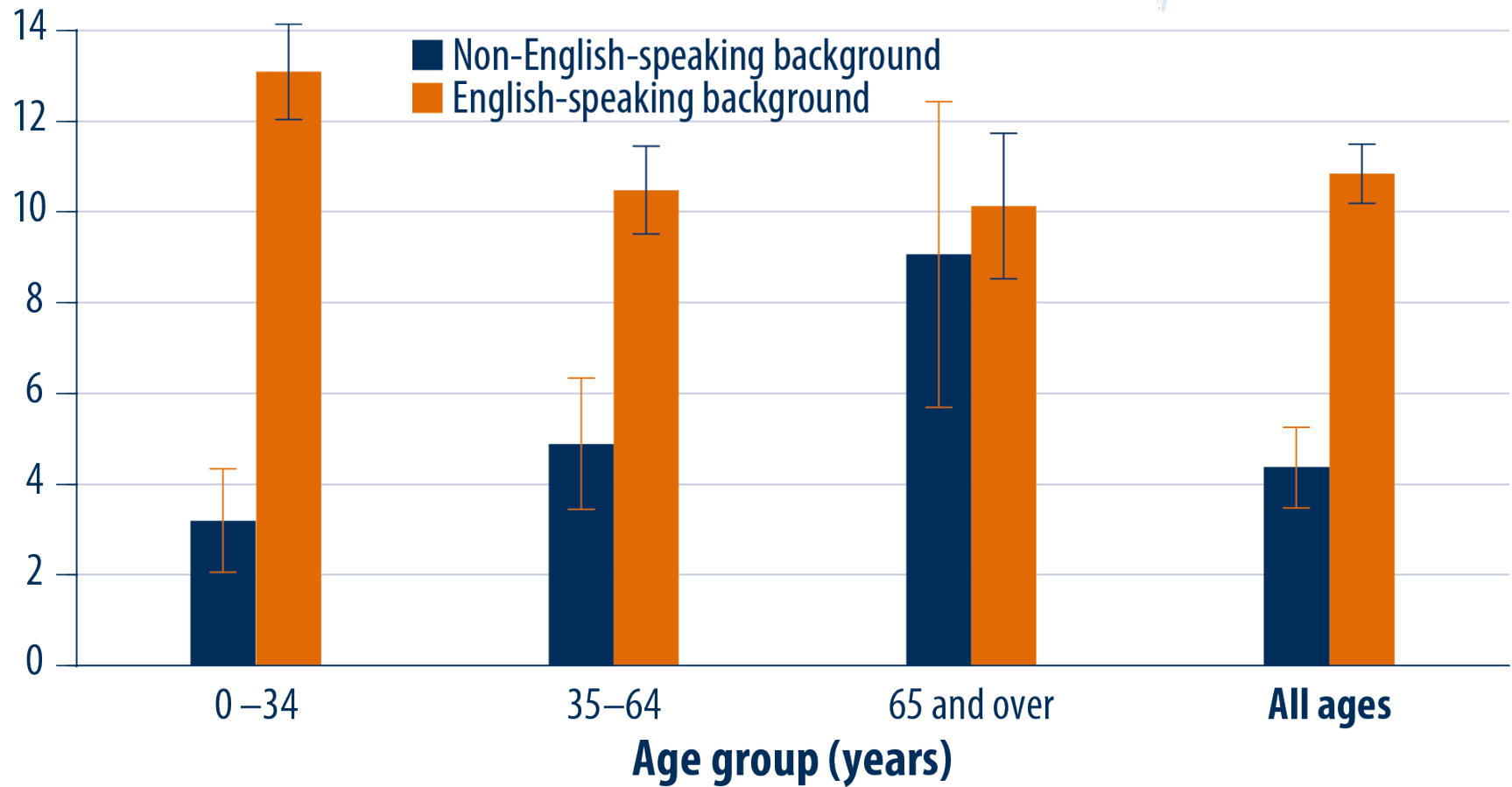


Source: National Health Survey 2007–08

Prevalence of current asthma by age and country of birth



Prevalence of current asthma (per cent)

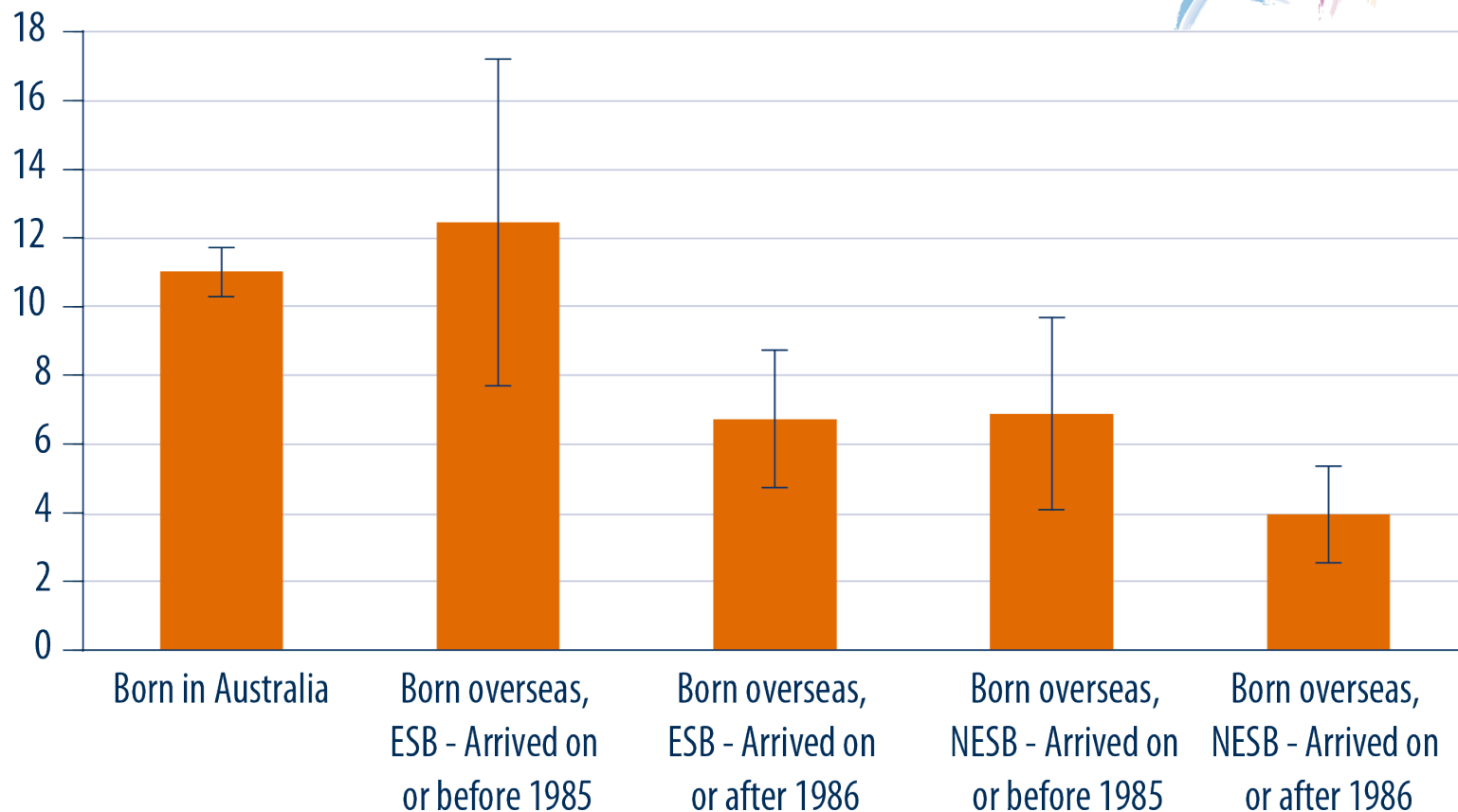


Source: National Health Survey 2007-08

Prevalence of current asthma by country of birth and year of arrival in Australia



Prevalence of current asthma (per cent)



Country of birth and year of arrival in Australia

Source: National Health Survey 2007–08



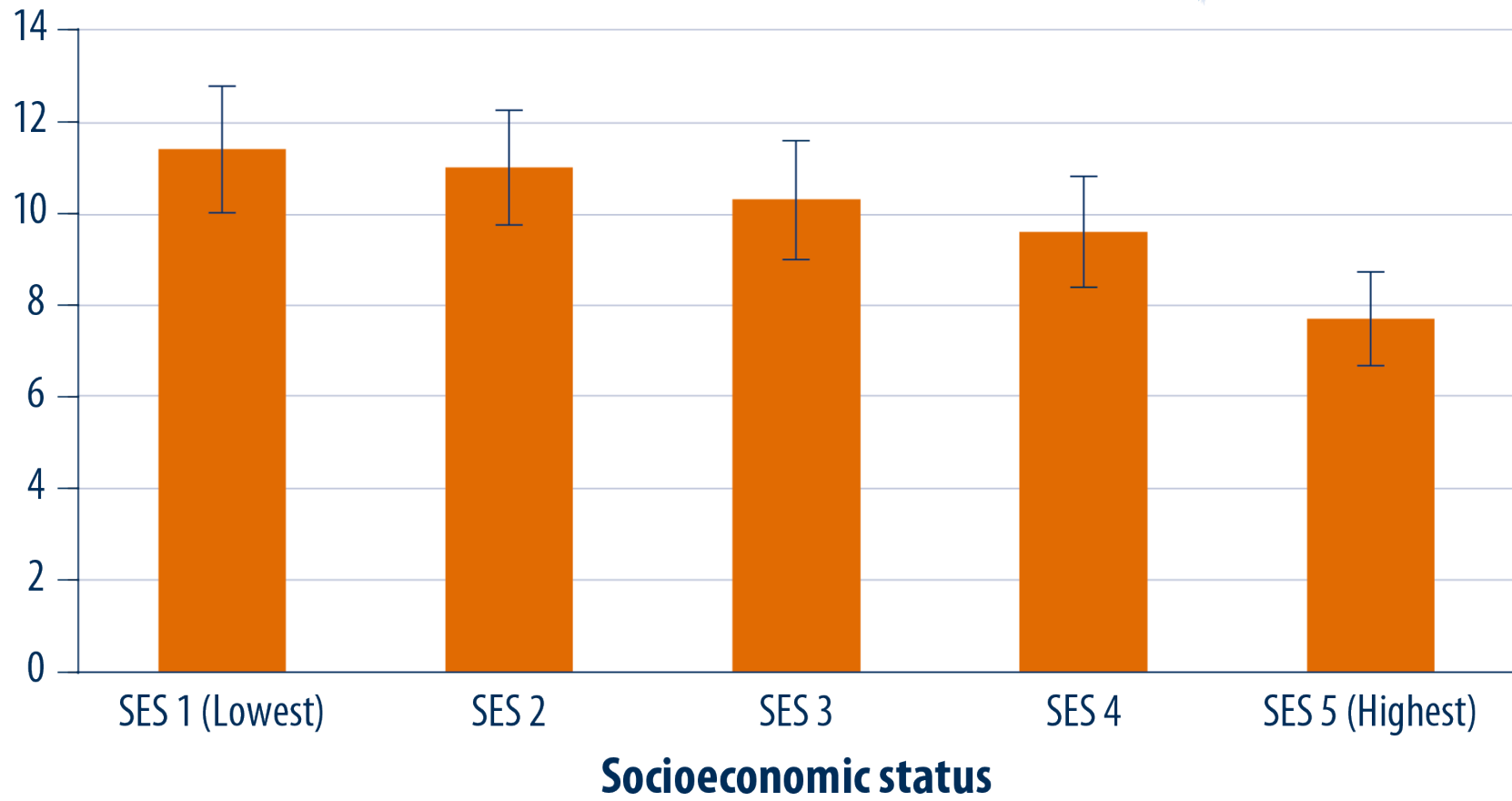
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Prevalence of current asthma by socioeconomic status



Prevalence of current asthma (per cent)



Source: National Health Survey 2007–08



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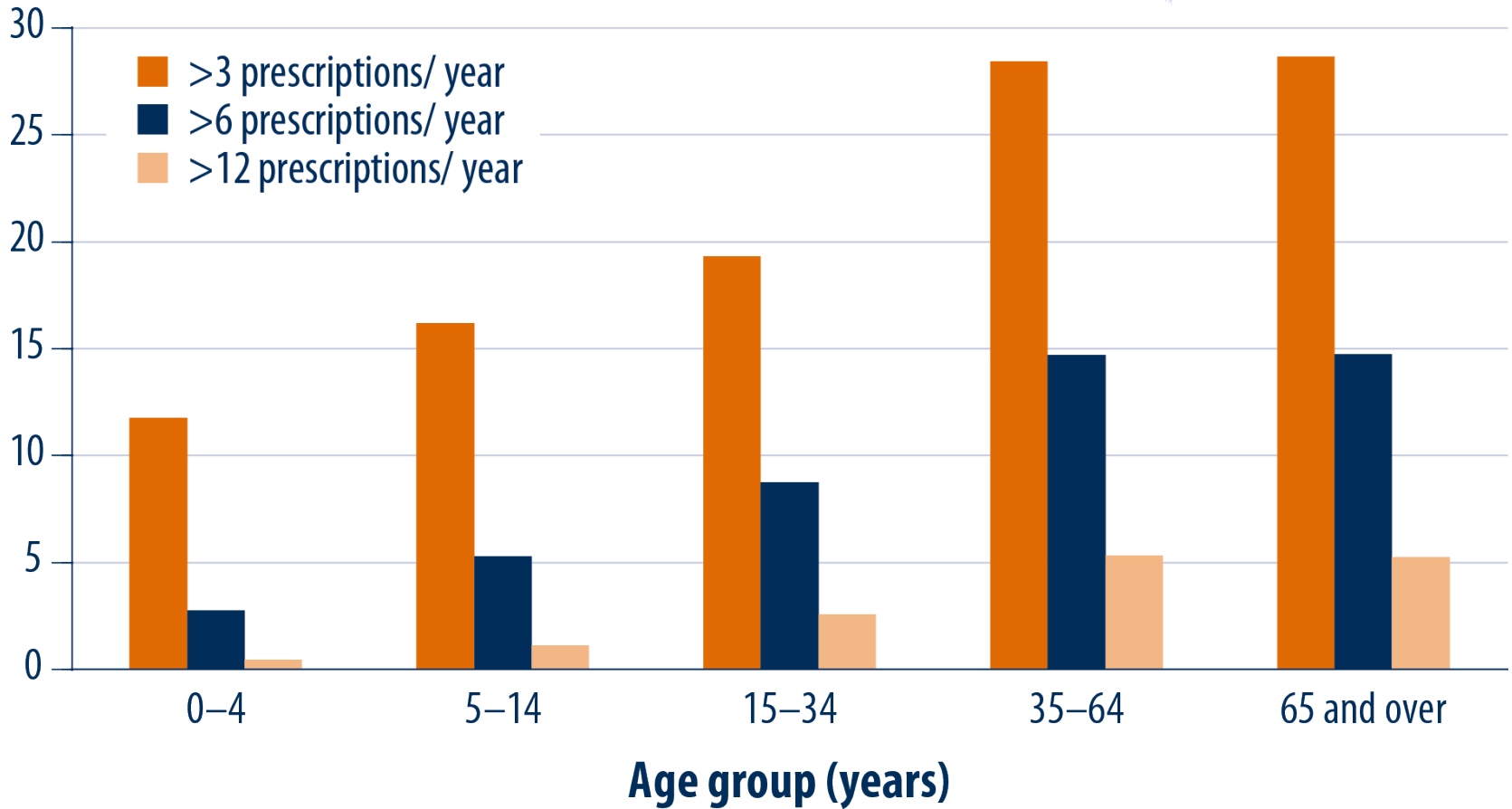
Chapter 3

Asthma control and quality of life

Dispensing of short-acting beta-agonists among concession card holders taking medications for asthma or COPD by age

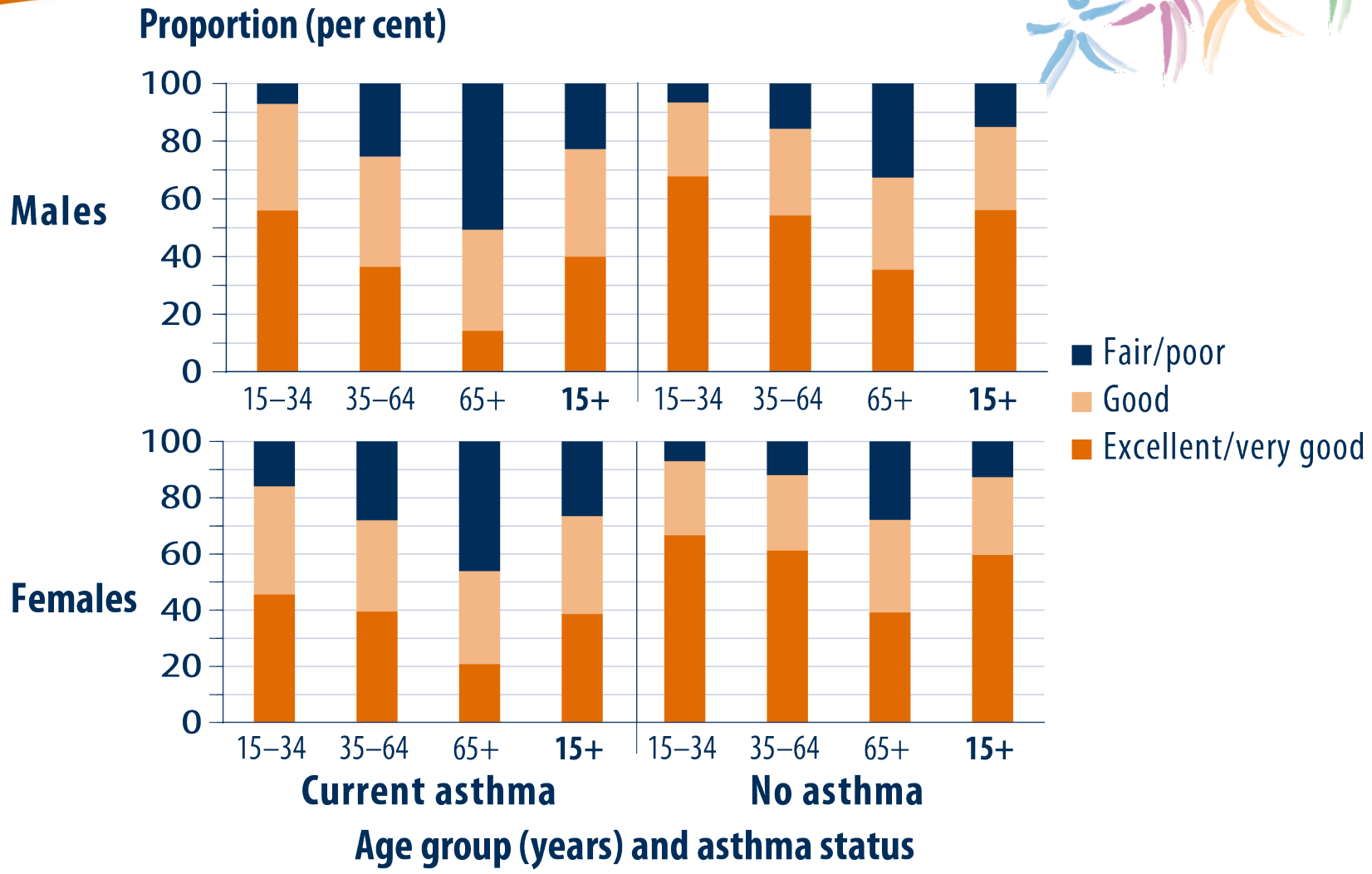


Per cent



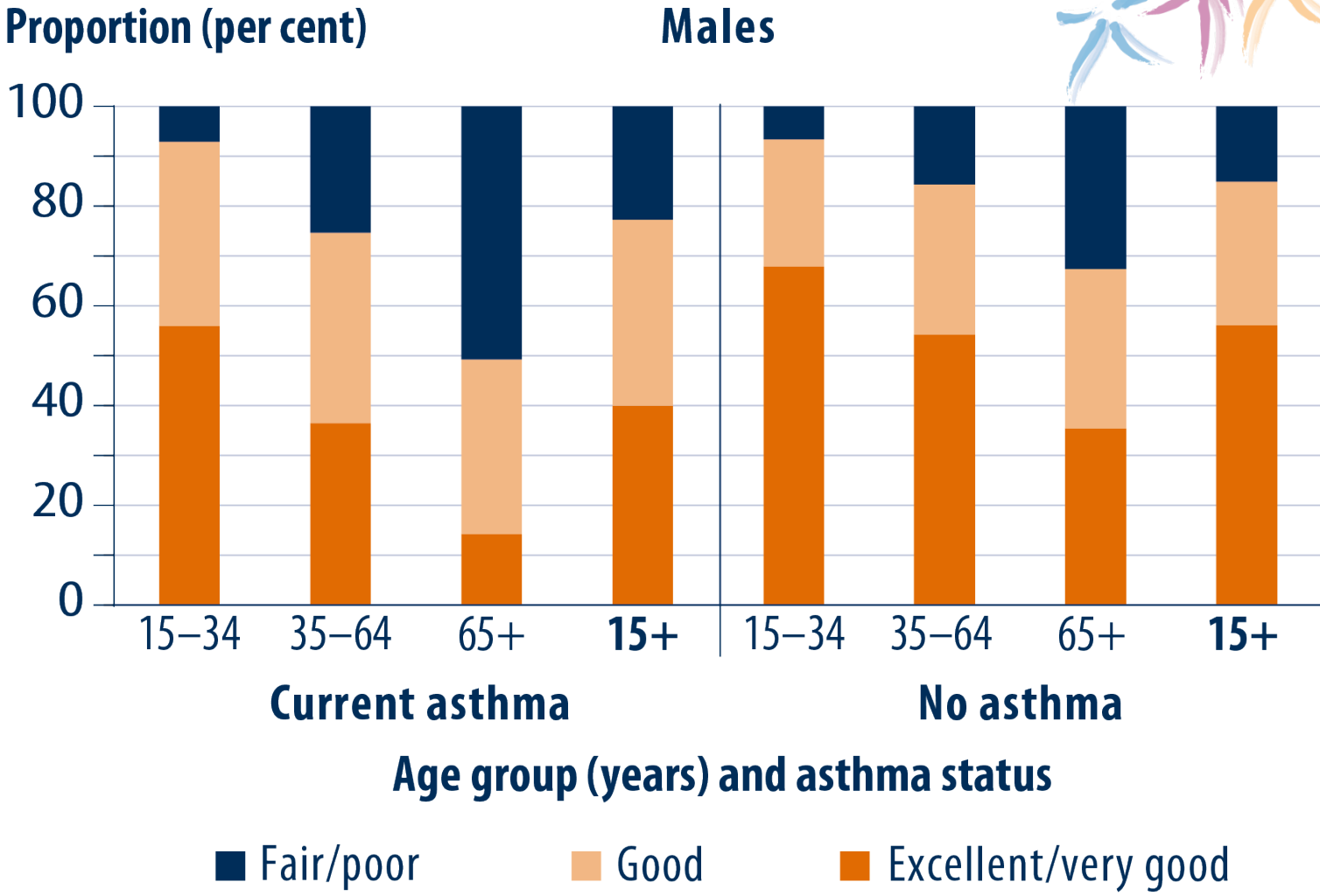
Source: Pharmaceutical Benefits Scheme 2009

Self-assessed health status in people aged 15 years and over, by sex, current asthma status and age



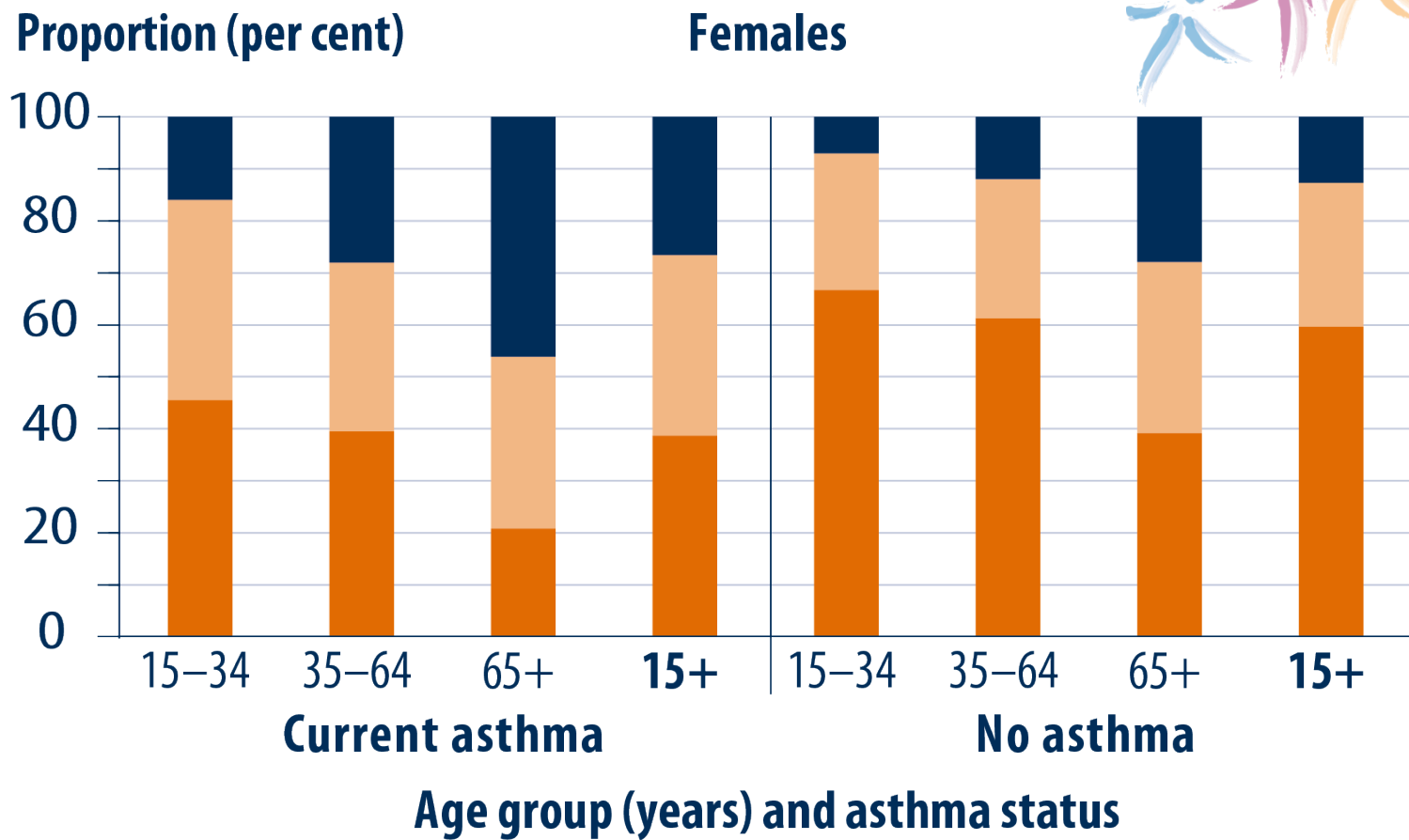
Source: National Health Survey 2007-08

Self-assessed health status in males aged 15 years and over, by current asthma status and age



Source: National Health Survey 2007-08

Self-assessed health status in females aged 15 years and over, by current asthma status and age



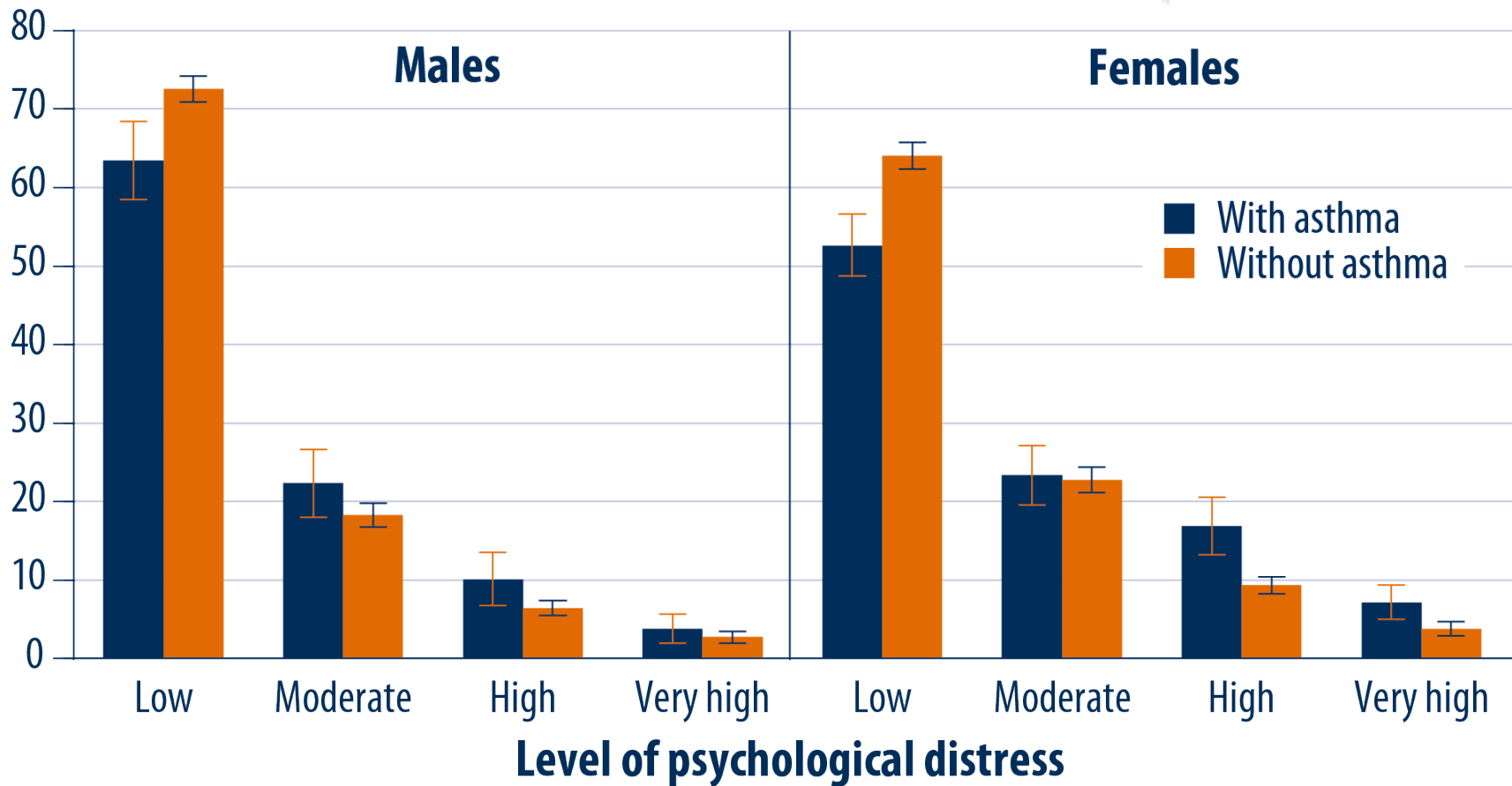
Fair/poor
 Good
 Excellent/very good

Source: National Health Survey 2007-08

Prevalence of psychological distress by asthma status and sex (Kessler-10)



Proportion (per cent)



Source: National Health Survey 2007–08



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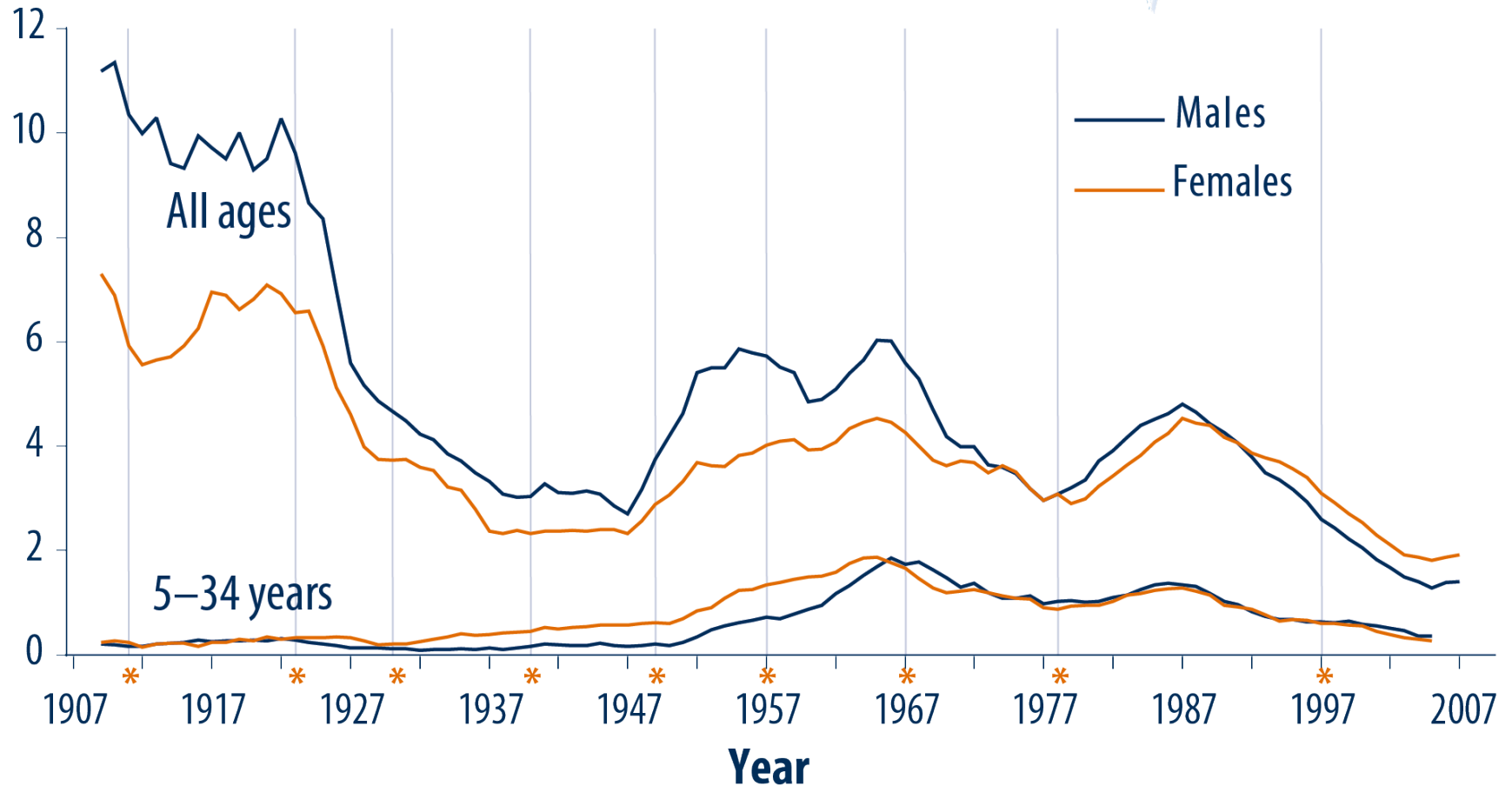
Chapter 4

Mortality

Long-term trends in death due to asthma by sex, all ages and people aged 5–34 years



Deaths per 100,000 population



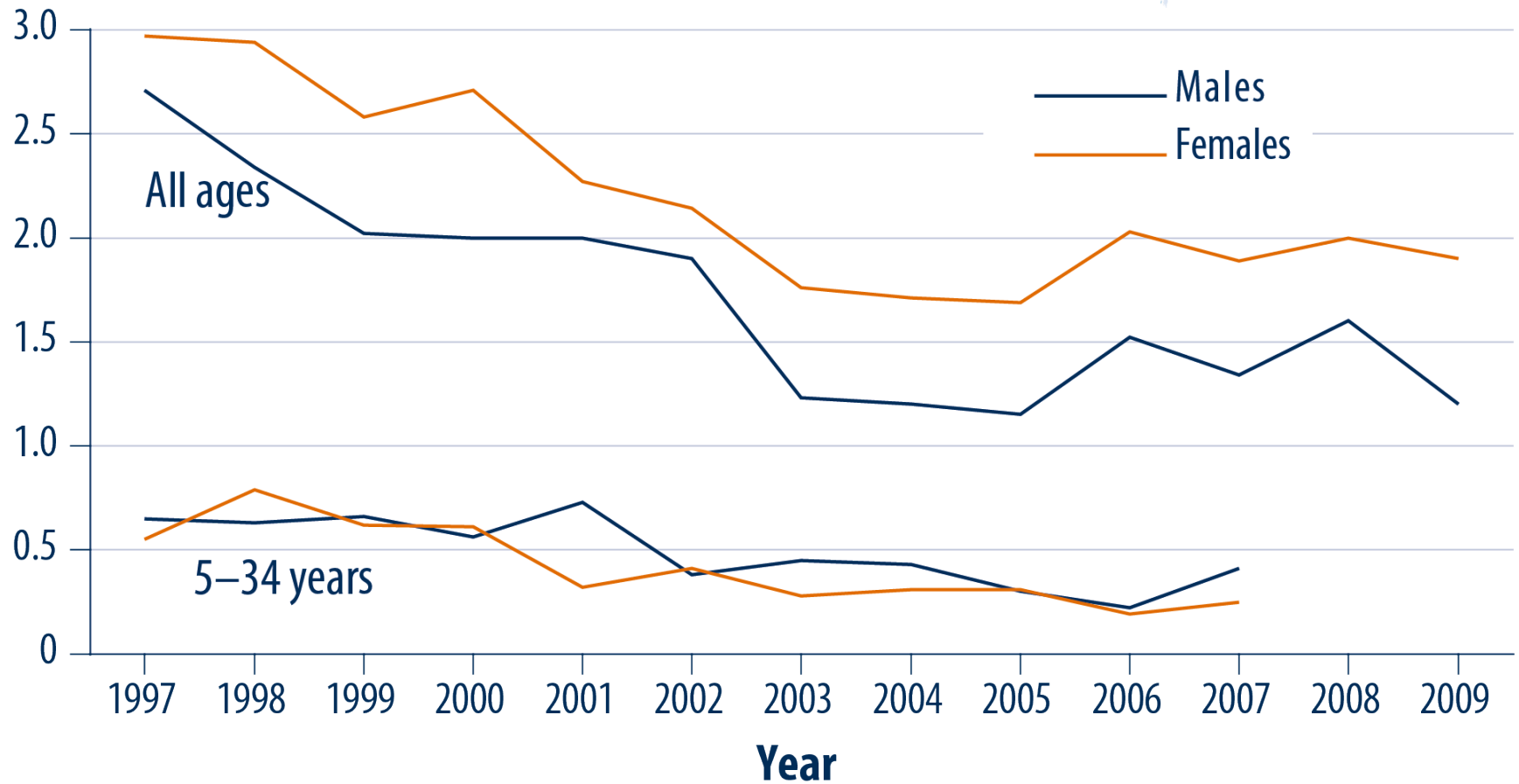
Source: AIHW National Mortality Database

* Indicates change to the ICD

Recent trends in deaths due to asthma by sex, all ages and people aged 5–34 years



Deaths per 100,000 population



Source: AIHW National Mortality Database

World ranking of asthma mortality, people aged 5–34 years

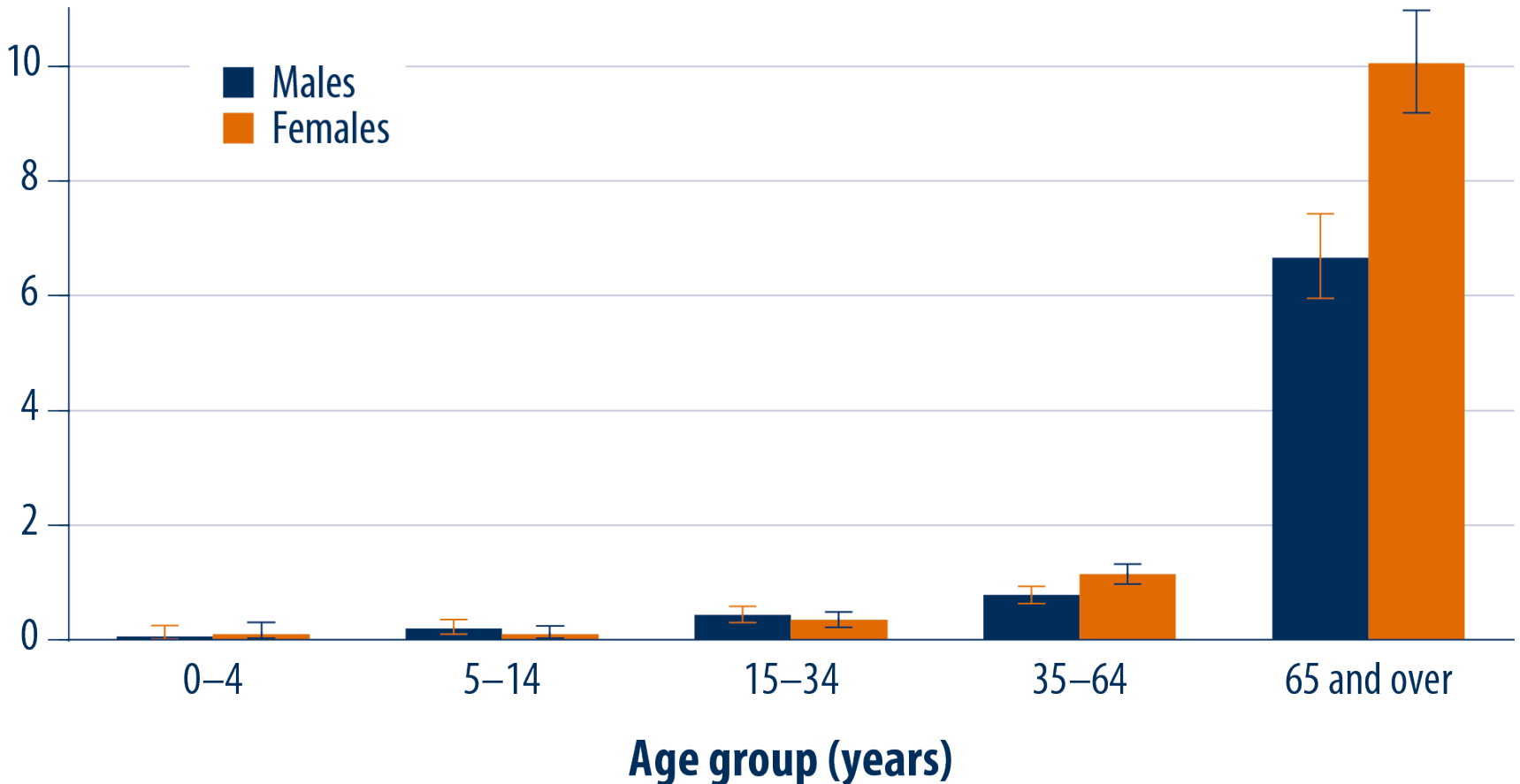


Source: WHO; AIHW National Mortality Database 2003-2007

Deaths due to asthma by age and sex

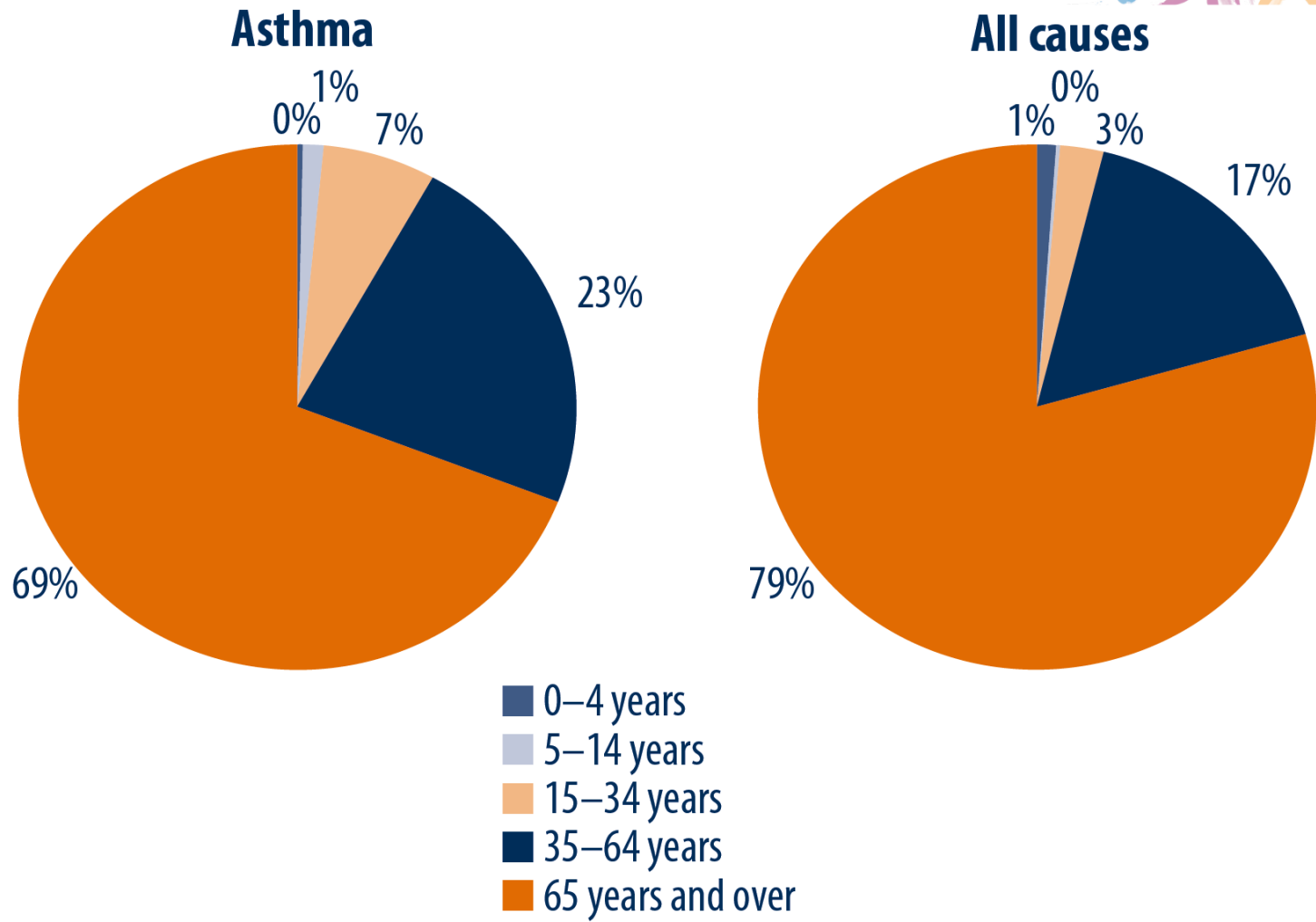


Deaths from asthma per 100,000 population



Source: AIHW National Mortality Database 2003-2007

Age distribution for asthma and all causes mortality

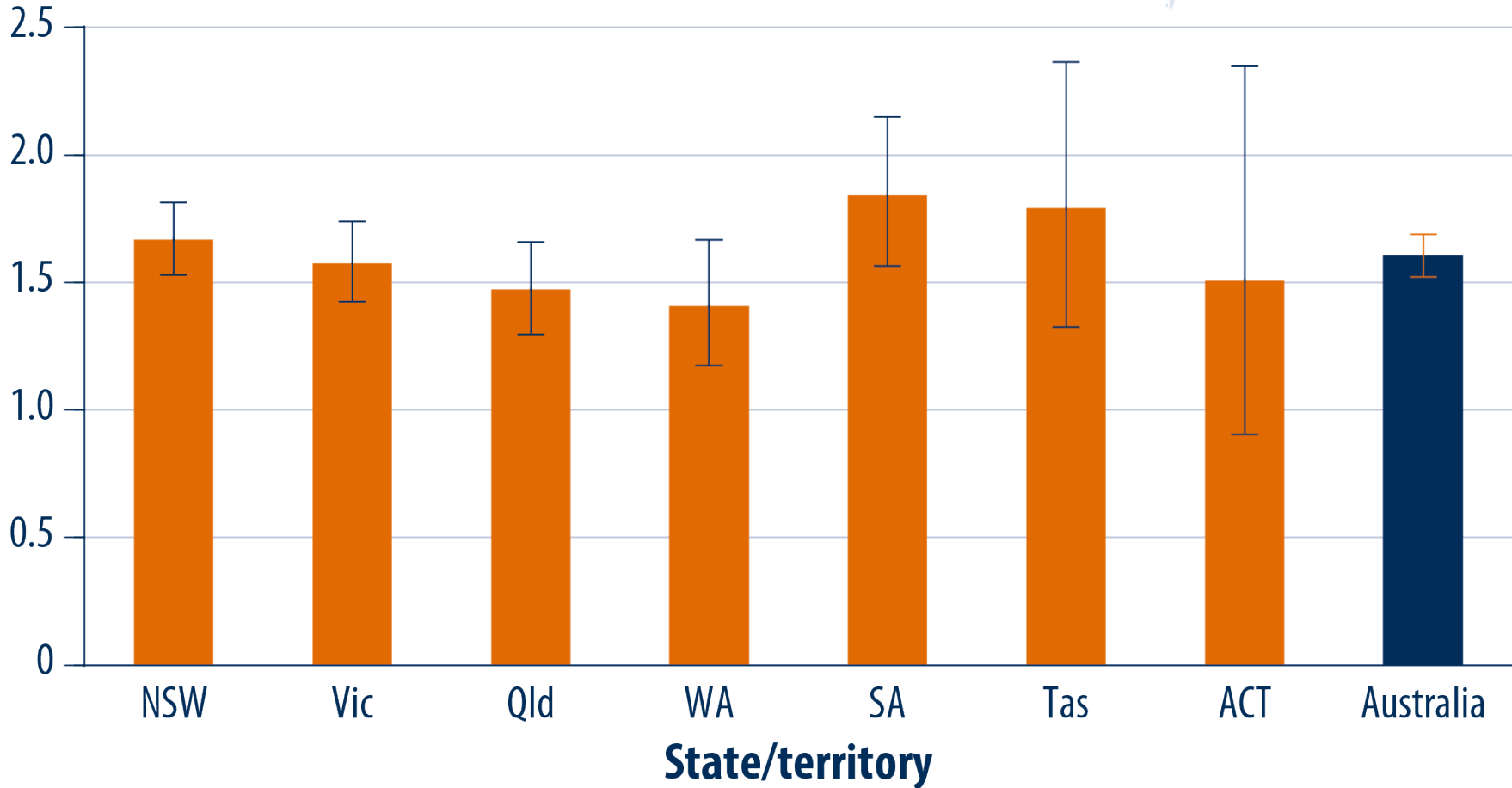


Source: AIHW National Mortality Database 2003-2007

Deaths due to asthma by state/territory

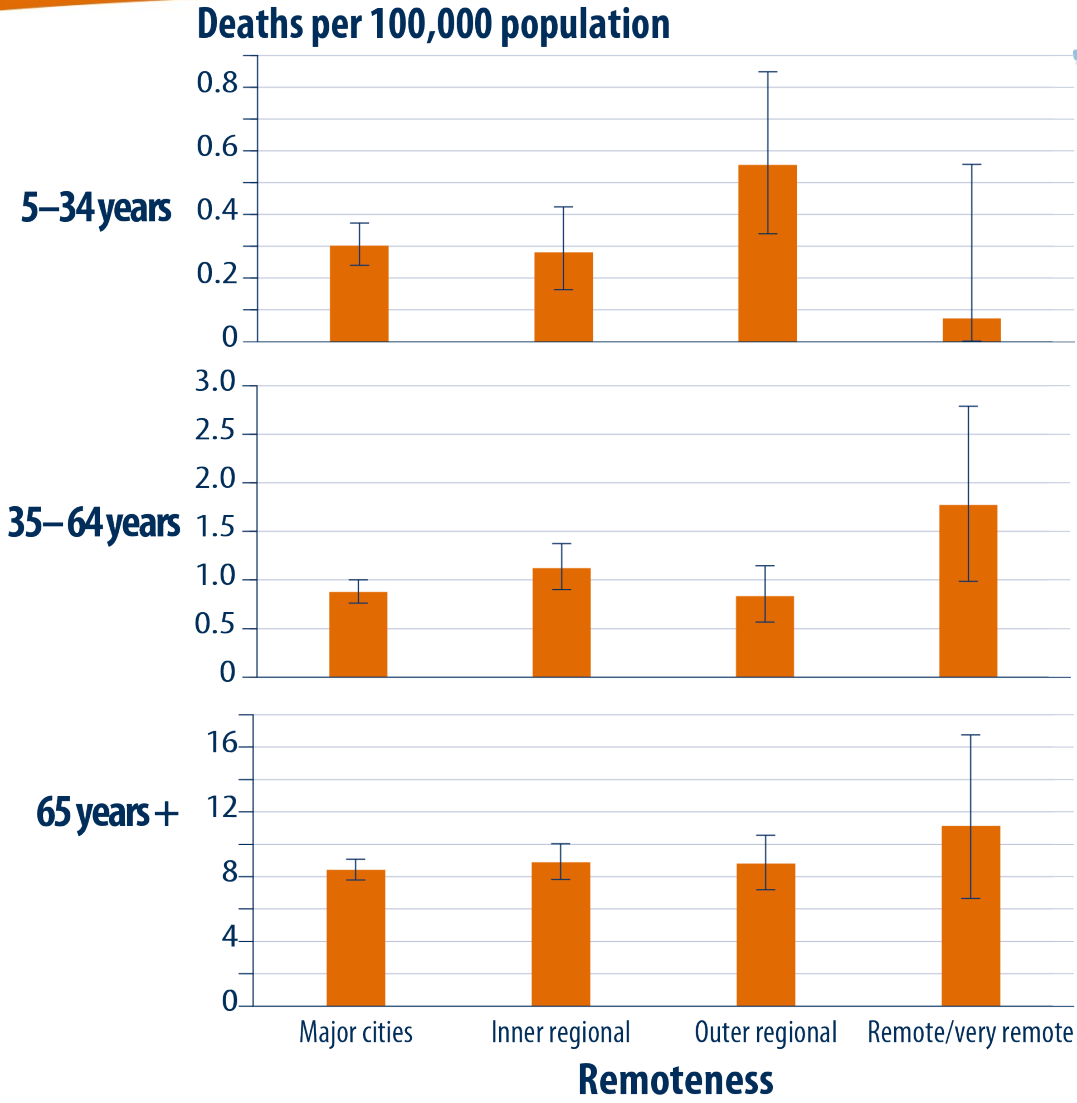


Deaths per 100,000 population



Source: AIHW National Mortality Database 2003–2007

Deaths due to asthma by remoteness and age

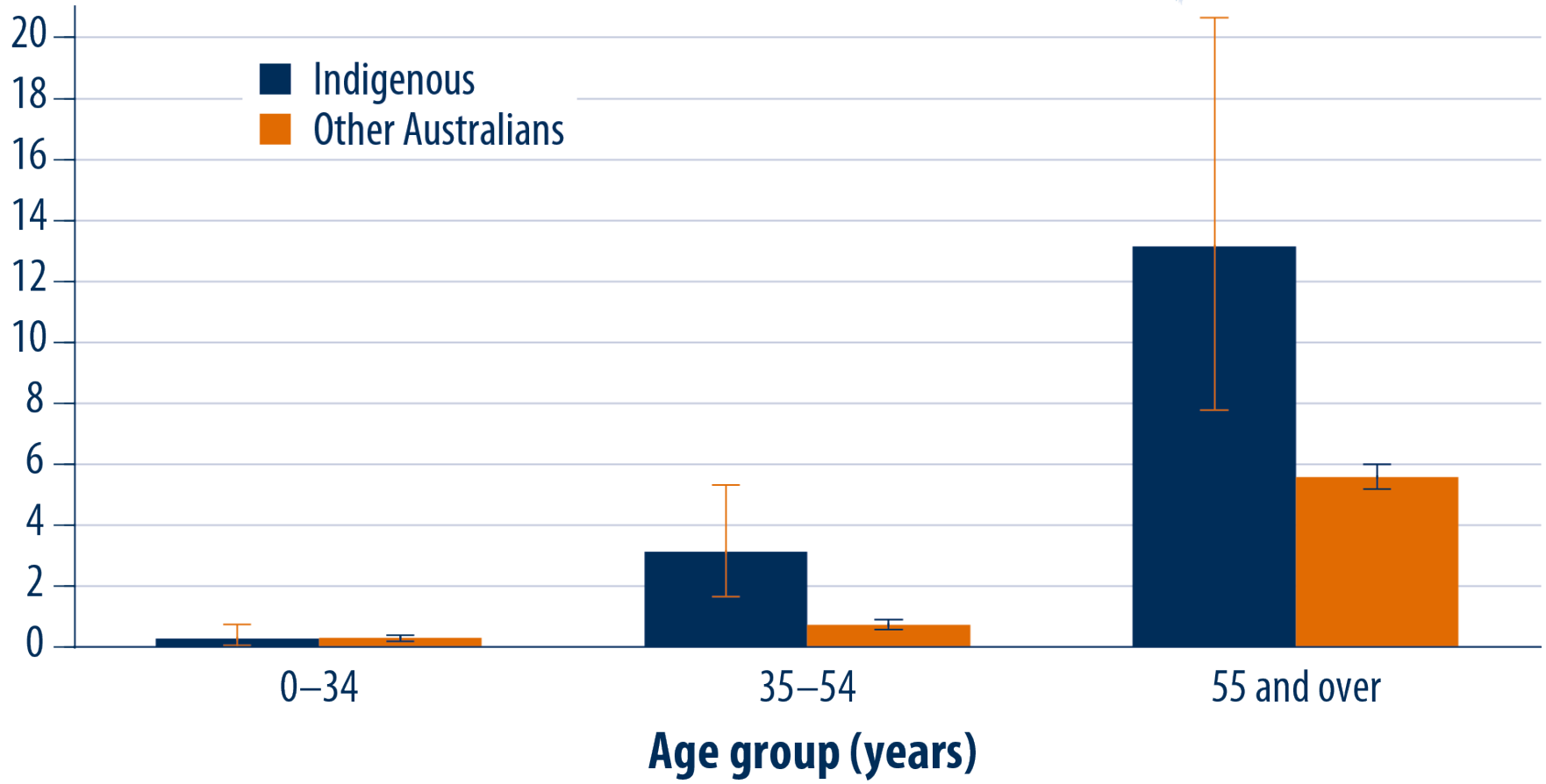


Source: AIHW National Mortality Database 2003-2007

Deaths due to asthma by age and Indigenous status



Deaths per 100,000 population

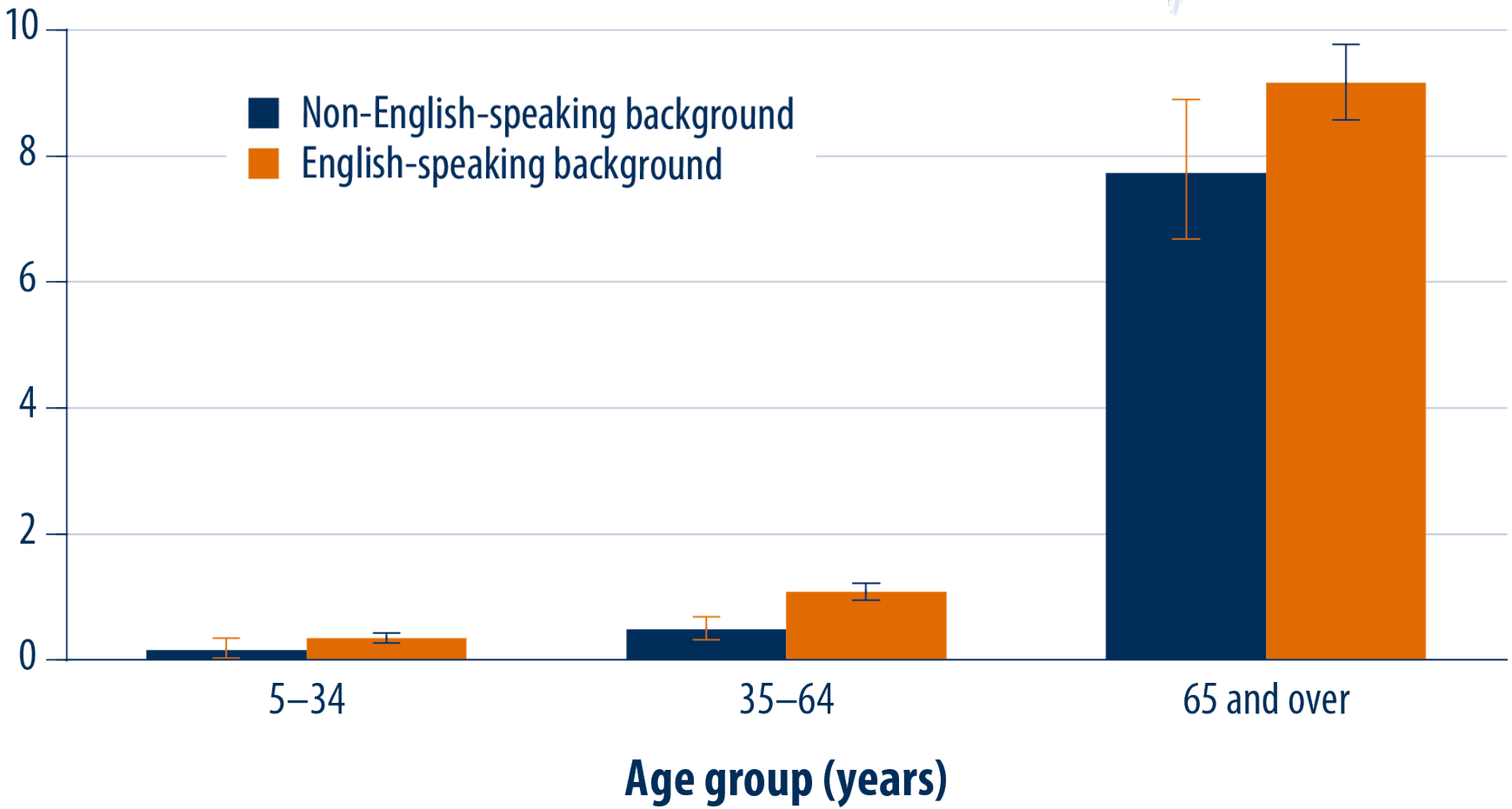


Source: AIHW National Mortality Database 2003–2007

Deaths due to asthma by age and country of birth



Deaths per 100,000 population

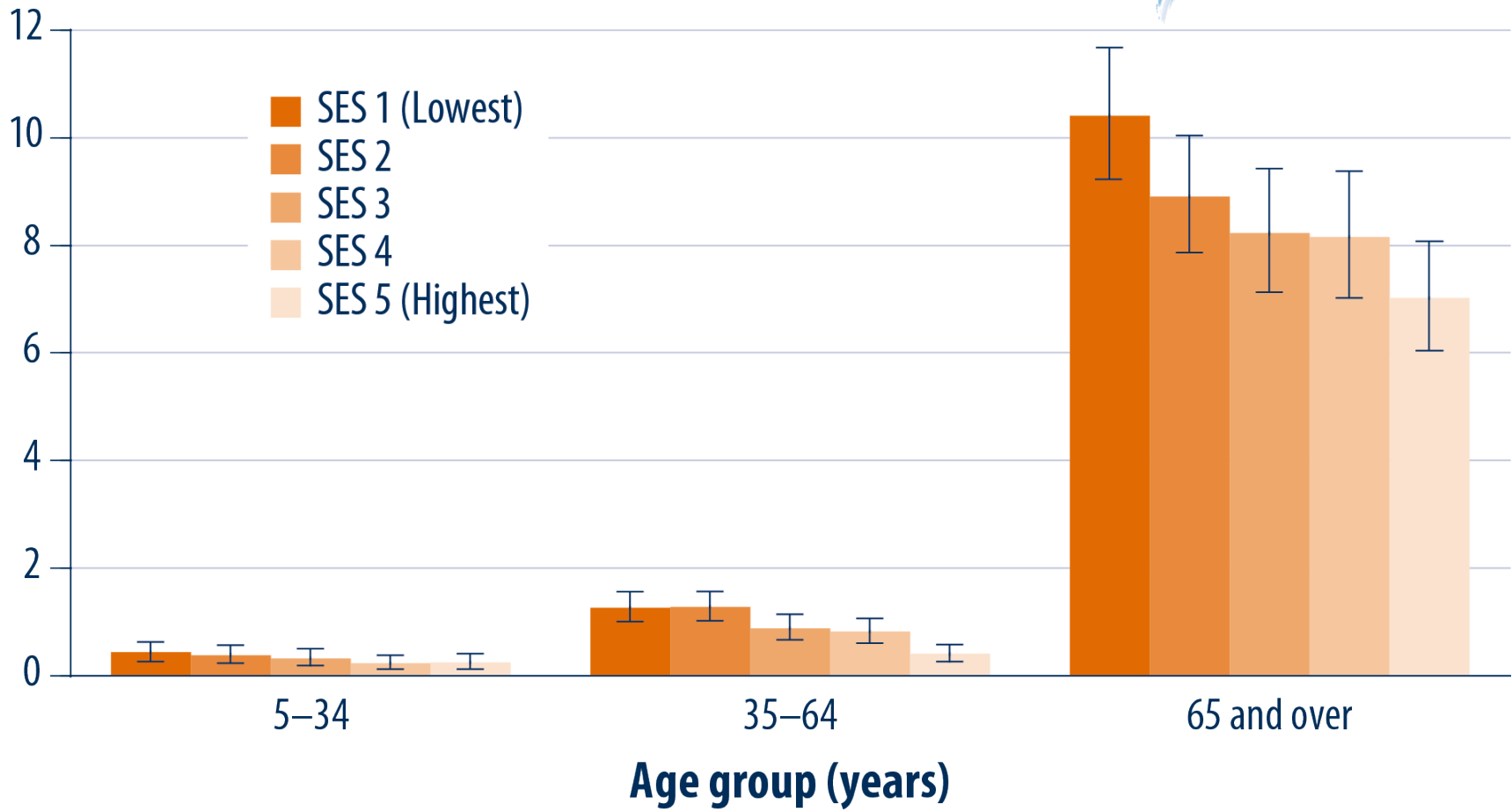


Source: AIHW National Mortality Database 2003-2007

Deaths due to asthma by age and socioeconomic status



Deaths per 100,000 population

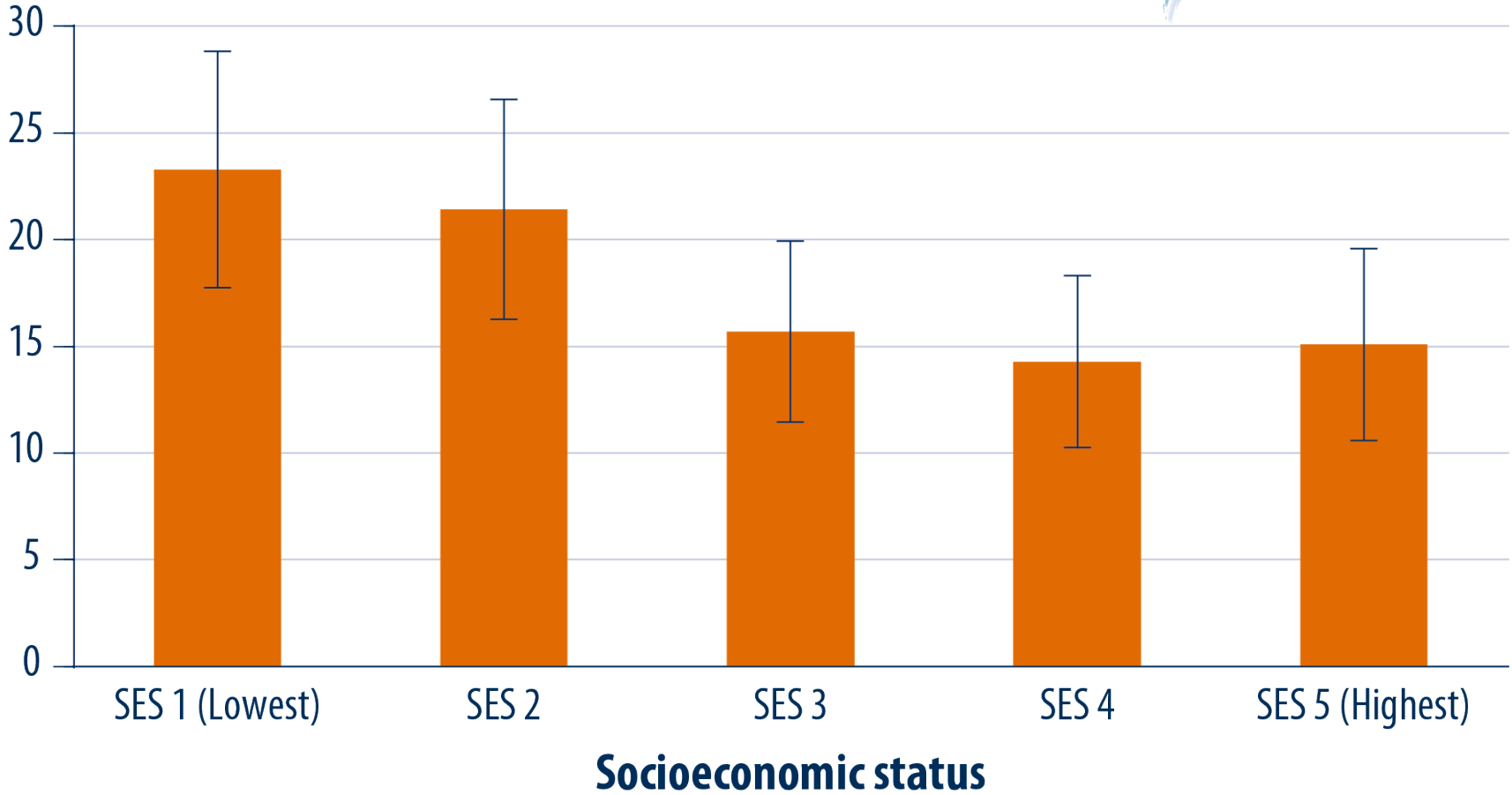


Source: AIHW National Mortality Database 2003–2007

Case-fatality rate due to asthma by socioeconomic status



Deaths per 100,000 people with asthma

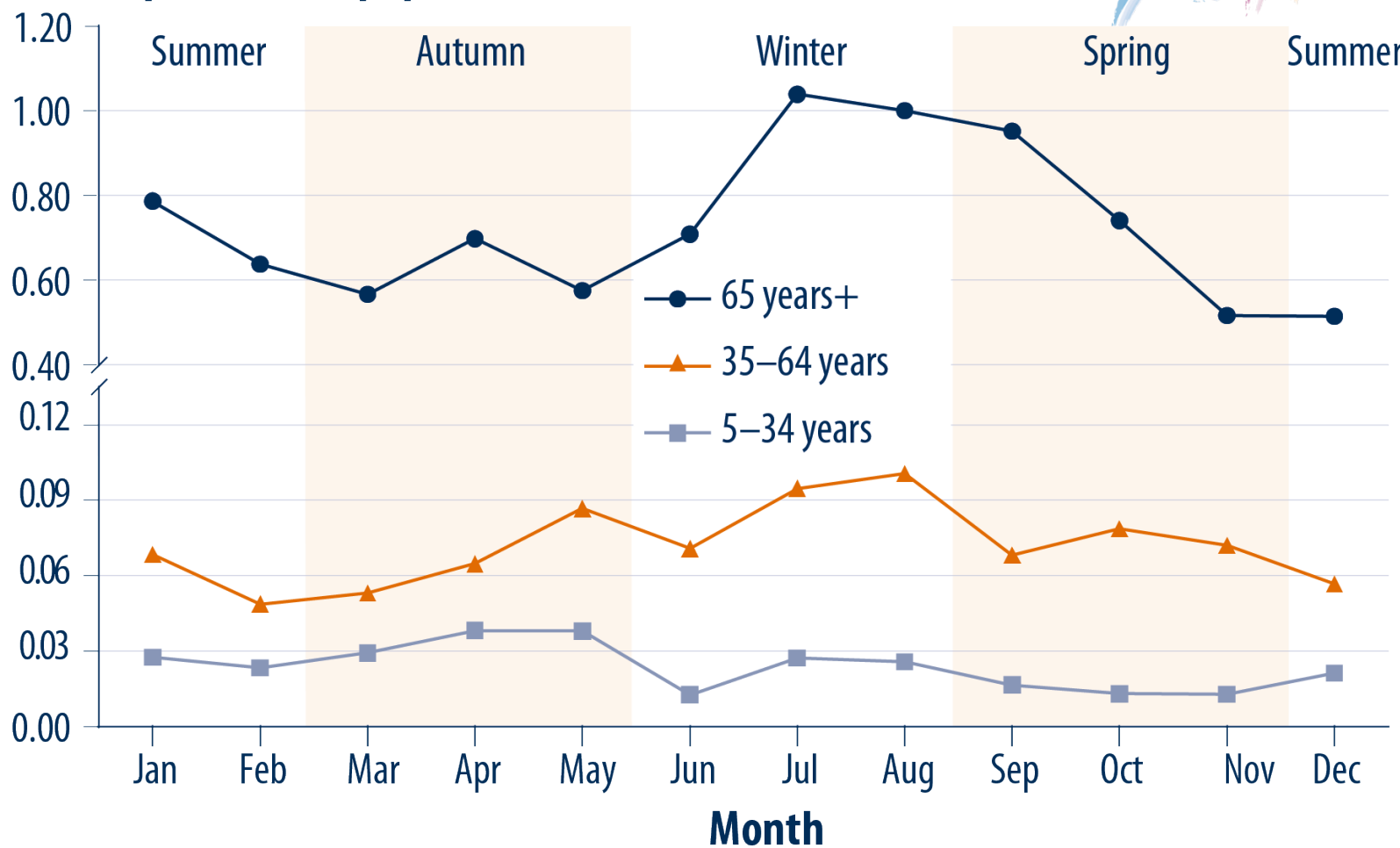


Source: AIHW National Mortality Database 2003–2007

Seasonal variation in deaths due to asthma by age



Deaths per 100,000 population



Source: AIHW National Mortality Database 2003–2007



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Chapter 5

Use of Health Services



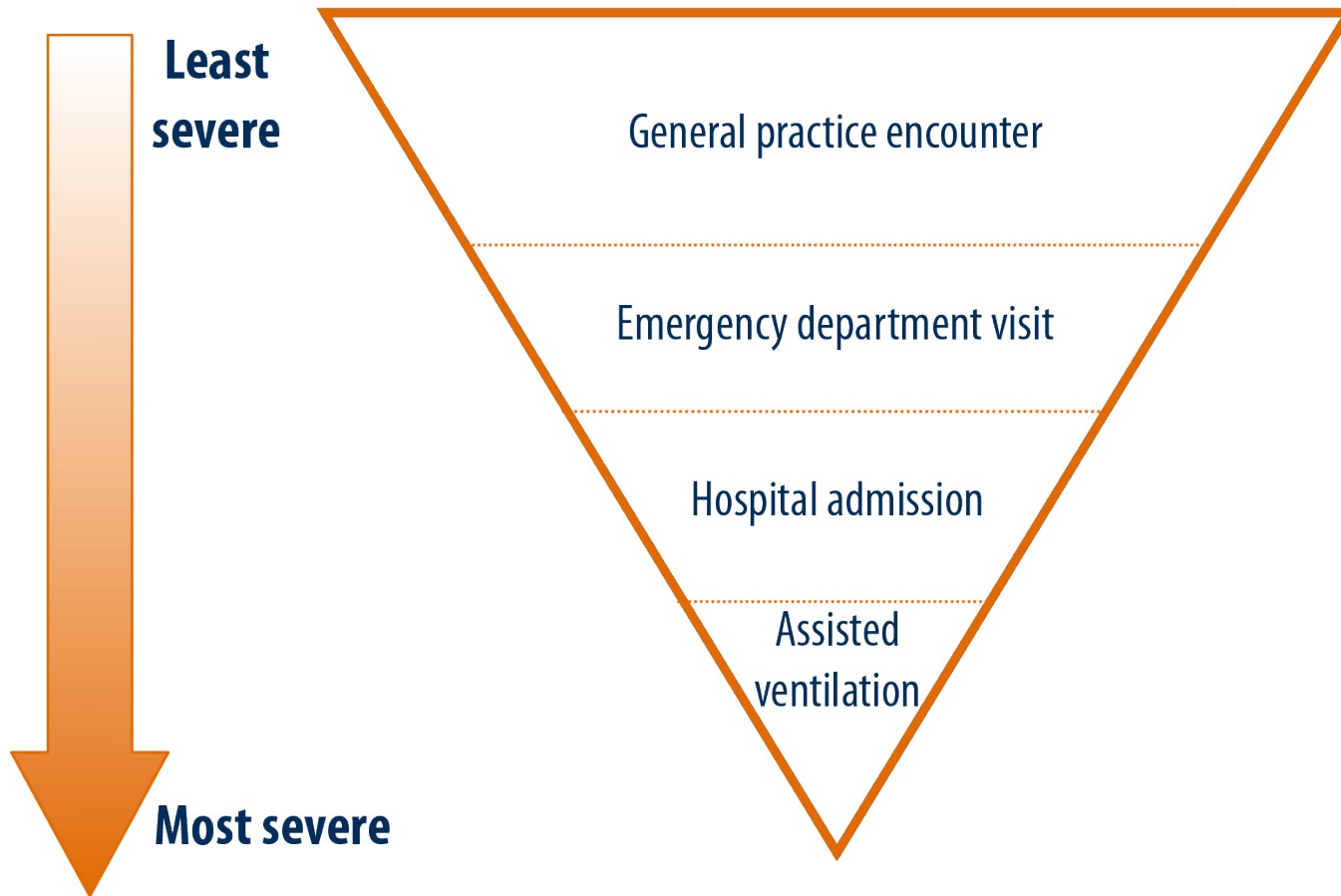
Australian Government
Australian Institute of Health and Welfare

ACAM
Australian Centre for
Asthma Monitoring

WOOLCOCK
INSTITUTE OF MEDICAL RESEARCH



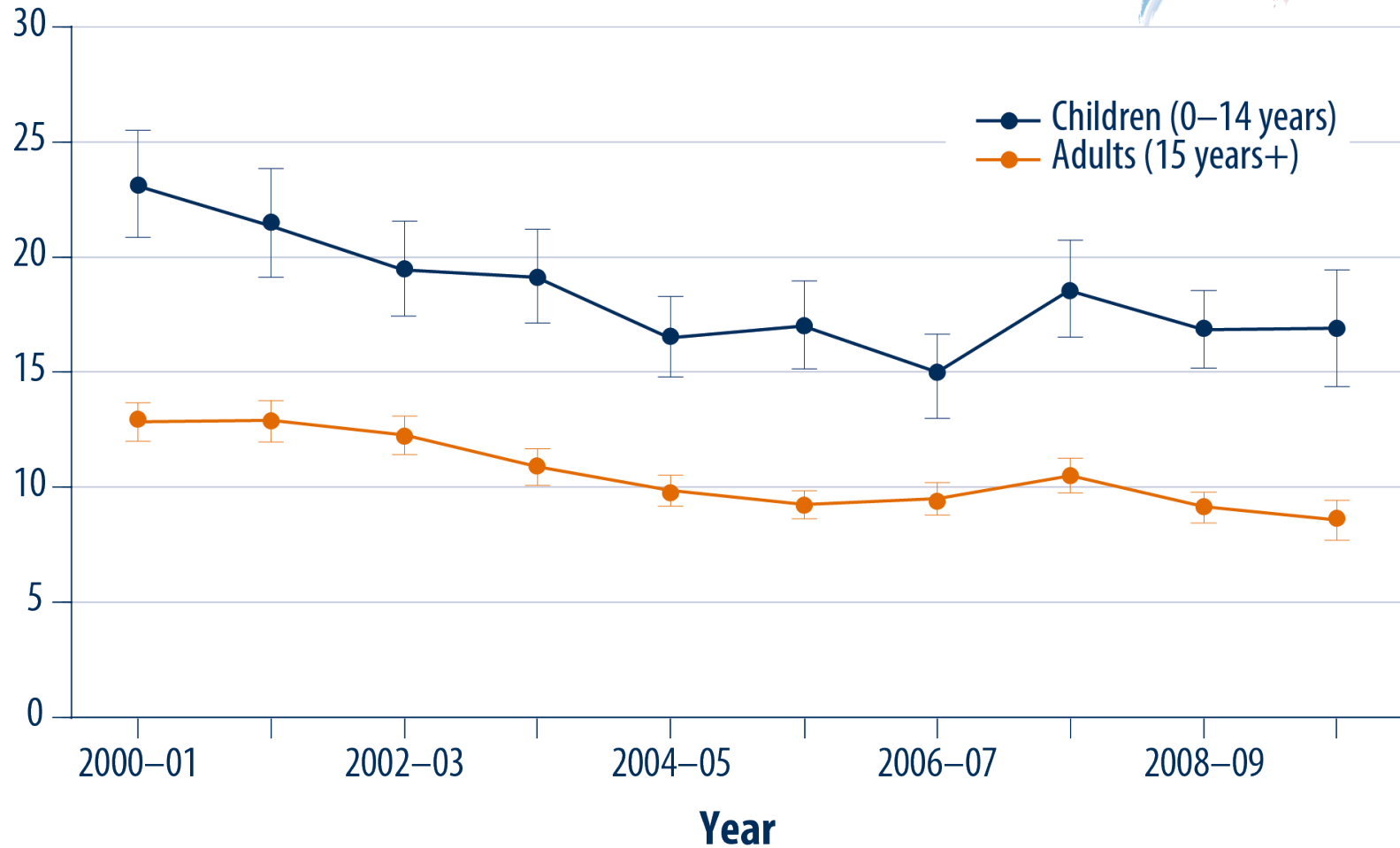
Types of health service use for exacerbations of asthma



Time trends in general practice encounters for asthma



General practice encounters per 100 population

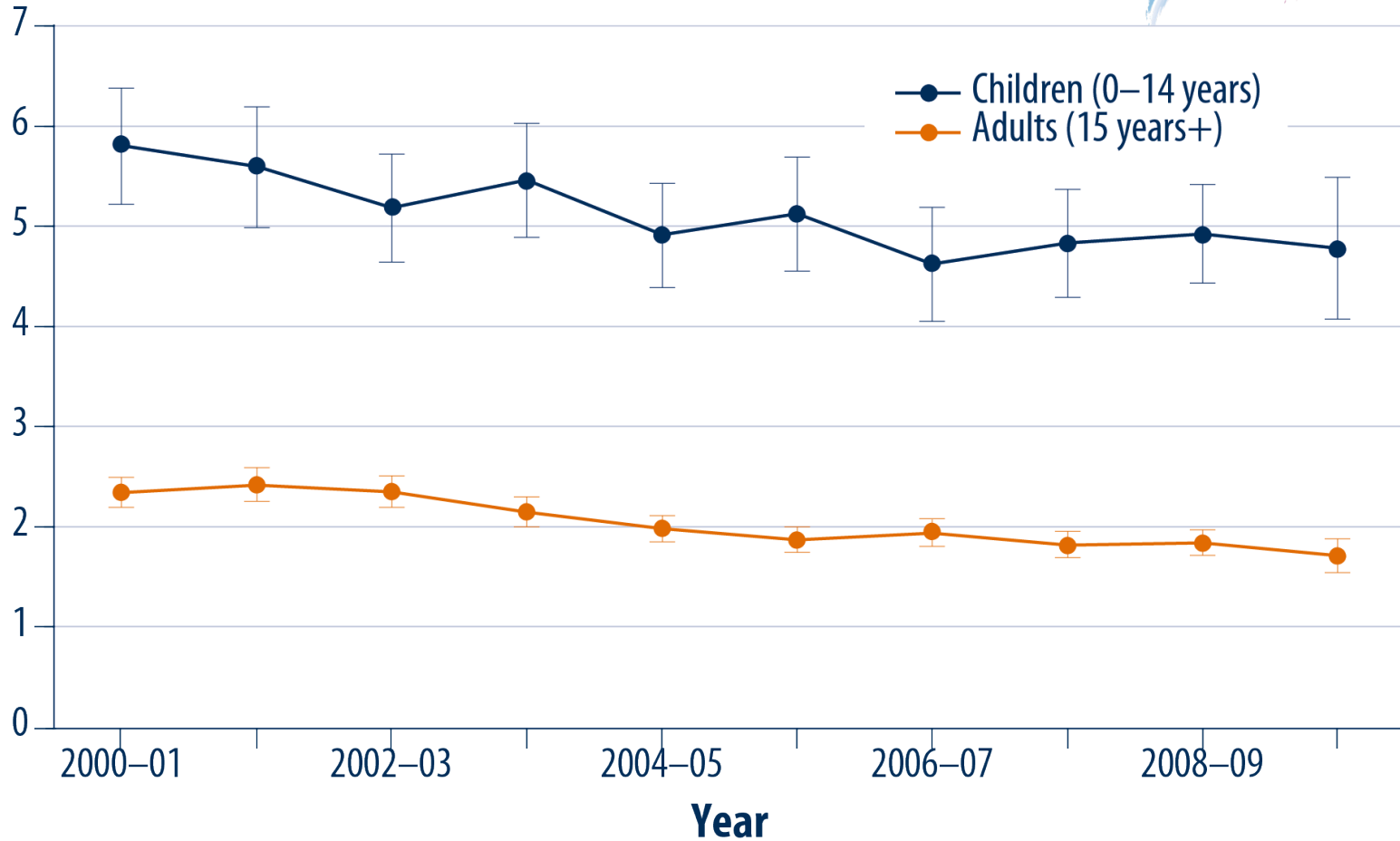


Source: BEACH Survey April 2000–March 2010

Time trends in the proportion of general practice encounters for asthma



Proportion of general practice encounters (per cent)

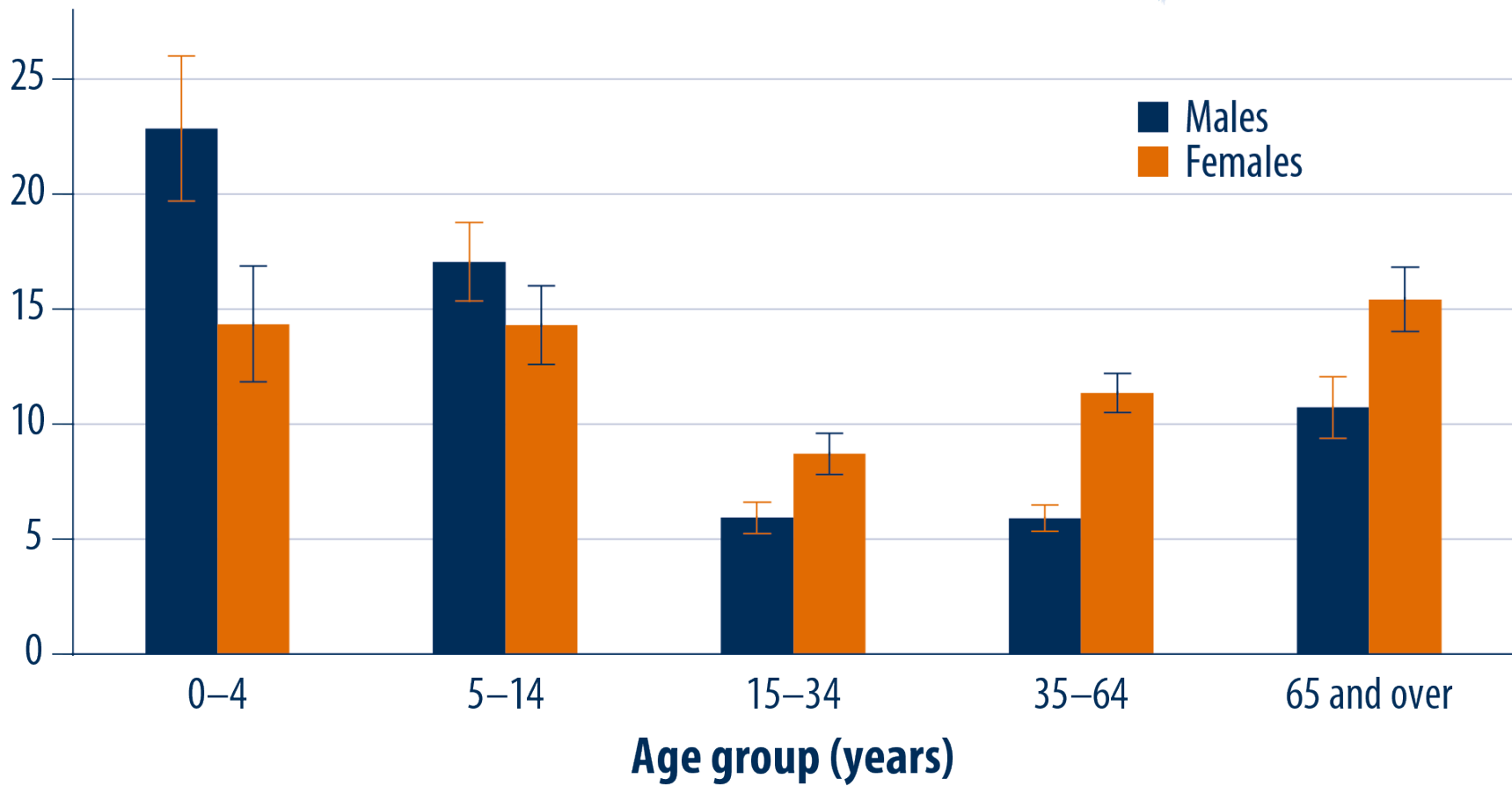


Source: BEACH Survey April 2000–March 2010

General practice encounters for asthma by age and sex



General practice encounters per 100 population

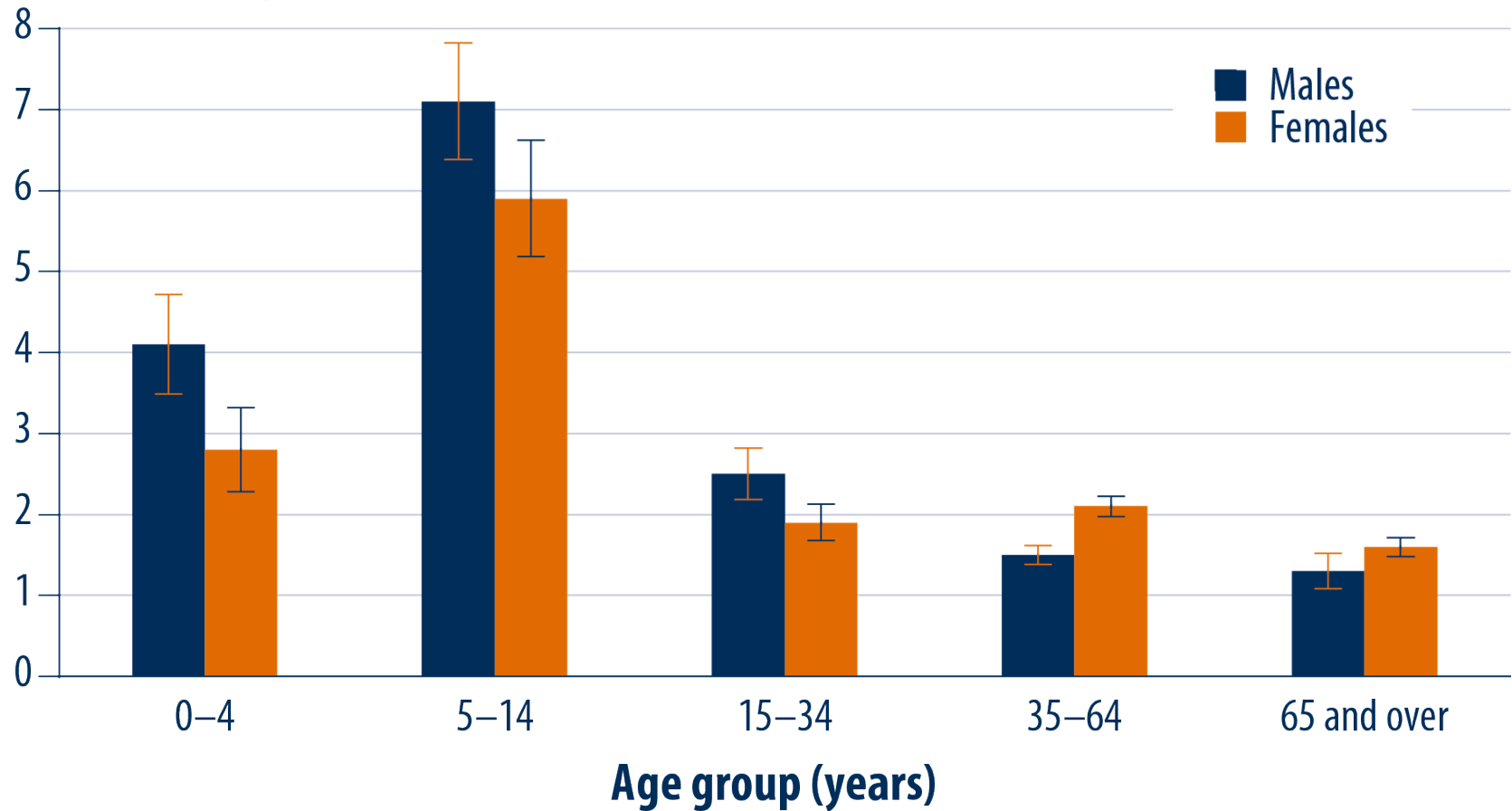


Source: BEACH Survey April 2007–March 2010

Proportion of general practice encounters for asthma by age and sex



Proportion of general practice encounters (per cent)

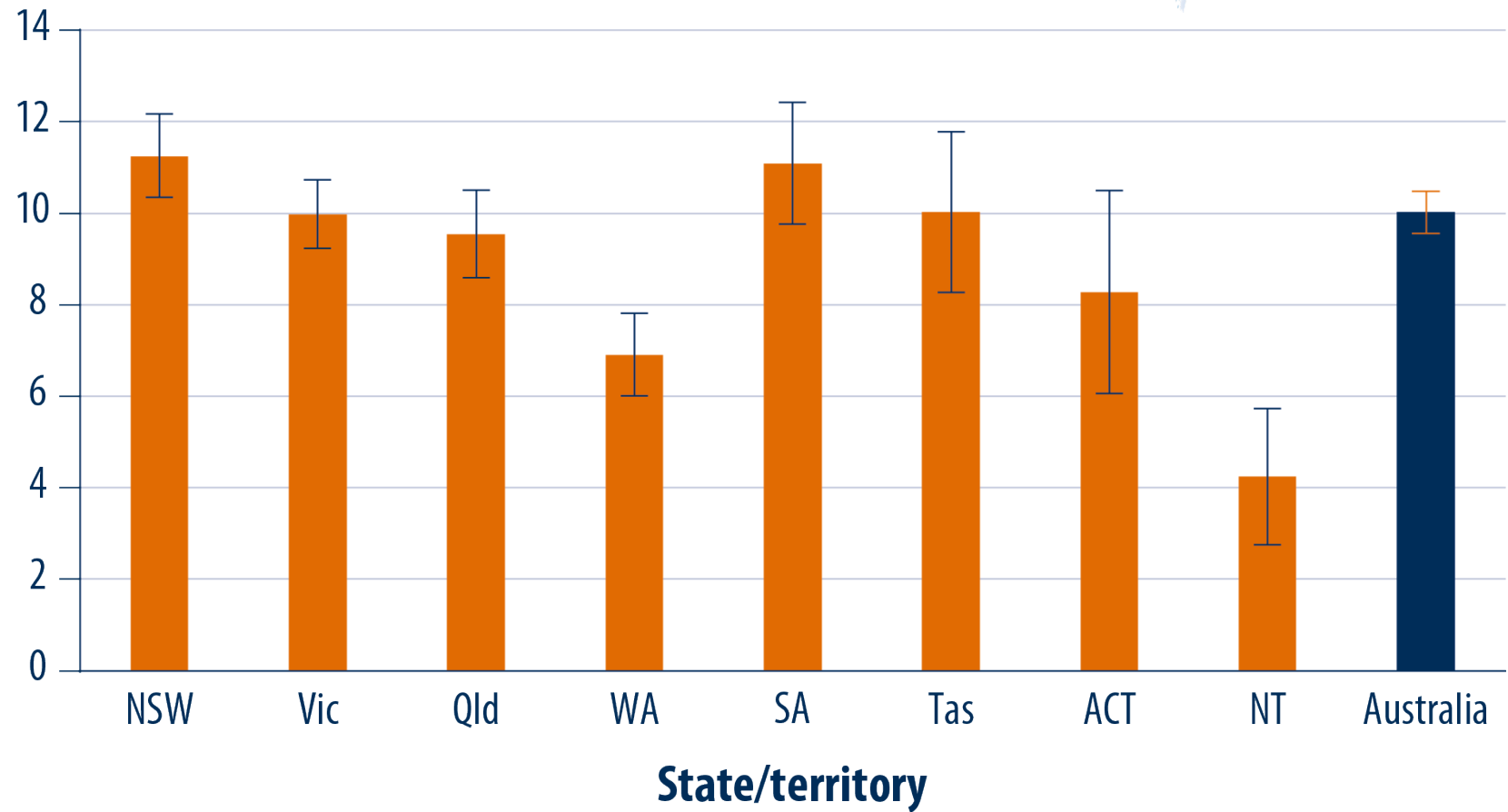


Source: BEACH Survey April 2007–March 2010

General practice encounters for asthma by state/territory



General practice encounters per 100 population

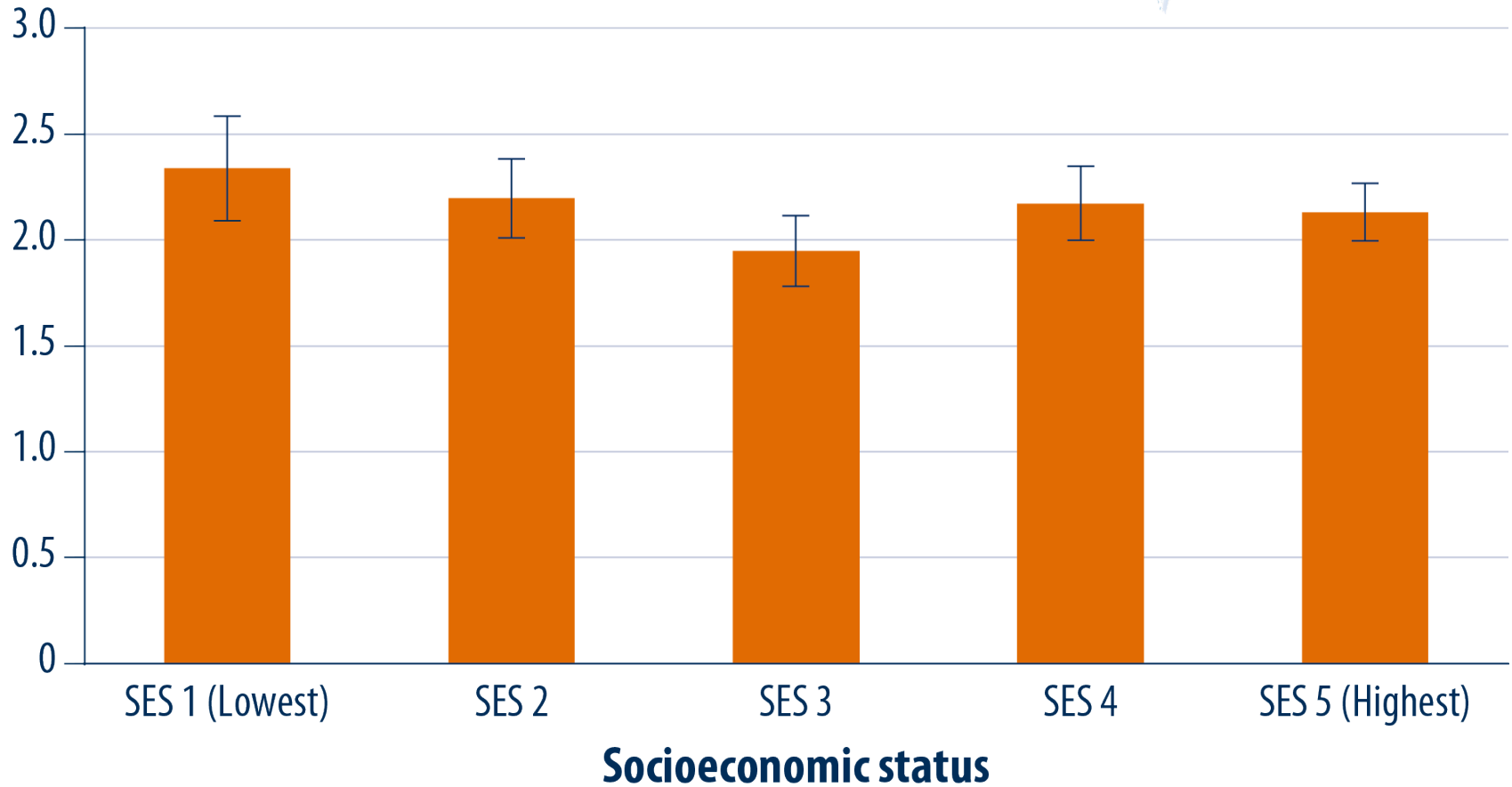


Source: BEACH Survey April 2007–March 2010

General practice encounters for asthma by socioeconomic status

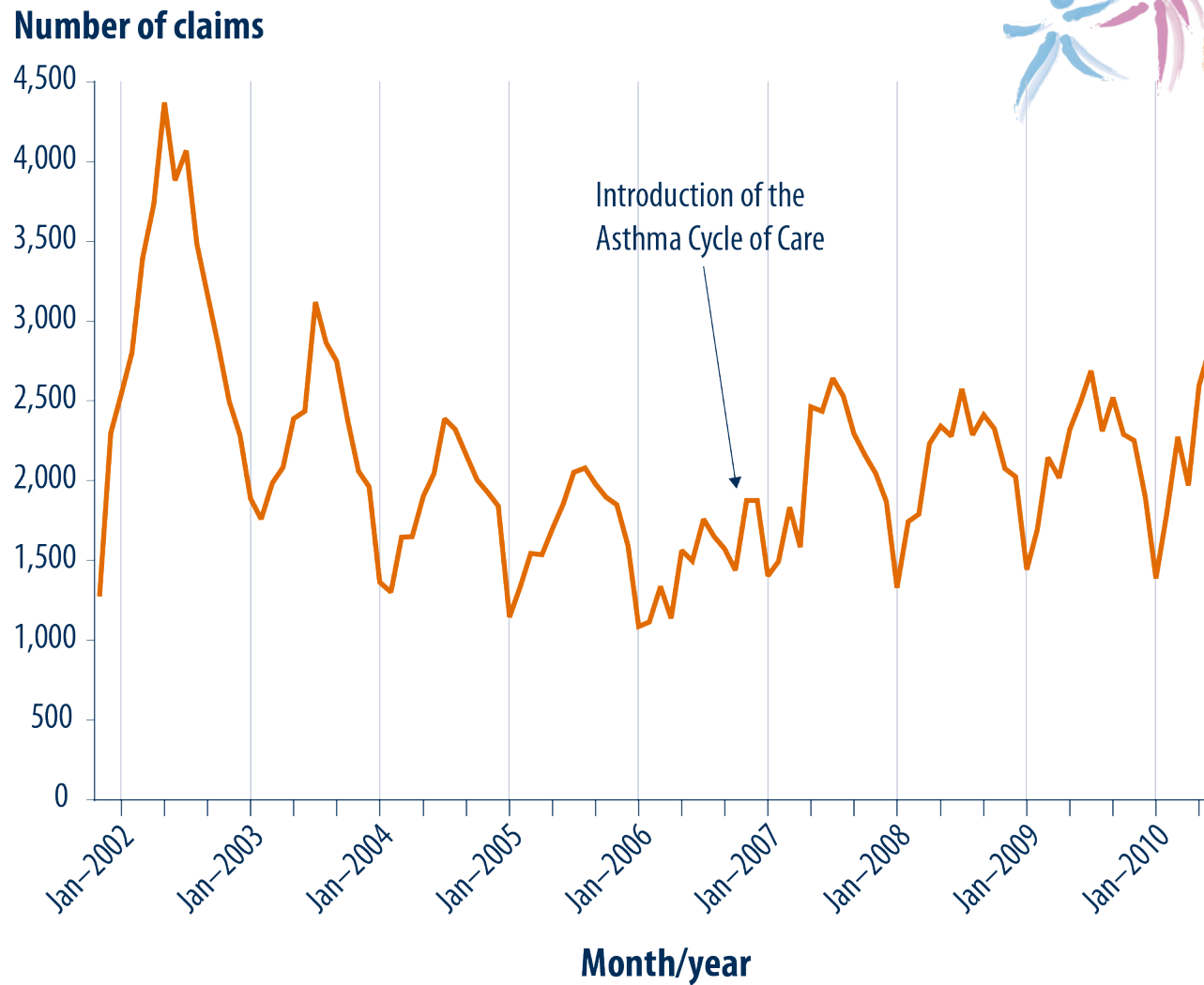


Proportion of all general practice encounters (per cent)



Source: BEACH Survey April 2007–March 2010

Time trends in claims for completed PIP Asthma Cycle of Care/Asthma 3+ Visit Plan



Source: Medicare Benefits Schedule November 2001–June 2010



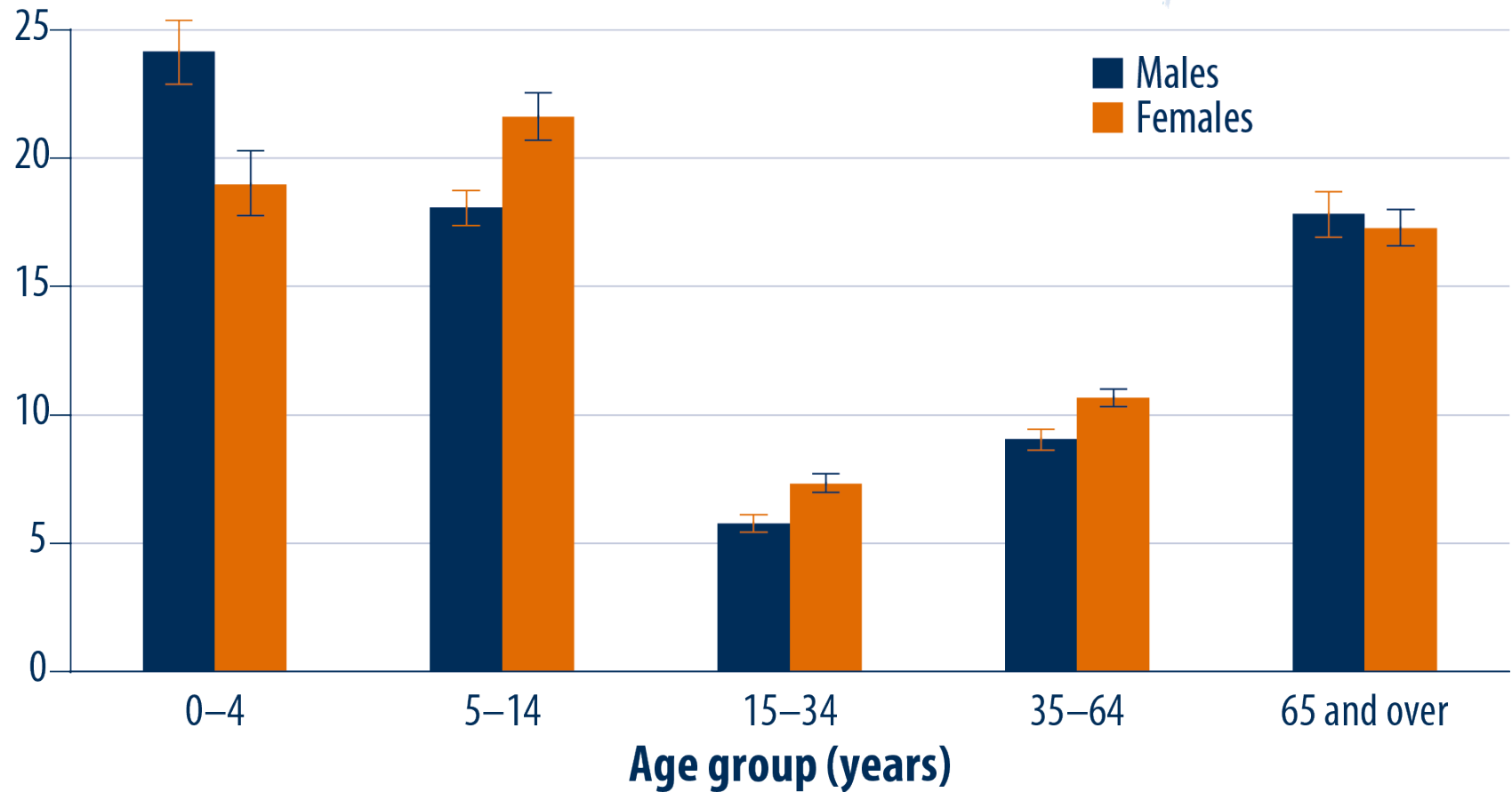
Australian Government
Australian Institute of Health and Welfare



PIP Asthma Cycle of Care claims among people with asthma by age and sex



Claims per 1,000 people with asthma

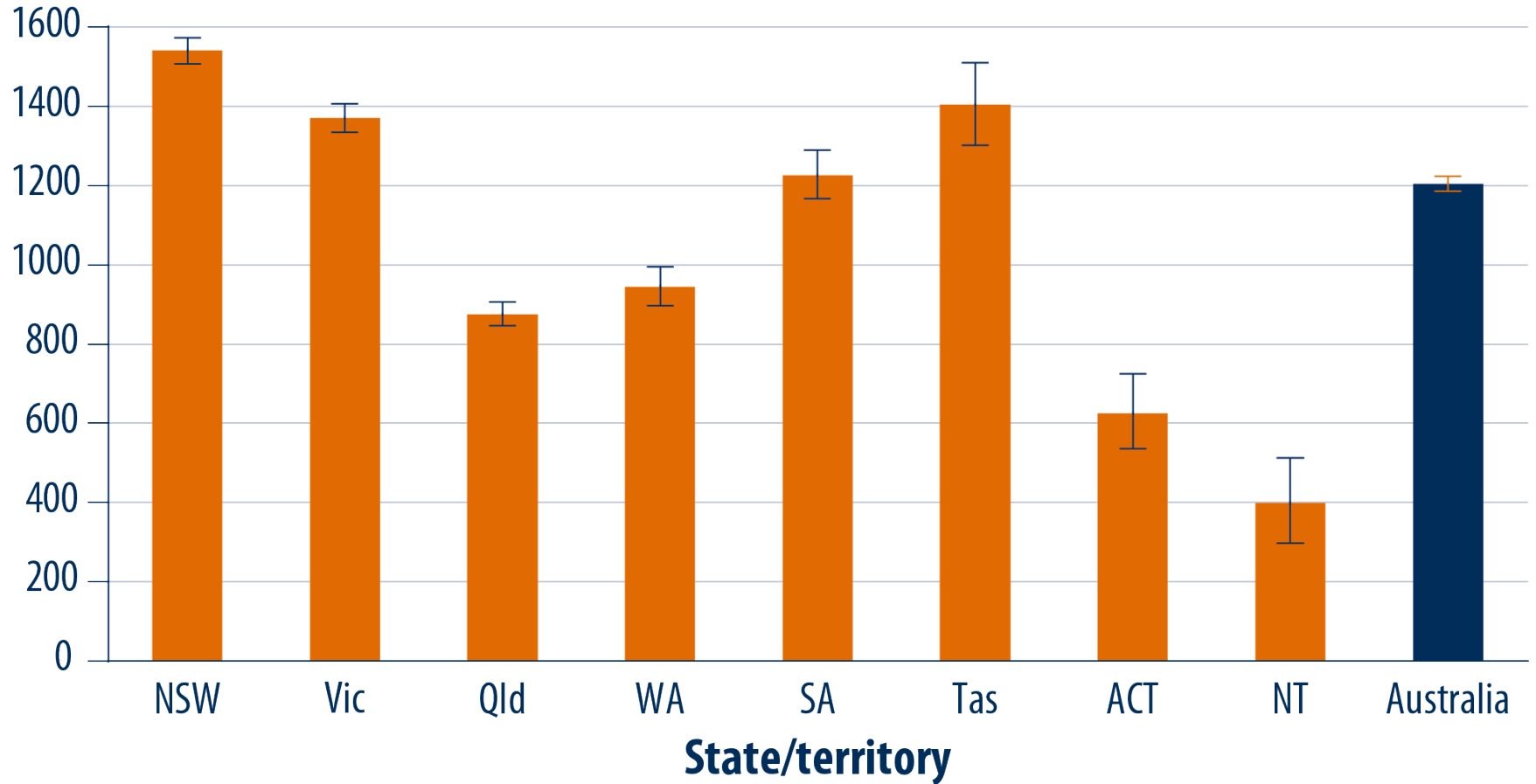


Source: Medicare Benefits Schedule 2009

PIP Asthma Cycle of Care claims among people with asthma by state/territory



Claims per 100,000 people with asthma

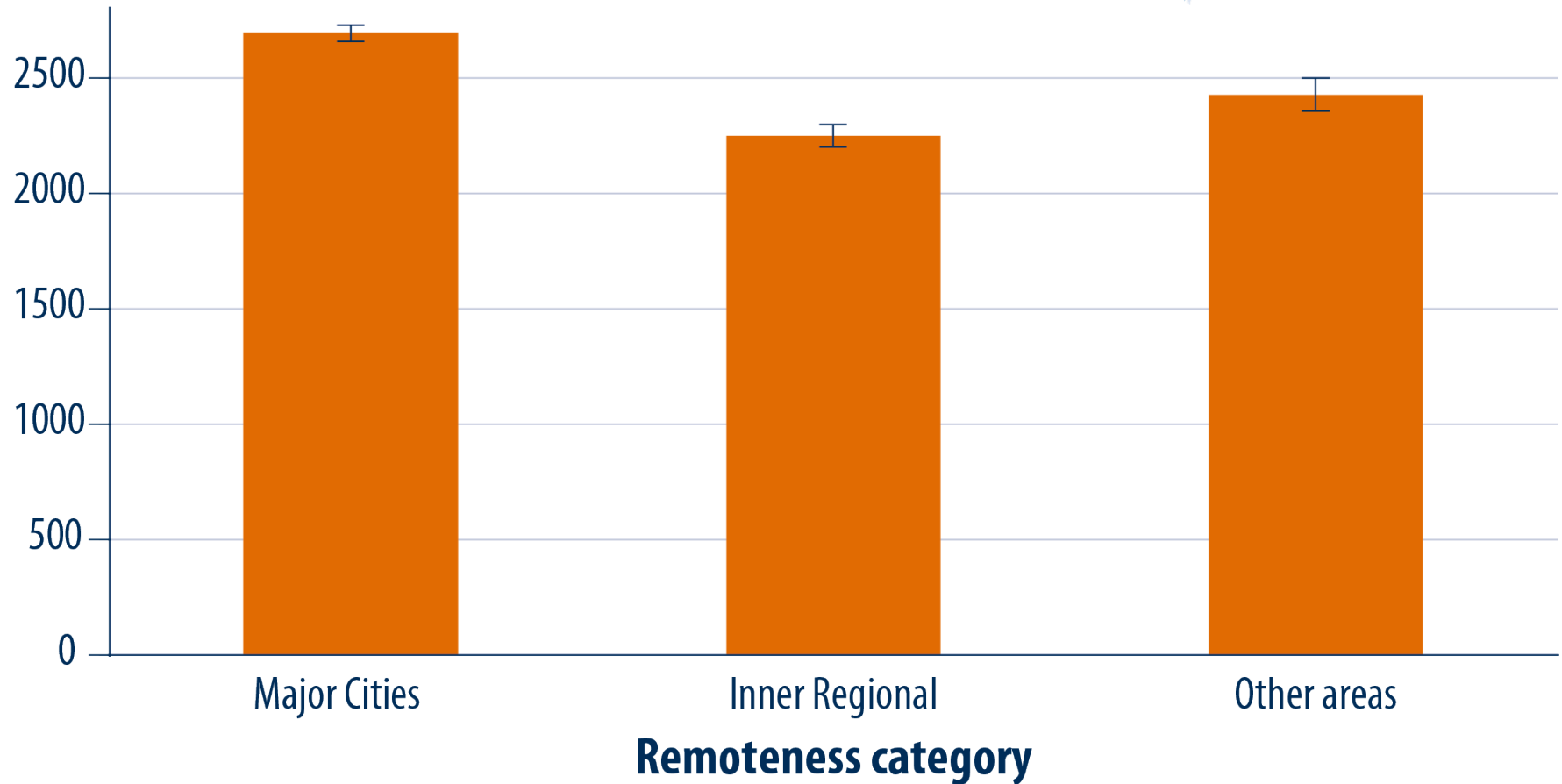


Source: Medicare Benefits Schedule 2009

PIP Asthma Cycle of Care claims among people with asthma by remoteness



Claims per 100,000 people with asthma

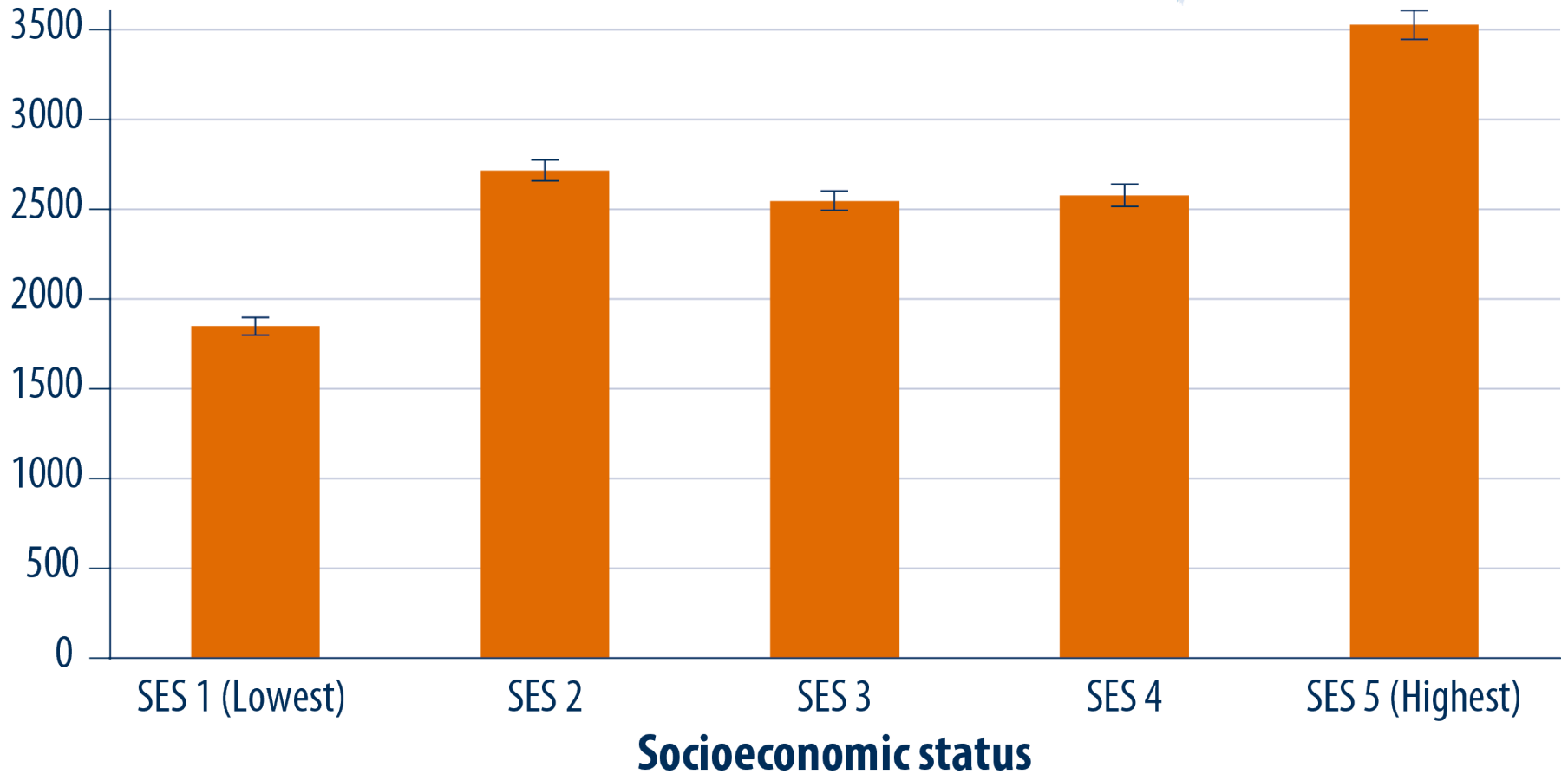


Source: Medicare Benefits Schedule 2009

PIP Asthma Cycle of Care claims among people with asthma by socioeconomic status



Claims per 100,000 people with asthma

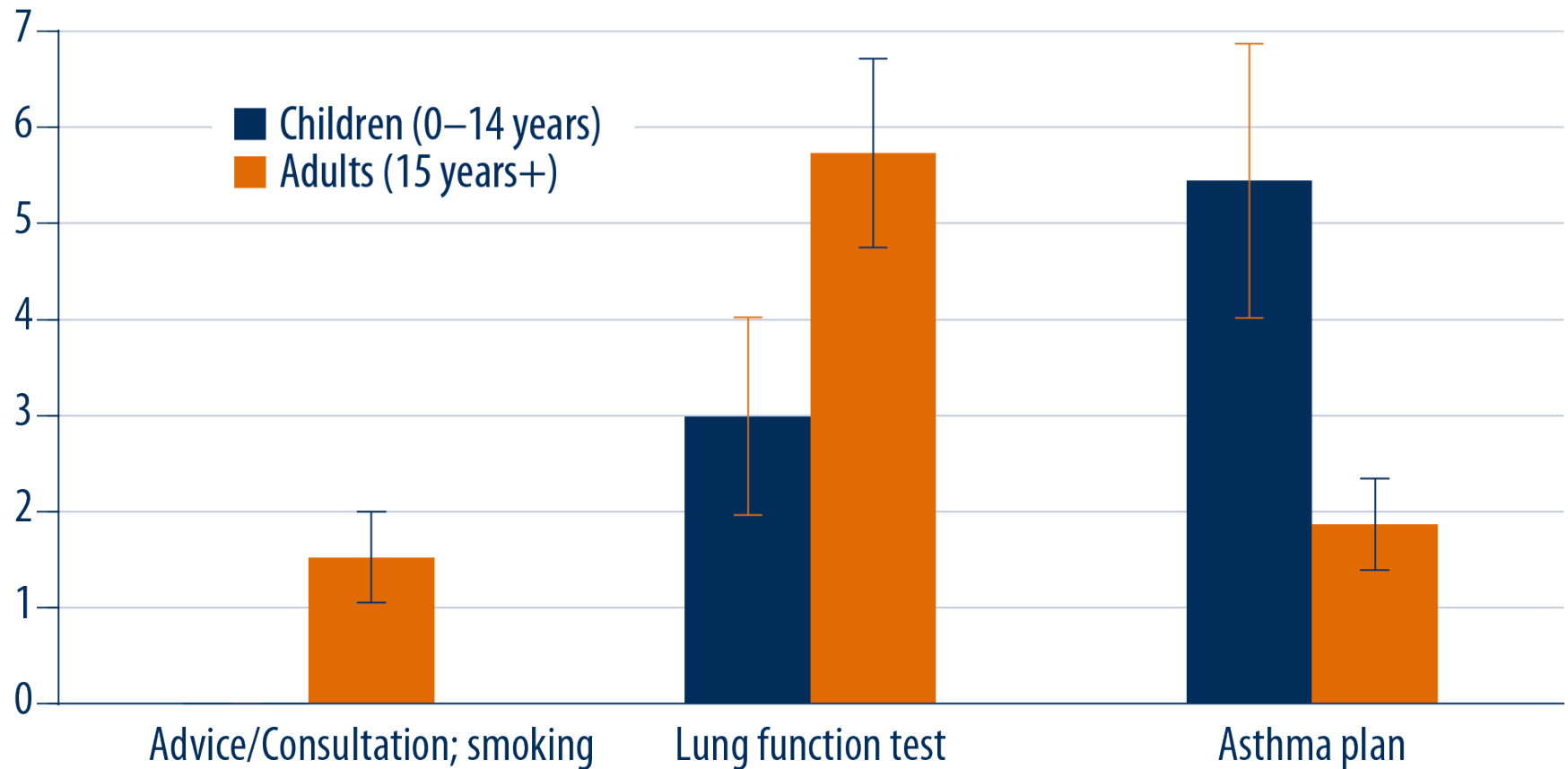


Source: Medicare Benefits Schedule 2009

Procedures, other treatments and counselling for asthma in general practice



Proportion of general practice encounters for asthma (per cent)

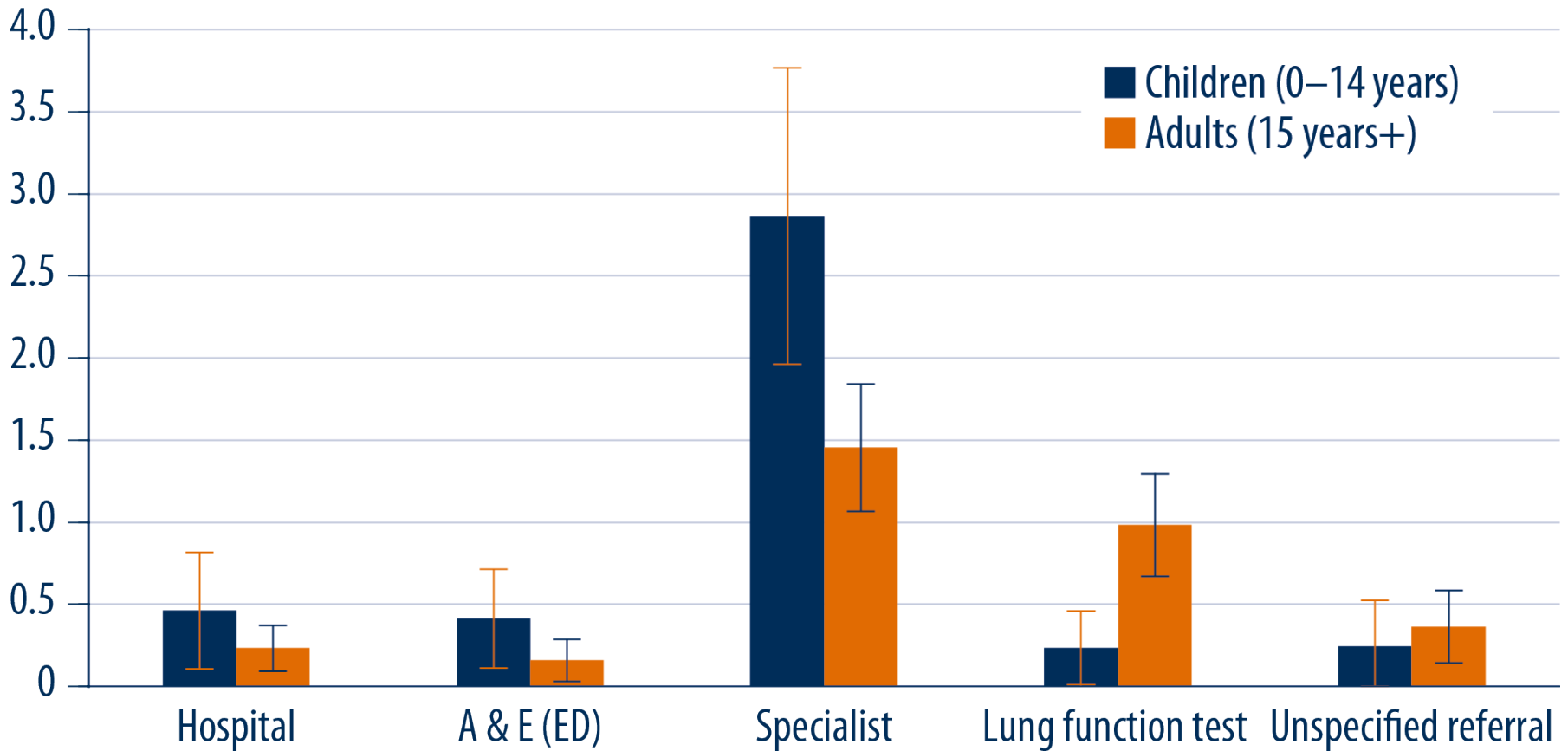


Source: BEACH Survey April 2007–March 2010

Referrals provided during asthma-related general practice encounters



Proportion of general practice encounters for asthma (per cent)

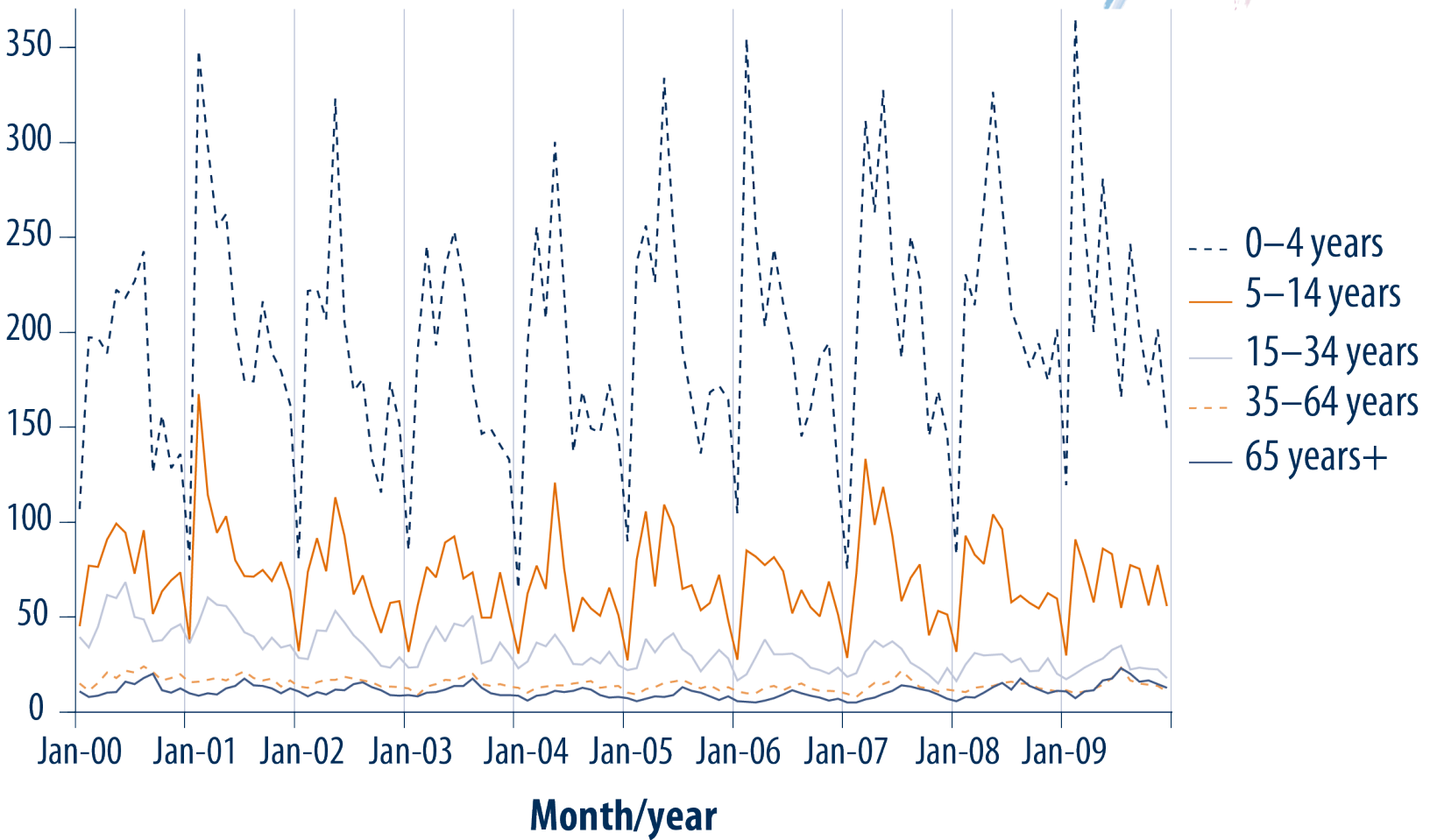


Source: BEACH Survey April 2007–March 2010

ED visits for asthma, by age and month



ED visits for asthma per 100,000 population

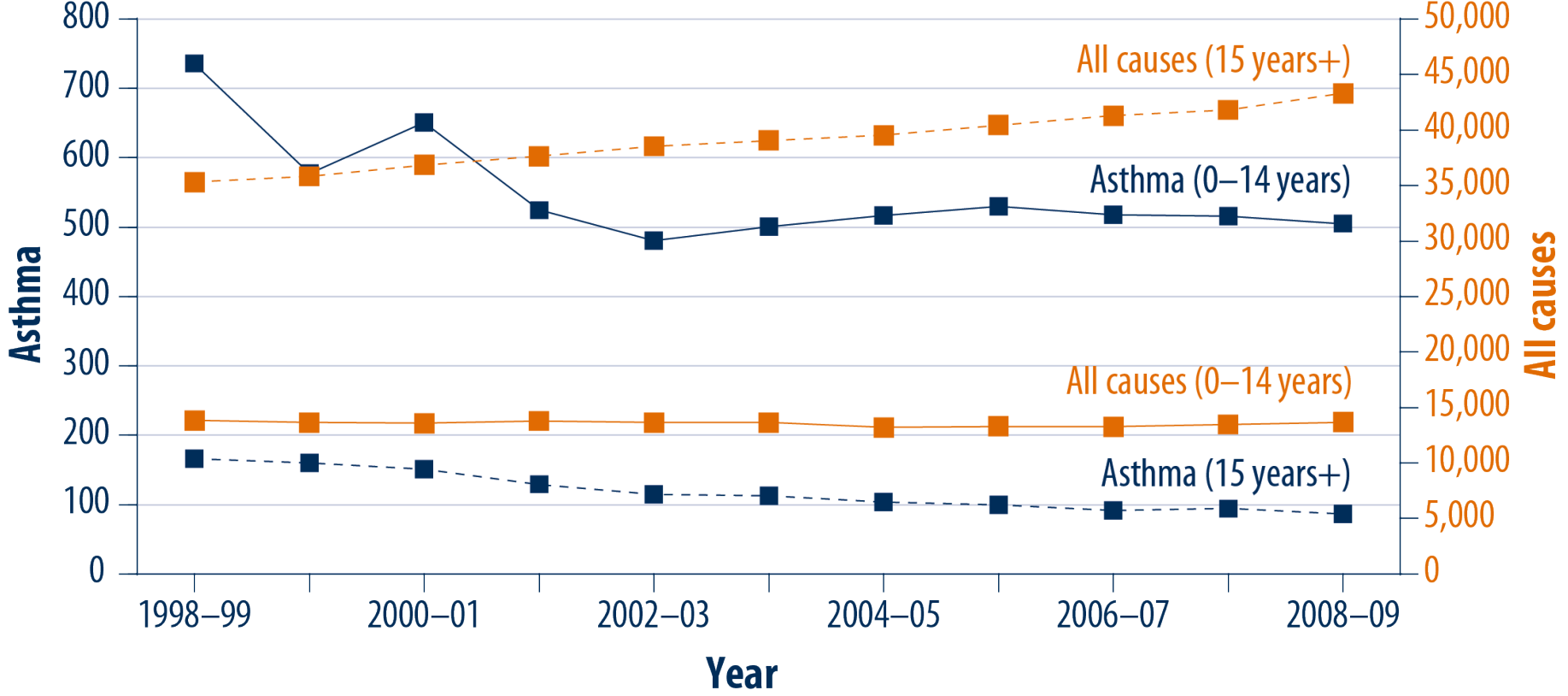


Source: NSW Emergency Department Data Collection

Time trends in hospital separations for asthma and all causes by age



Hospital separations per 100,000 population

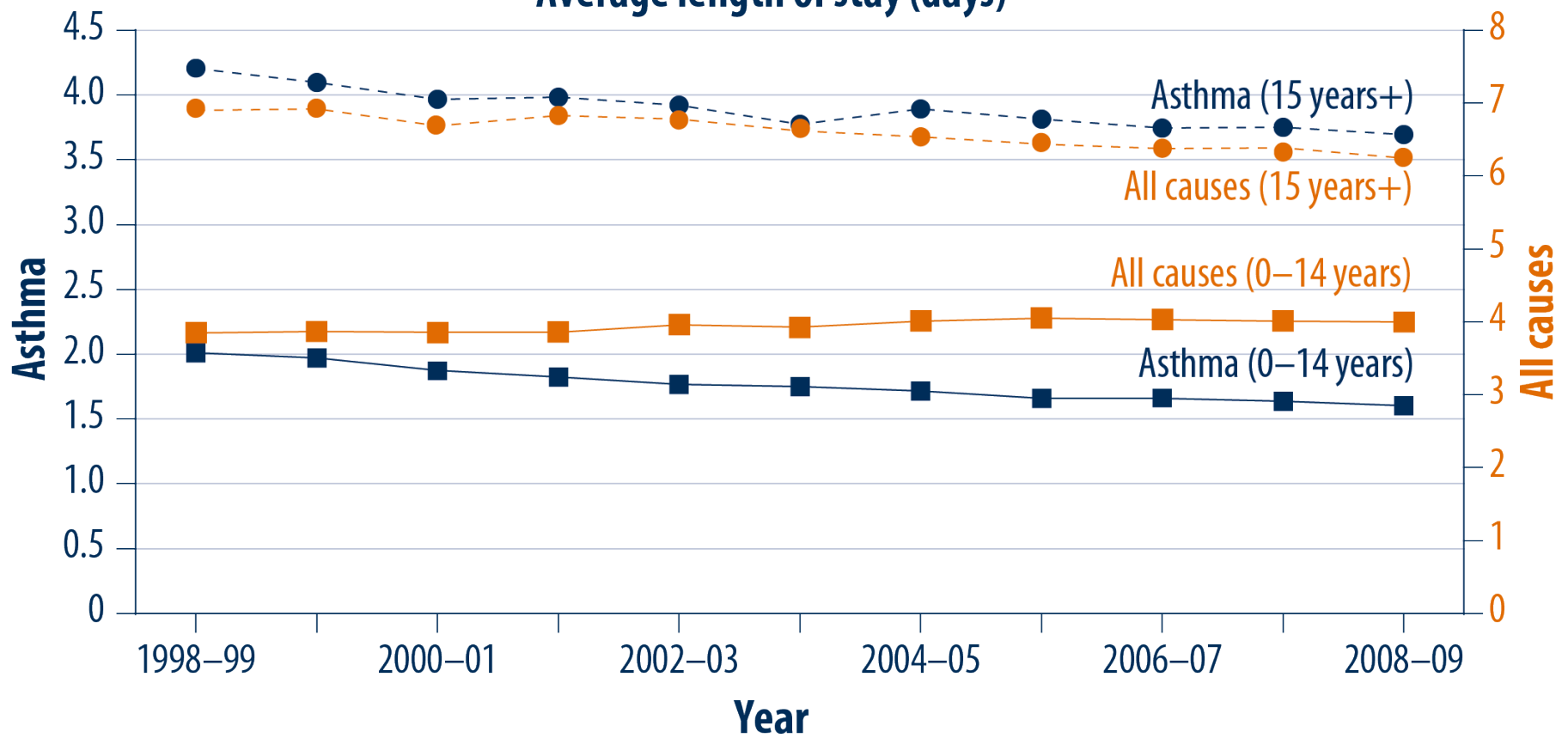


Source: AIHW National Hospital Morbidity Database

Time trends in average length of stay for asthma and all causes by age

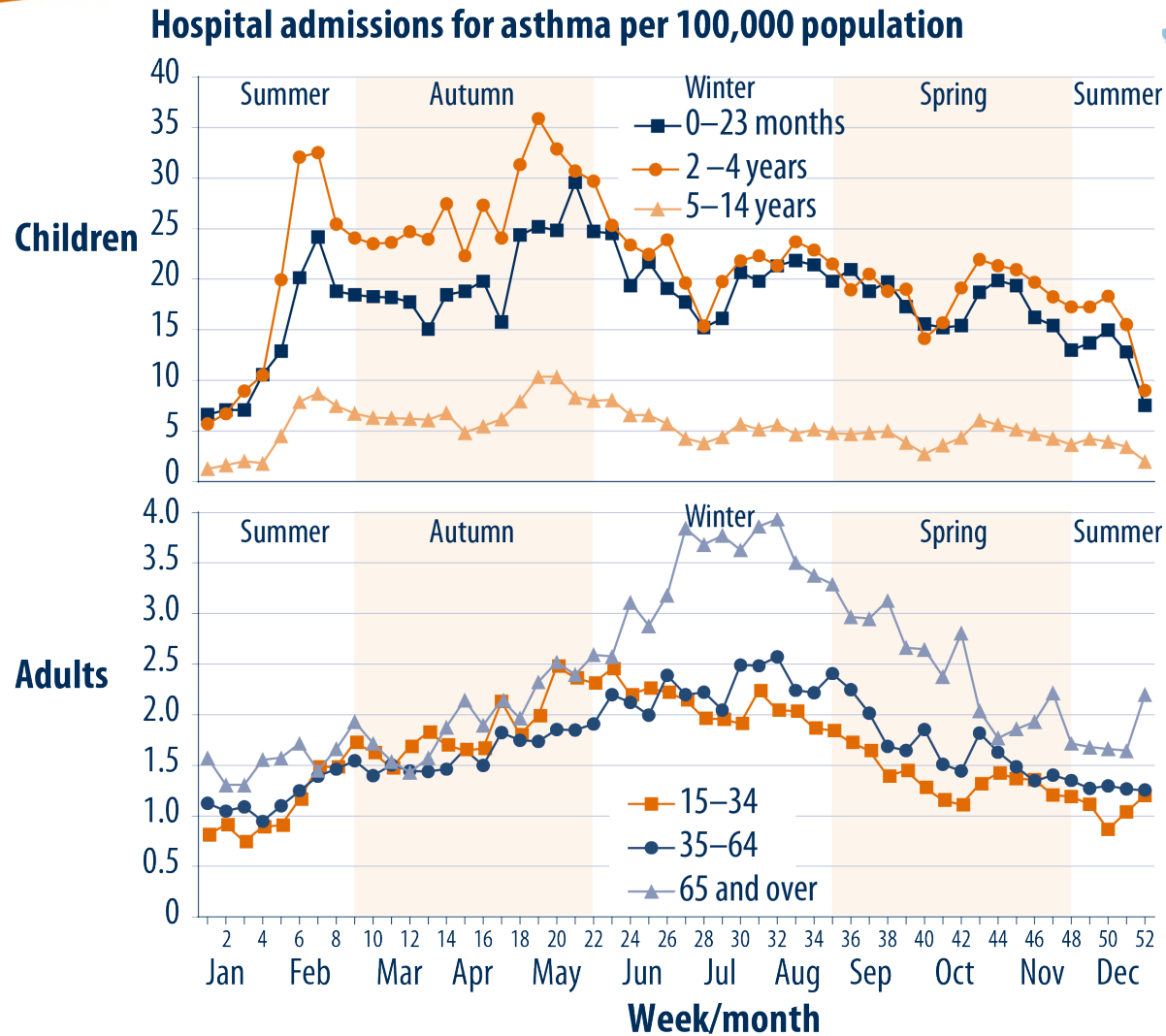


Average length of stay (days)



Source: AIHW National Hospital Morbidity Database

Seasonal variation in hospital separations for asthma, by age

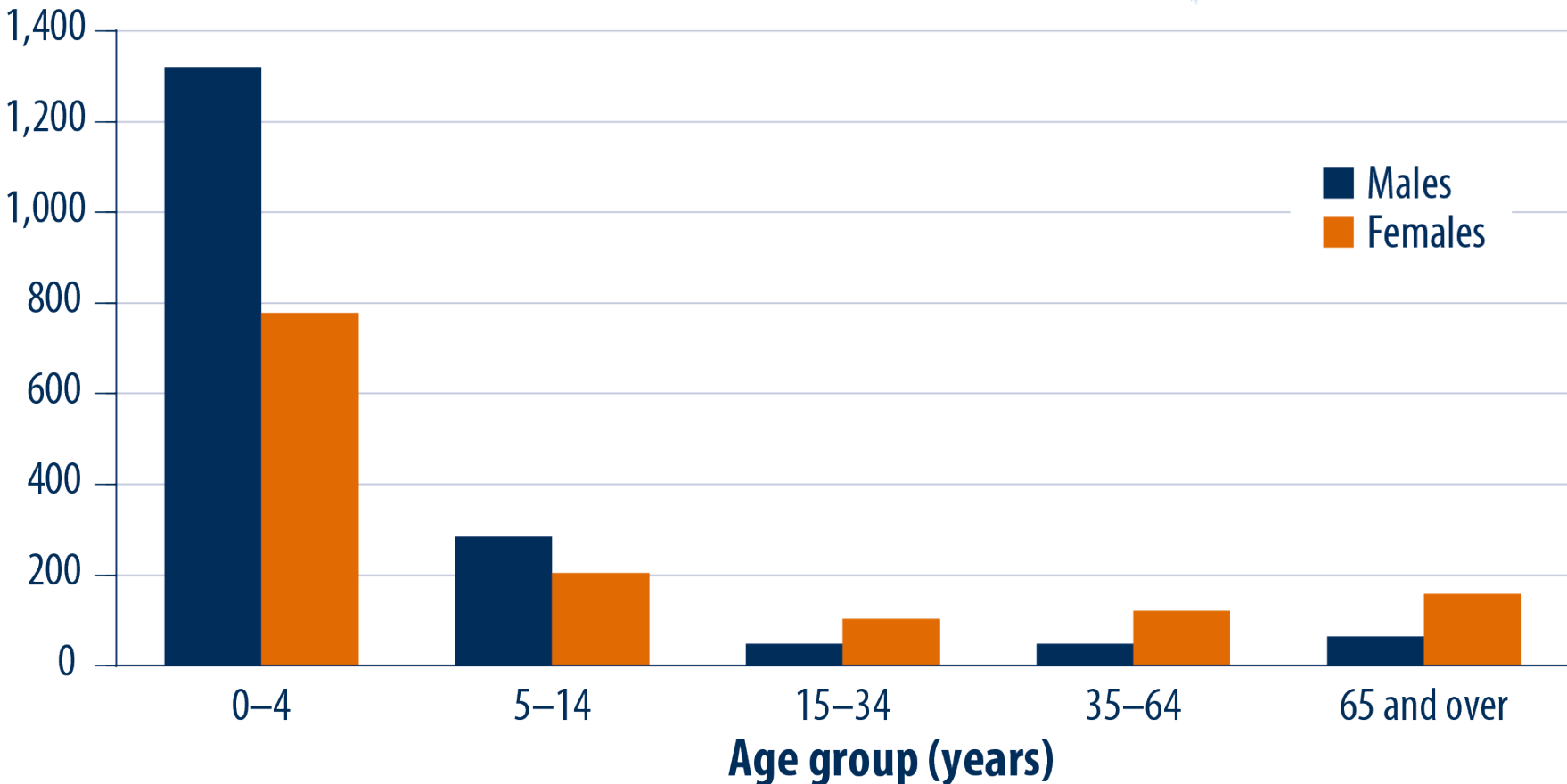


Source: AIHW National Hospital Morbidity Database 2007 and 2008

Hospital separations for asthma by age and sex

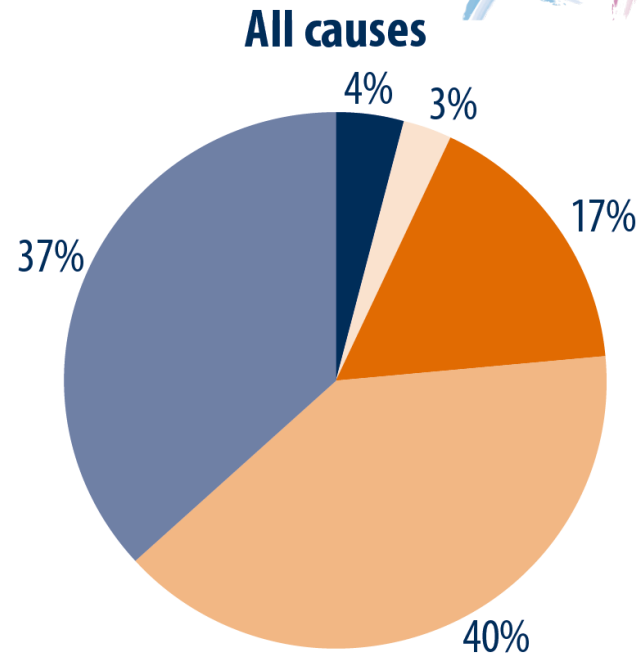
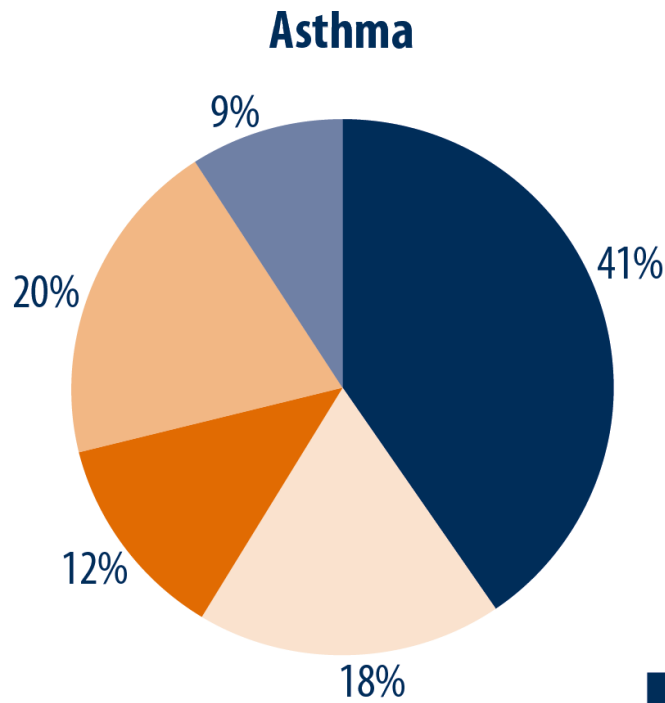


Hospital separations per 100,000 population



Source: AIHW National Hospital Morbidity Database 2008–2009

Age distribution for hospital separations for asthma and all causes



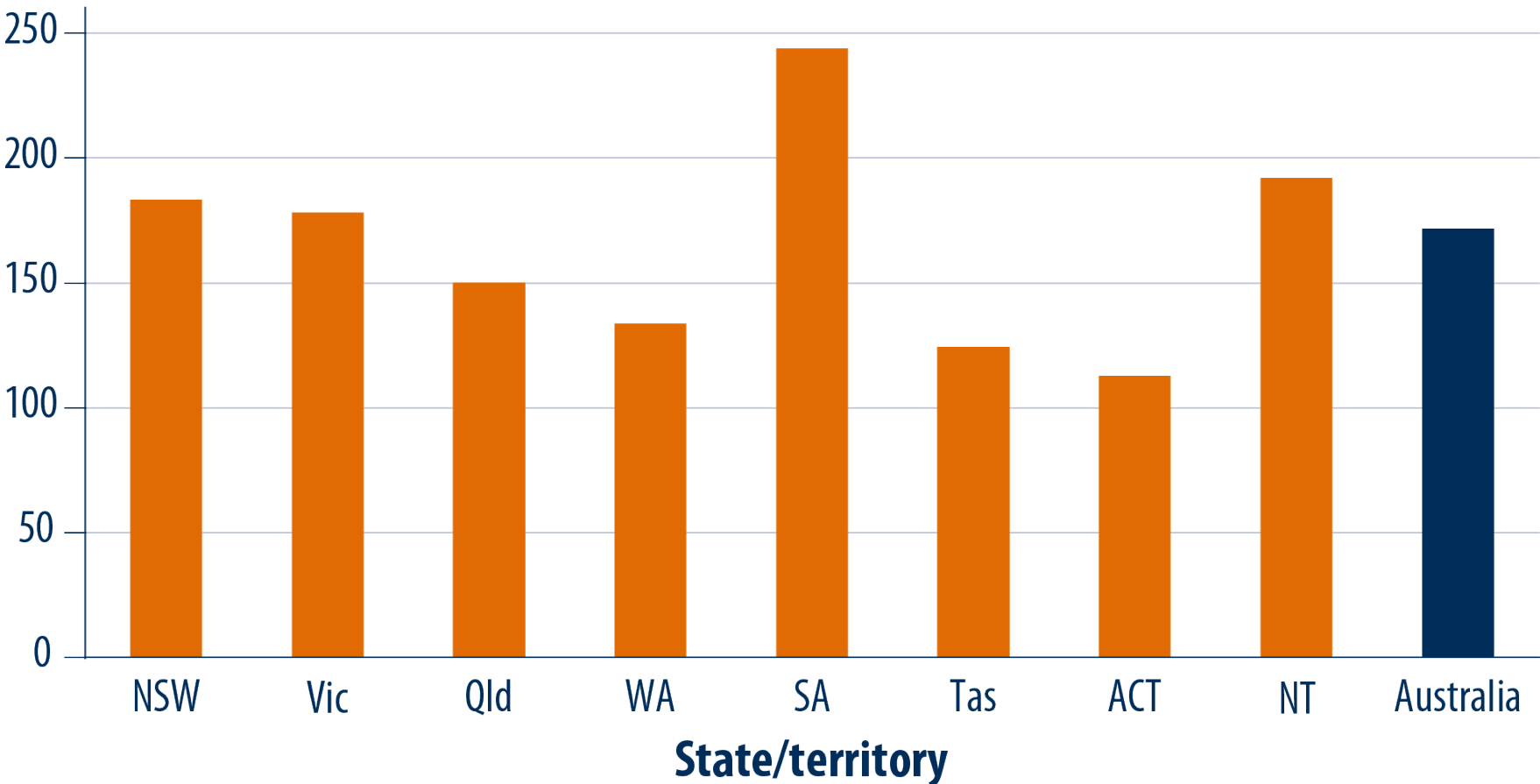
- 0-4 years
- 5-14 years
- 15-34 years
- 35-64 years
- 65 years and over

Source: AIHW National Hospital Morbidity Database 2008-2009

Hospital separations for asthma by state/territory



Hospital separations per 100,000 population



Source: AIHW National Hospital Morbidity Database 2008–2009

Hospital separations for asthma and all causes, children and adults, by state/territory



Hospital separations for asthma and all causes, per 100,000 population

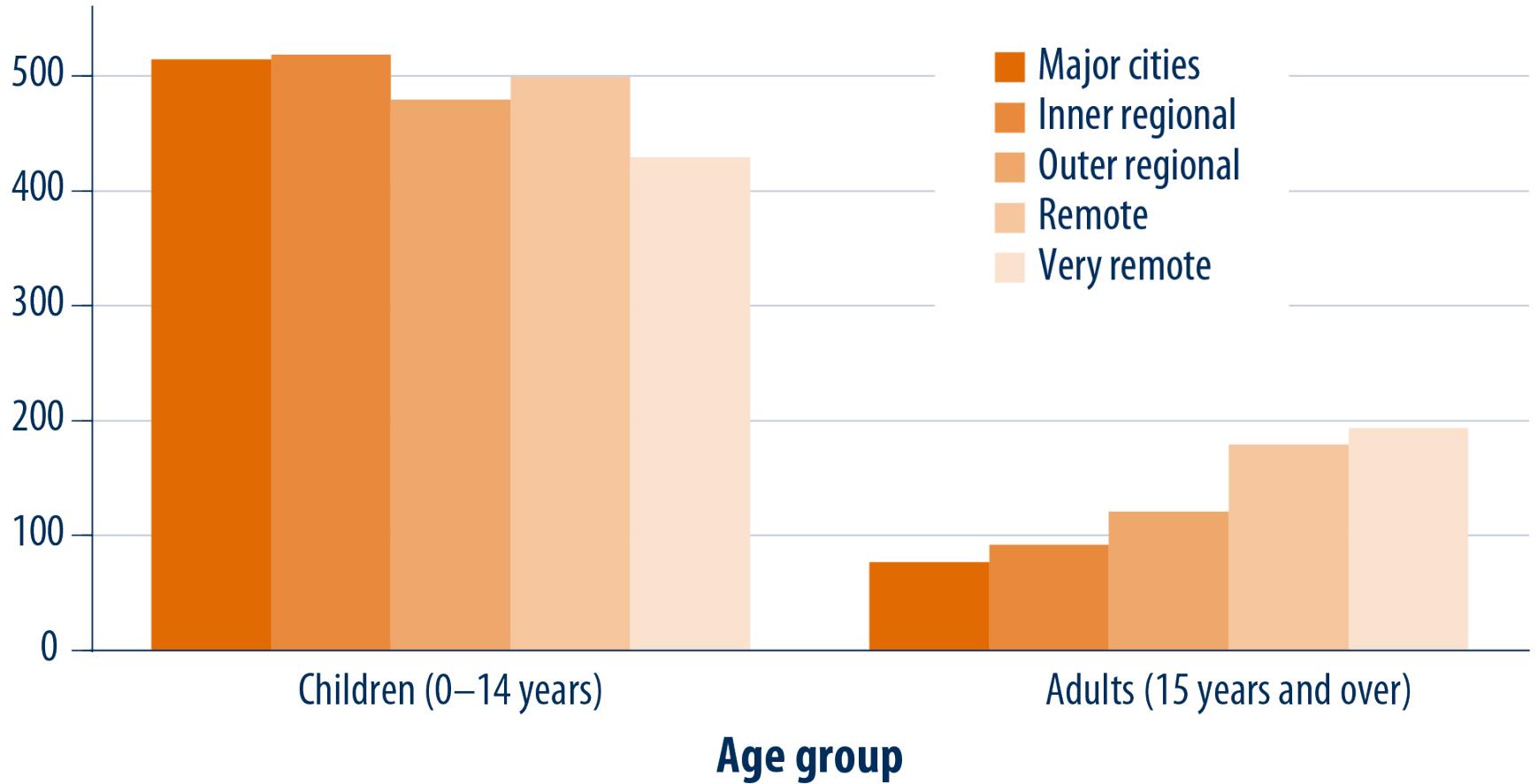


Source: AIHW National Hospital Morbidity Database 2008-2009

Hospital separations for asthma by age and remoteness



Hospital separations per 100,000 population

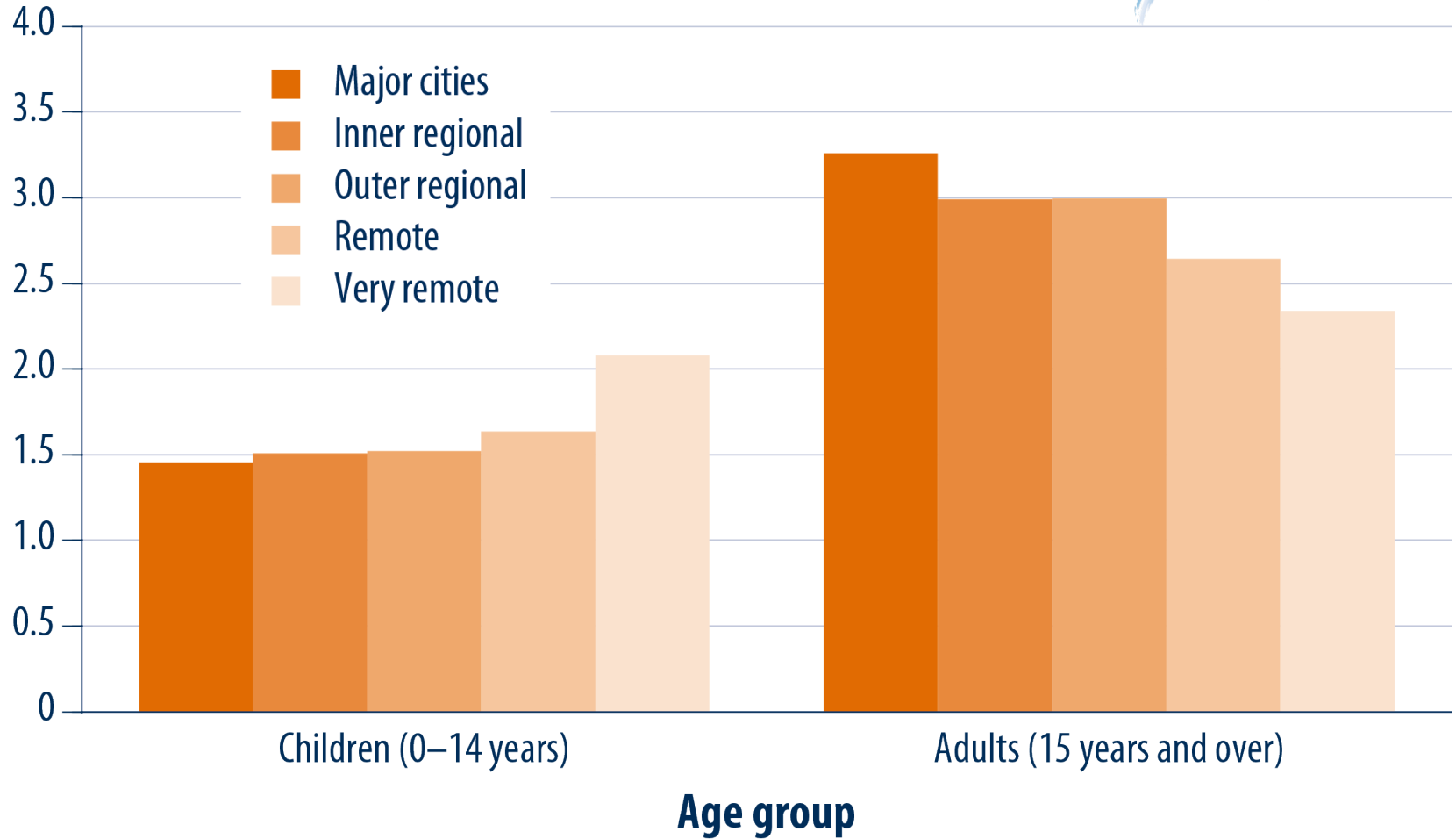


Source: AIHW National Hospital Morbidity Database 2008-2009

Average length of stay for asthma by age and remoteness



Average length of stay (days)

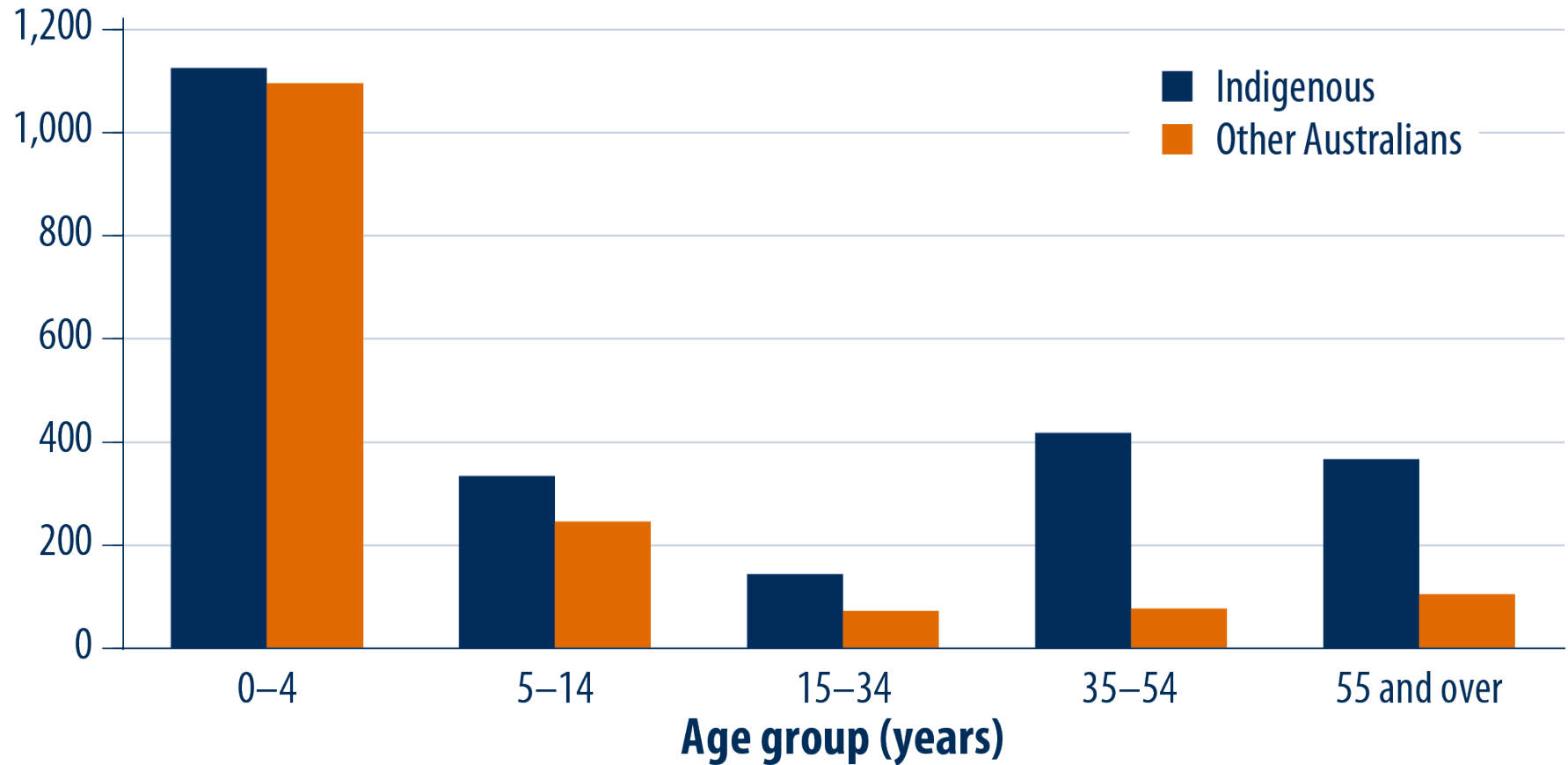


Source: AIHW National Hospital Morbidity Database 2008-2009

Hospital separations for asthma by age and Indigenous status



Hospital separations per 100,000 population

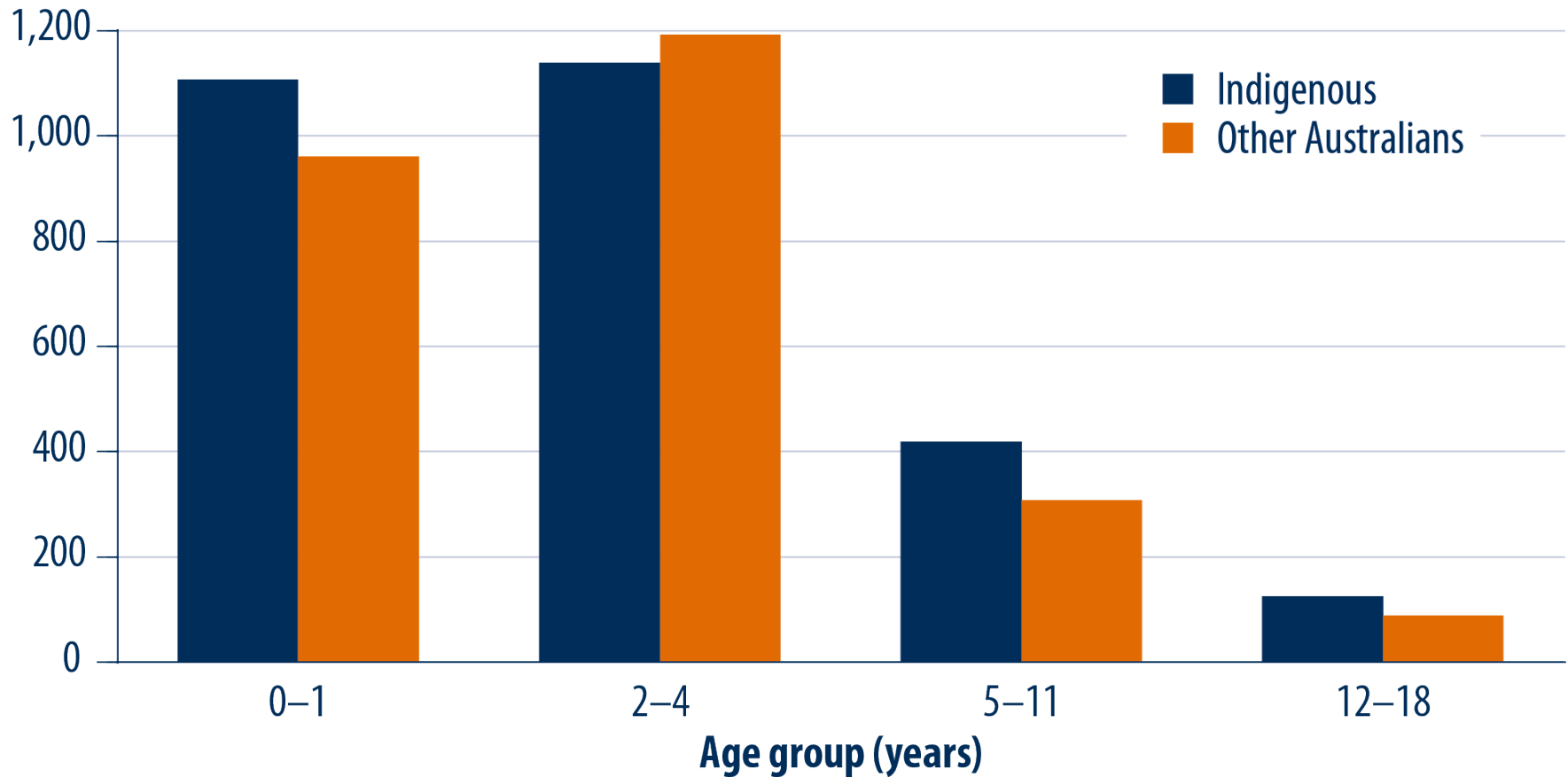


Source: AIHW National Hospital Morbidity Database 2008–2009

Hospital separations for asthma by age and Indigenous status, children 0–18 years

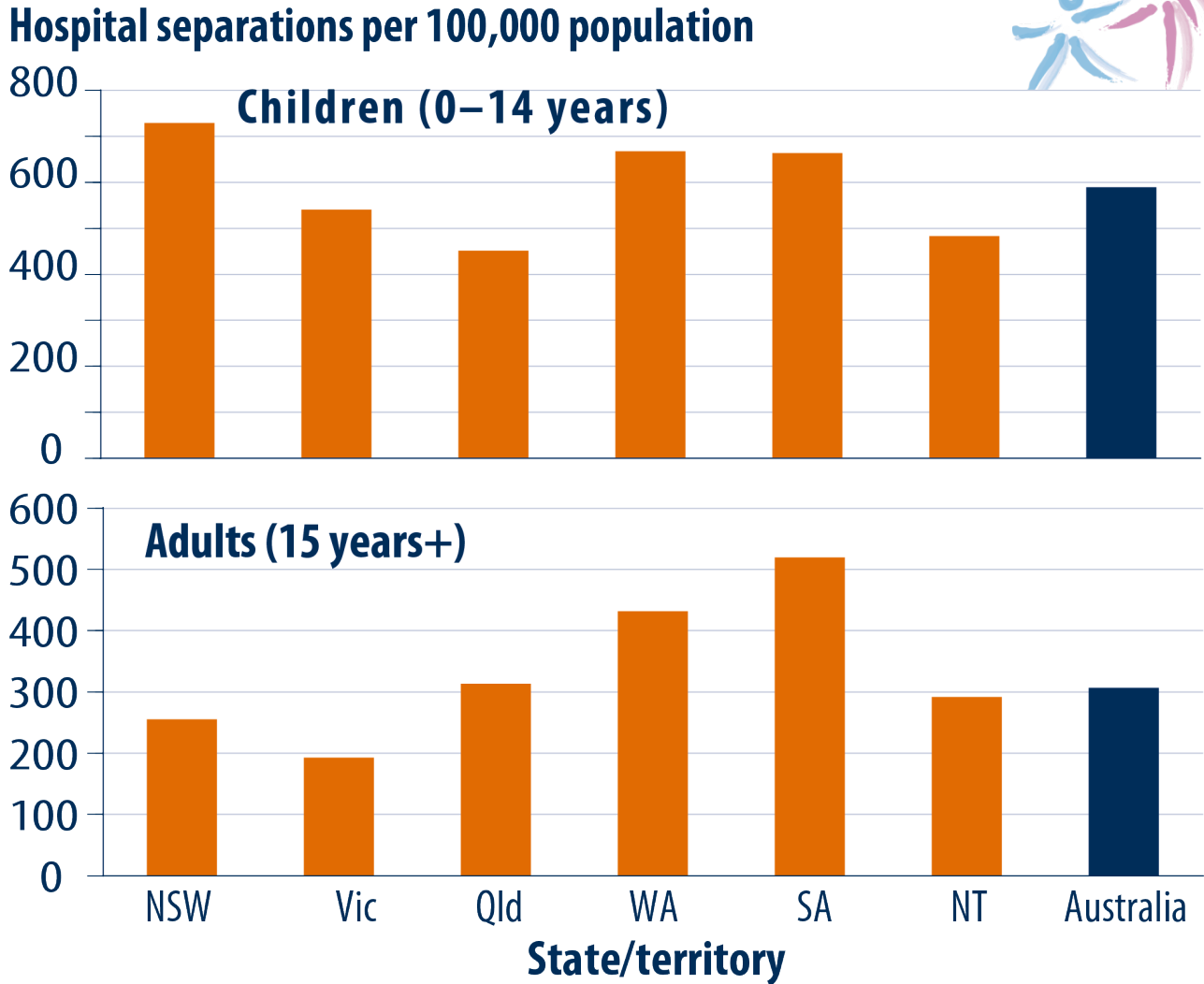


Hospital separations per 100,000 population



Source: AIHW National Hospital Morbidity Database 2008–2009

Hospital separations for asthma among Indigenous Australians, children and adults, by state/territory

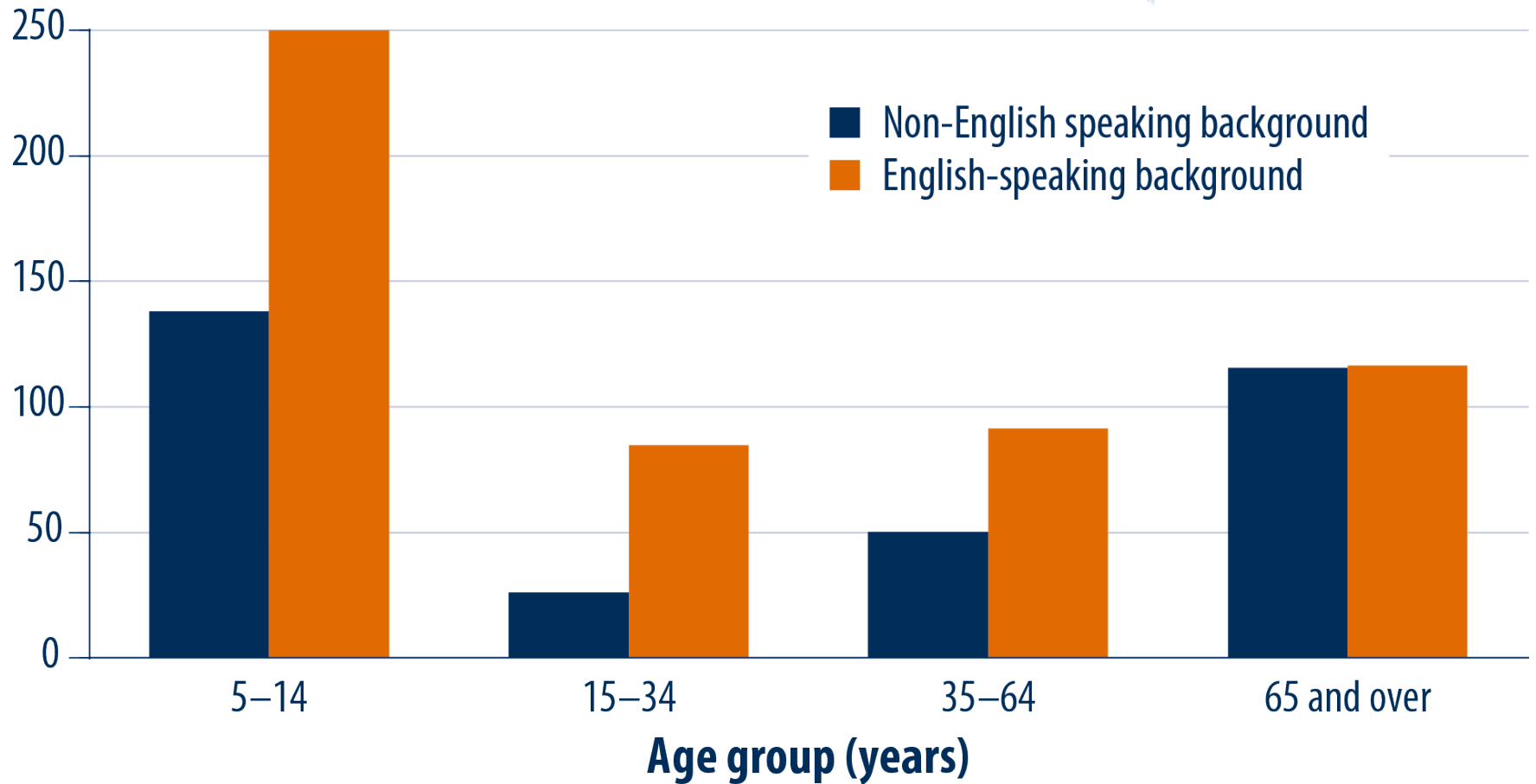


Source: AIHW National Hospital Morbidity Database 2008–2009

Hospital separations for asthma by age and country of birth



Hospital separations per 100,000 population

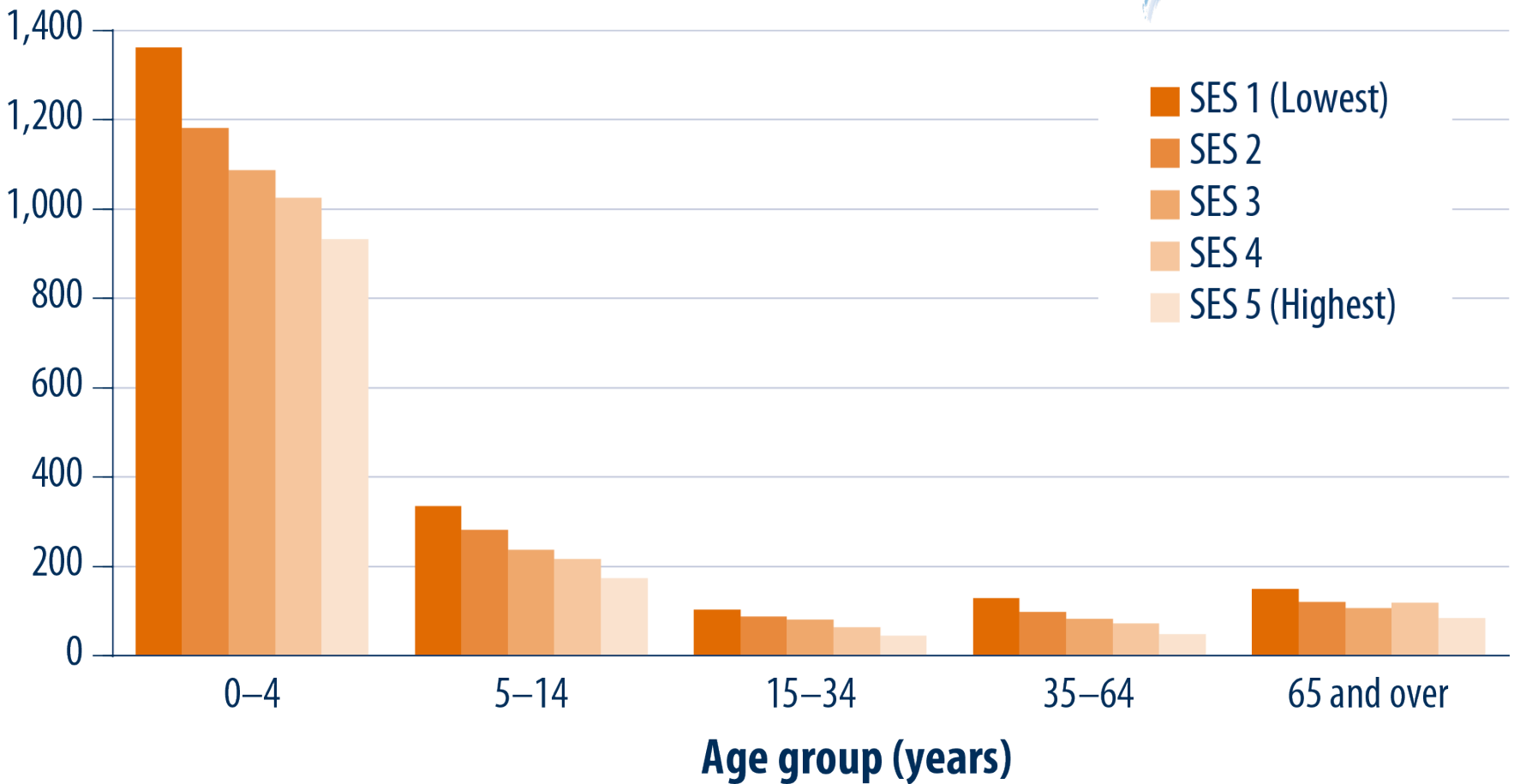


Source: AIHW National Hospital Morbidity Database 2008–2009

Hospital separations for asthma by age and socioeconomic status



Hospital separations per 100,000 population

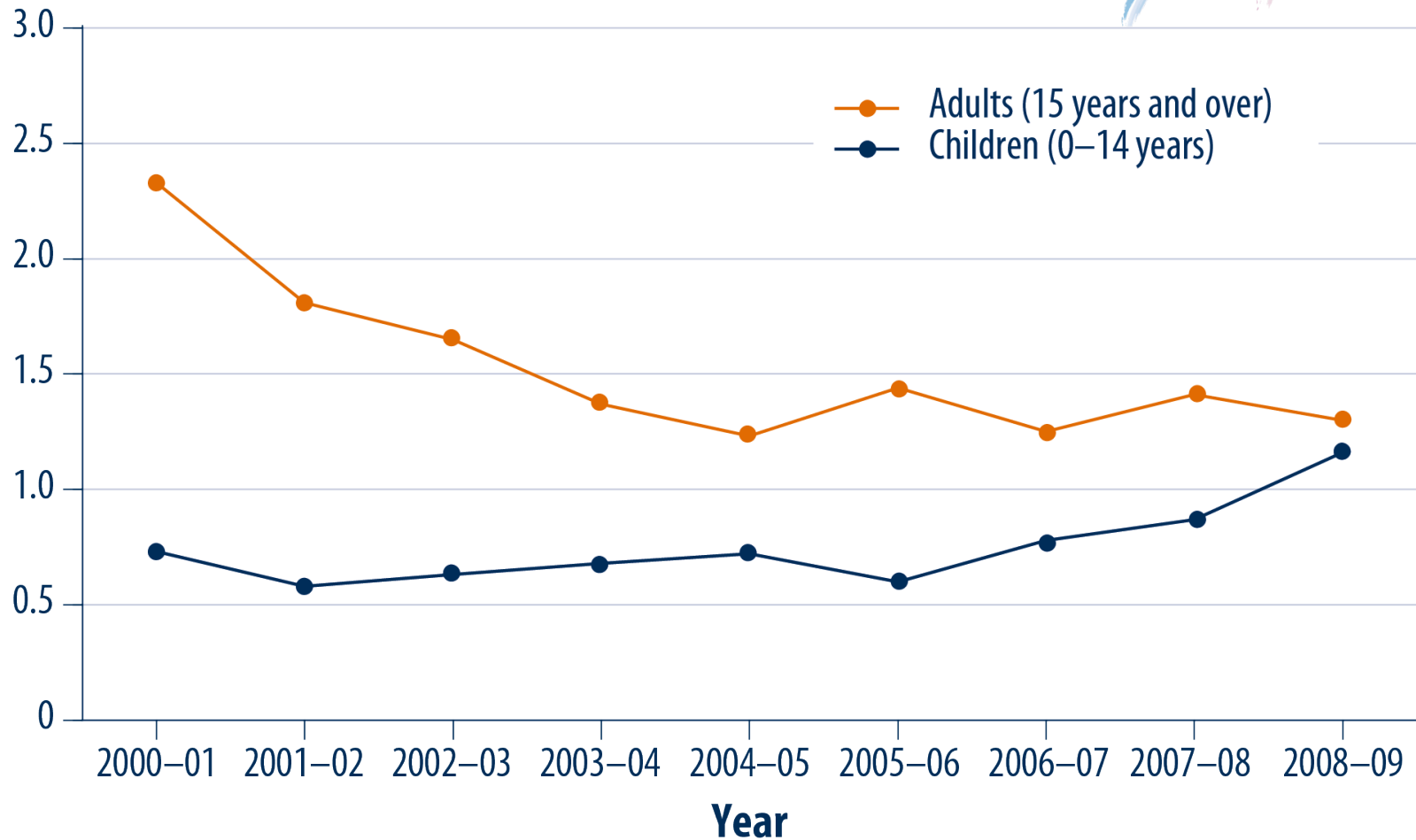


Source: AIHW National Hospital Morbidity Database 2008–2009

Time trends in invasive mechanical ventilation for asthma



Ventilations per 100,000 population



Source: AIHW National Hospital Morbidity Database



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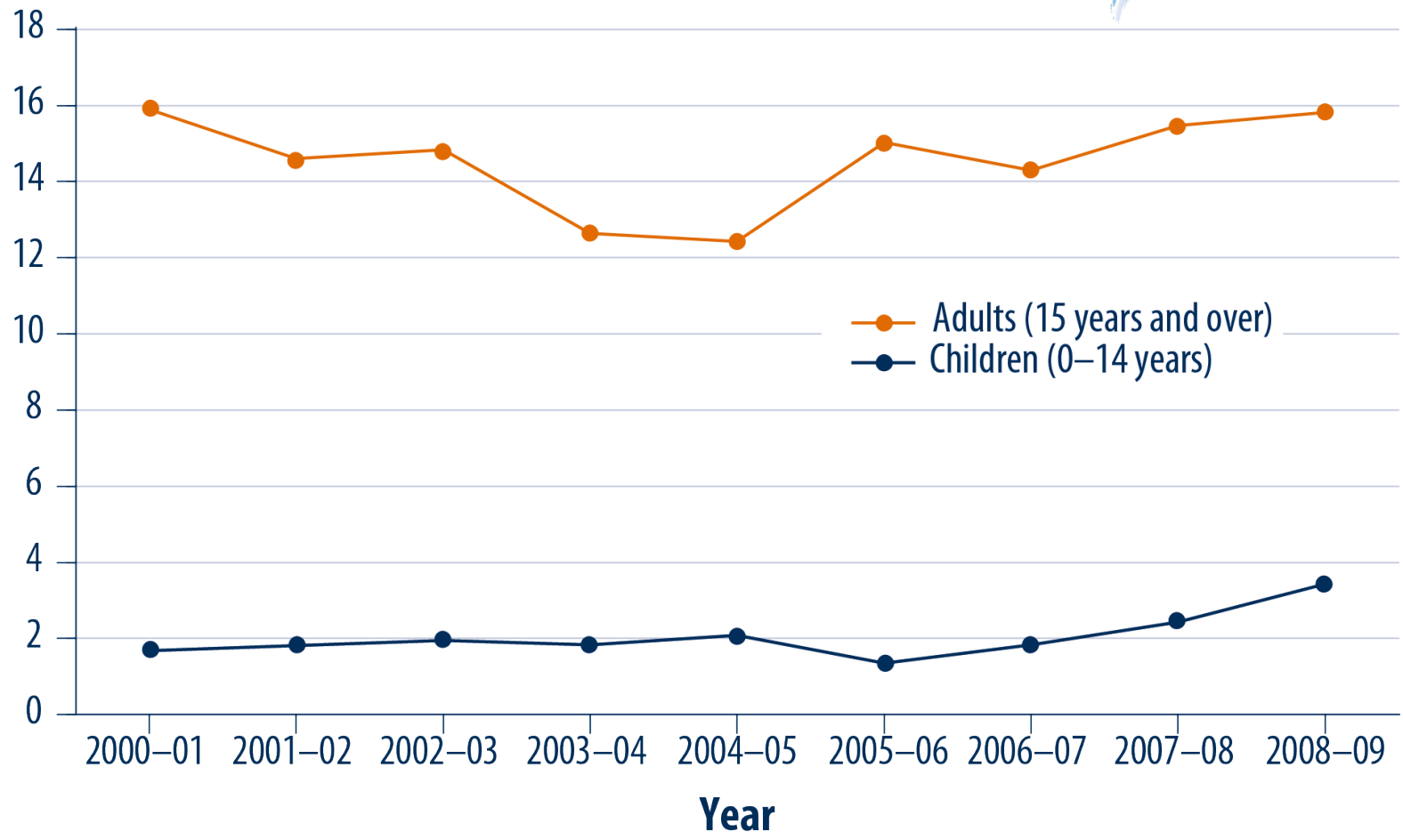
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Time trends in invasive mechanical ventilation for asthma case rate



Ventilations per 1,000 hospital separations for asthma

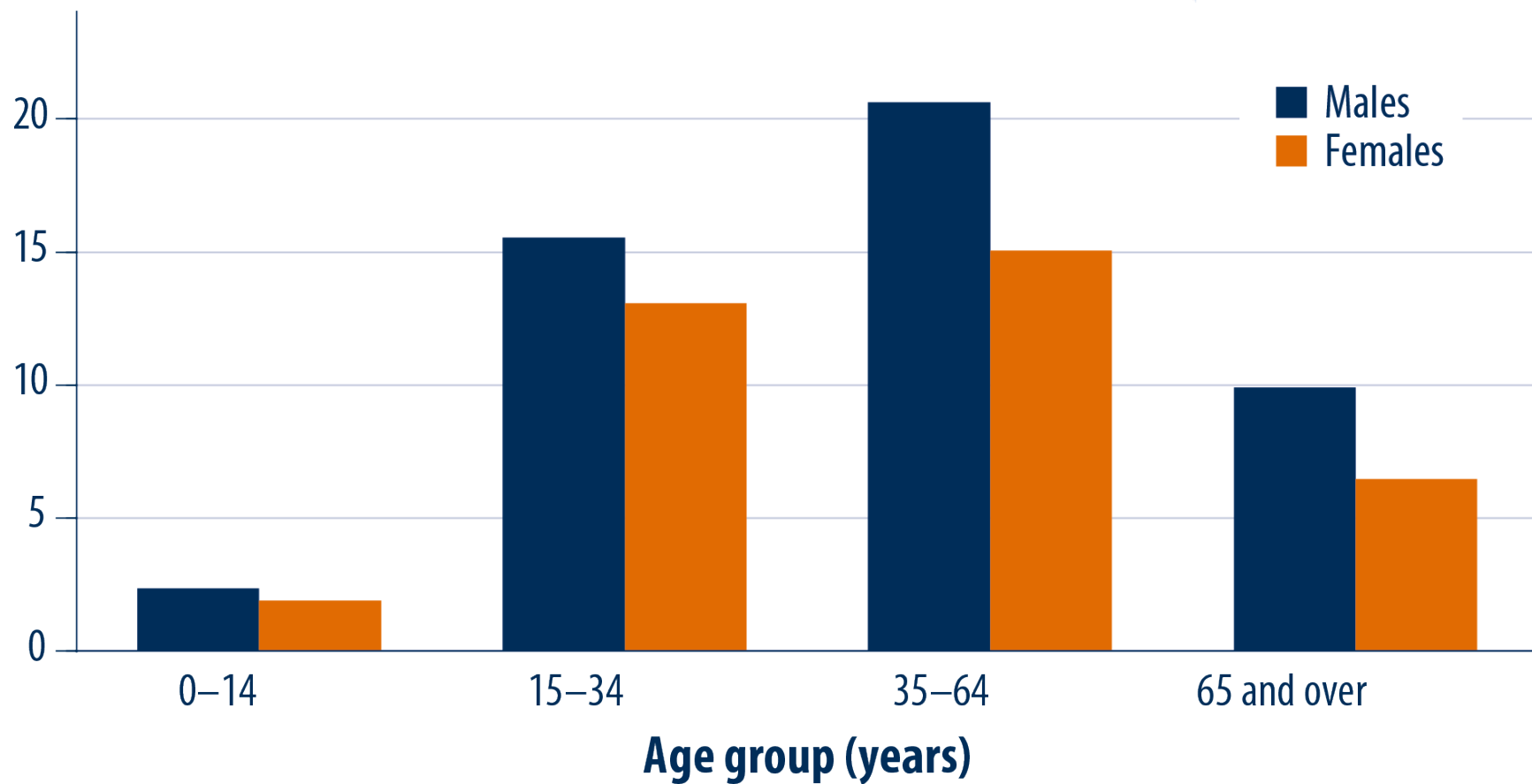


Source: AIHW National Hospital Morbidity Database

Invasive mechanical ventilation for asthma by age and sex



Ventilations per 1,000 hospital separations for asthma



Source: AIHW National Hospital Morbidity Database 2003-04 to 2008-09



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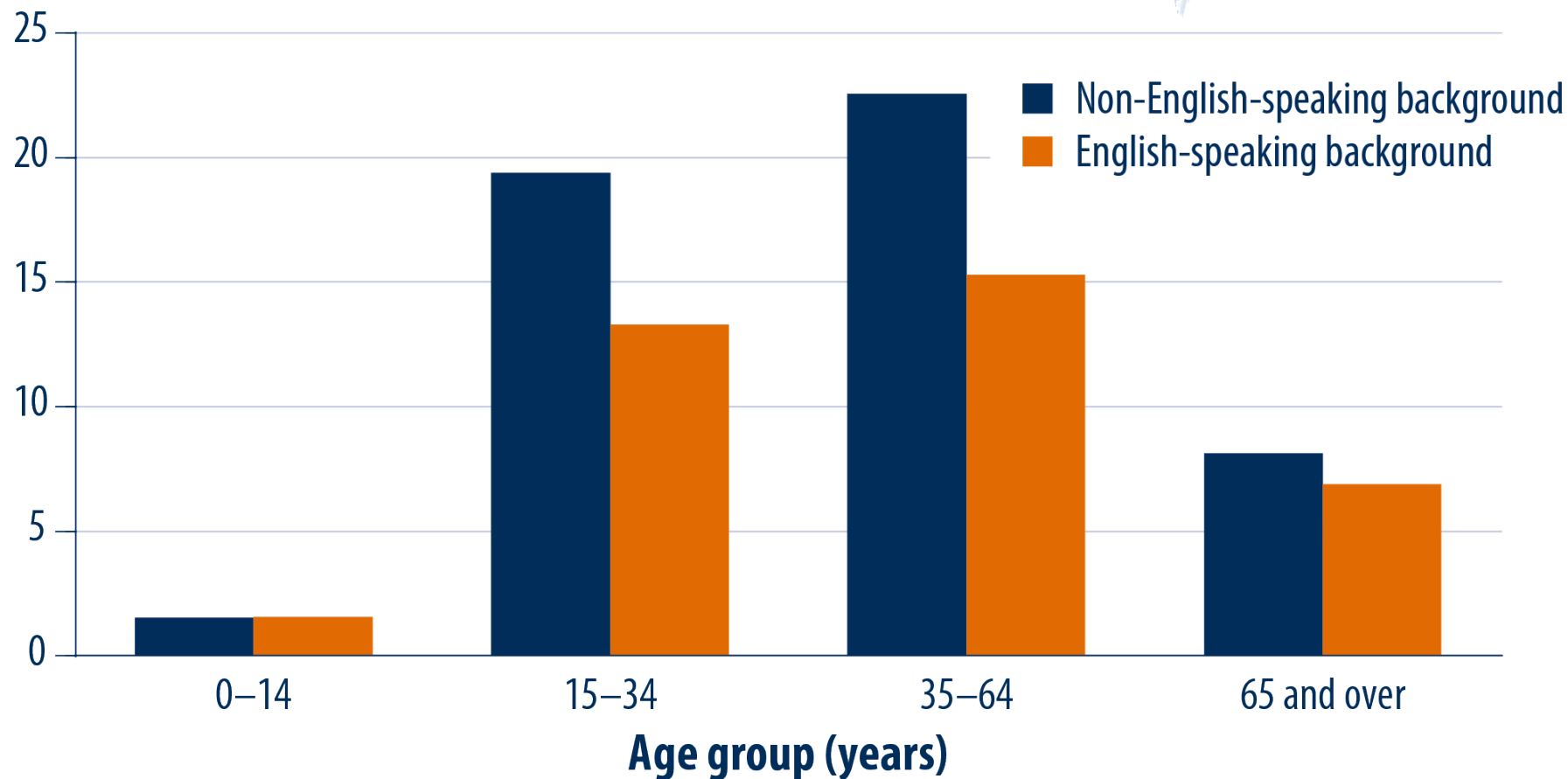
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Australian Centre for
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Invasive mechanical ventilation for asthma by age and country of birth



Ventilations per 1,000 hospital separations for asthma

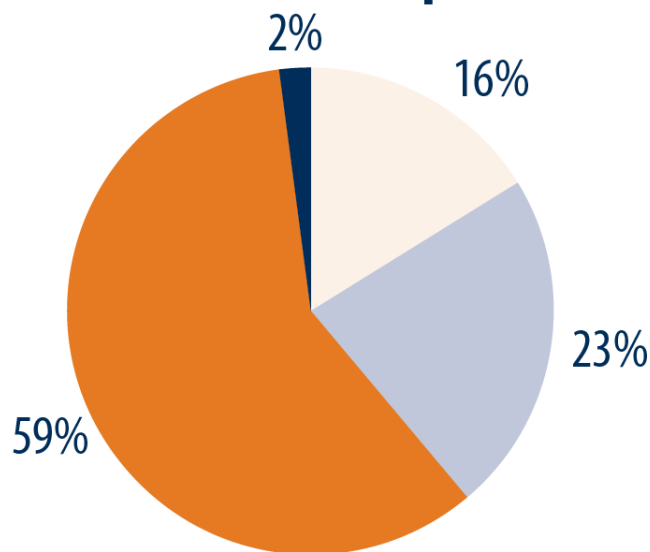


Source: AIHW National Hospital Morbidity Database 2003-04 to 2008-09

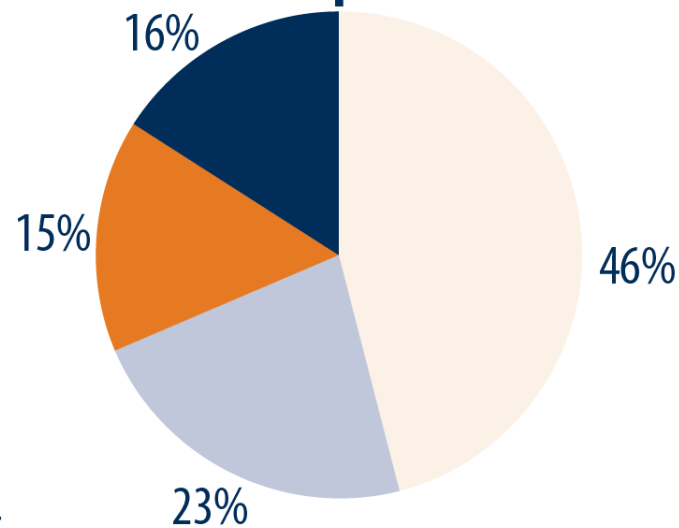
Allocated expenditure for asthma and total recurrent health expenditure, by sector



Allocated asthma expenditure



Total allocated recurrent health expenditure



- Admitted patient
- Out-of-hospital medical
- Prescription pharmaceuticals
- Other

Source: AIHW disease expenditure database 2004–05



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Chapter 6 Management



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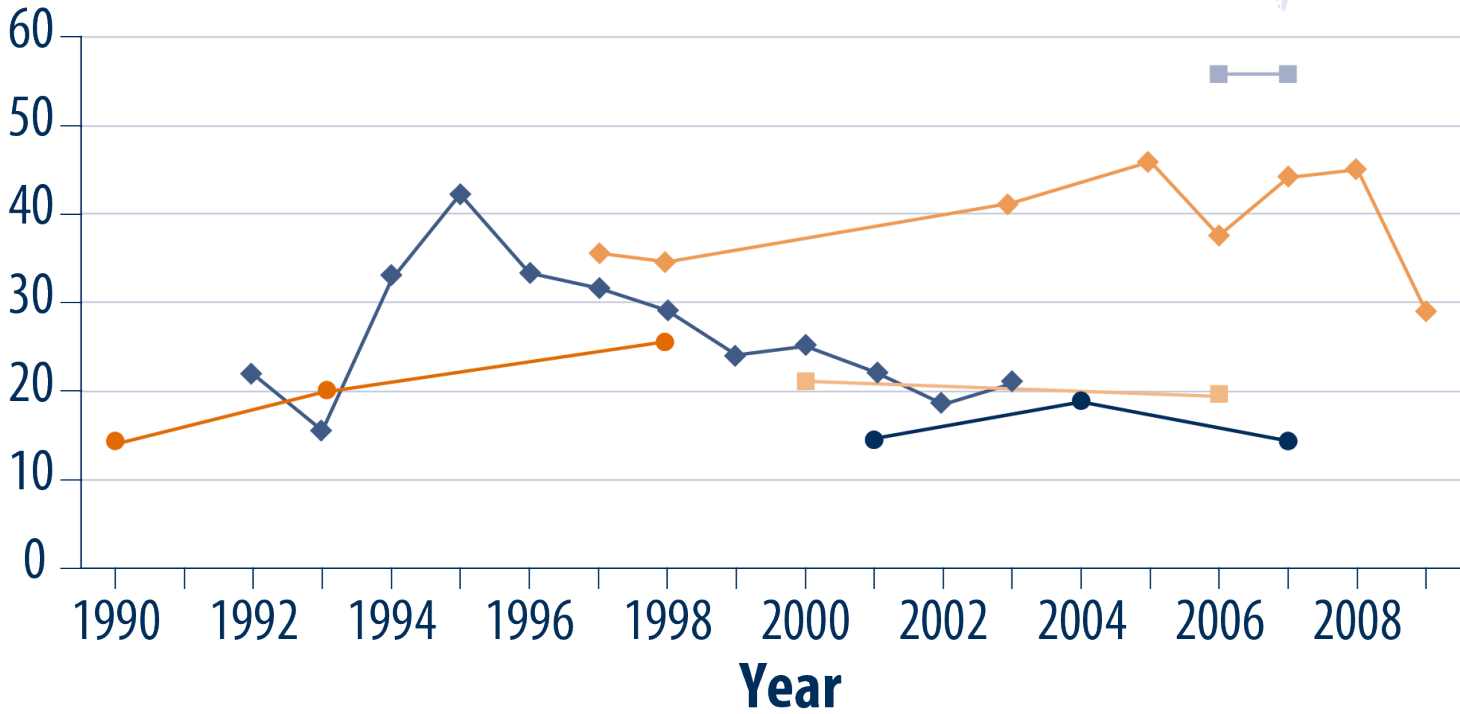
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Possession of asthma action plans among adults with current asthma

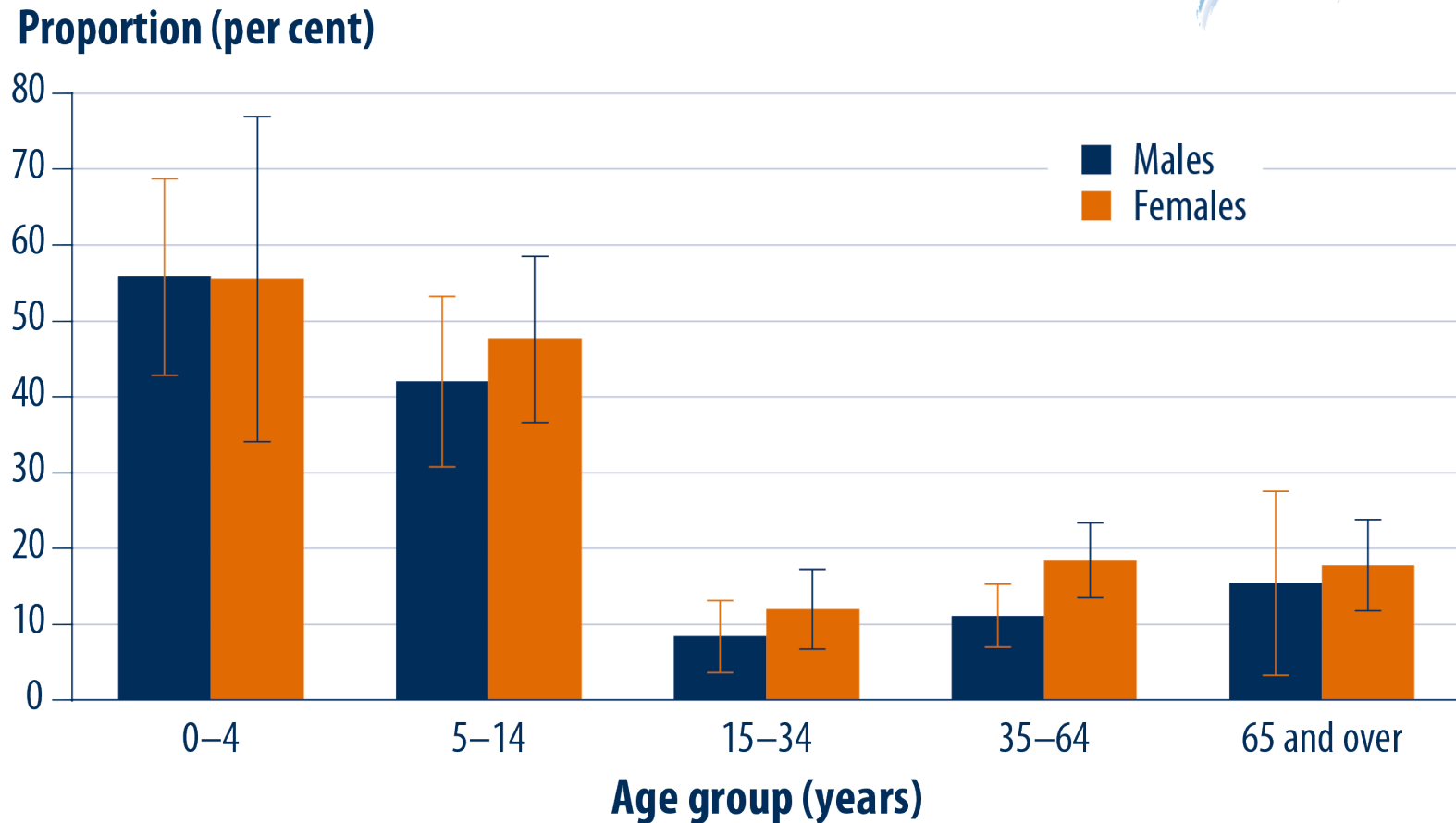


Proportion (per cent)



- (1) Australia, 15 years+
- ◆ (2) South Australia, 15 years+
- (3) Queensland, 18 years+
- ◆ (4) New South Wales, 16 years+
- (5) Eastern Australia, <50 years
- (6) Victoria, 18 years+

Possession of asthma action plans among people with current asthma by age and sex

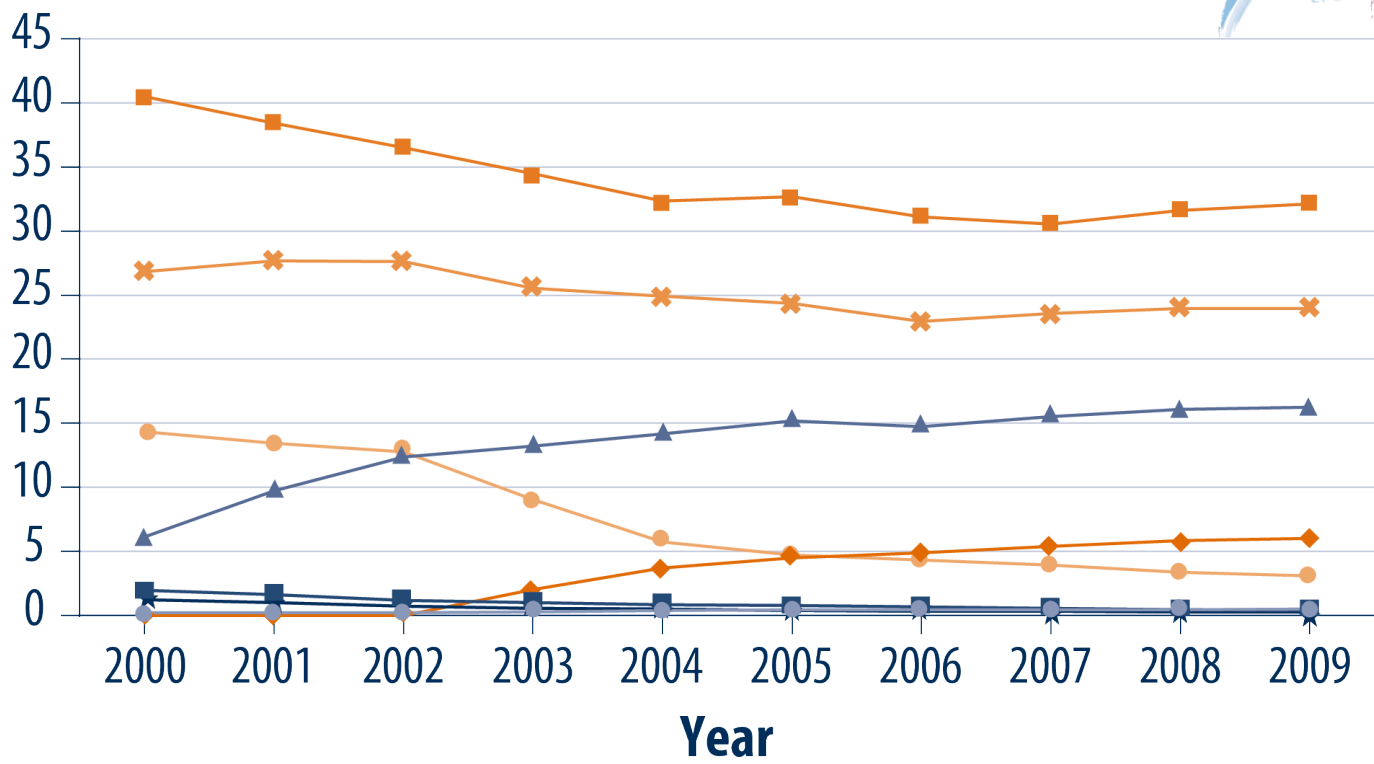


Source: National Health Survey 2007-08

Respiratory medications supplied by wholesalers and manufacturers, by defined daily dose



DDD per 1,000 persons per day



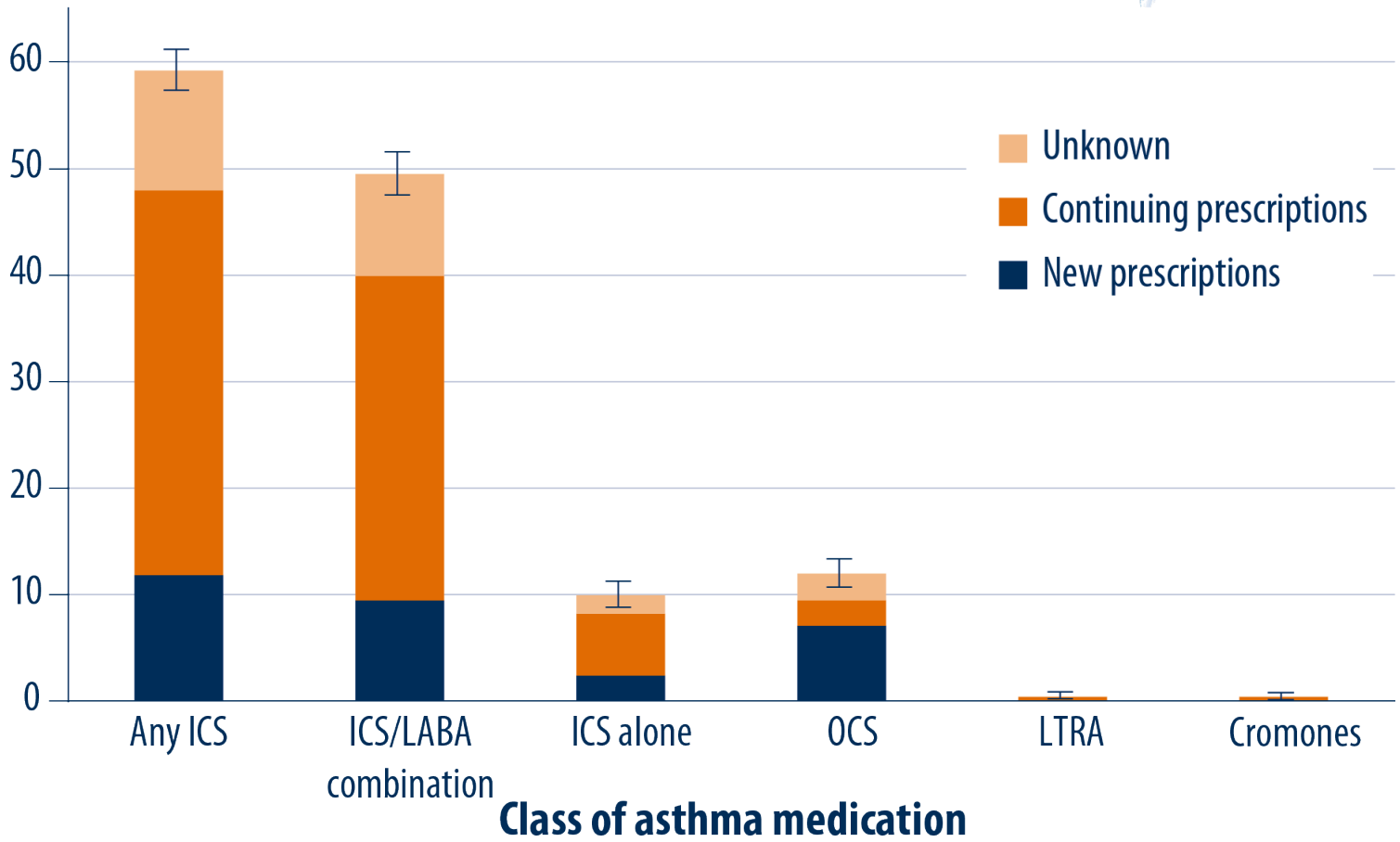
- short-acting beta agonists
- short-acting anticholinergic
- ▲ long-acting beta agonists
- ◆ long-acting anticholinergic
- ★ cromones
- ✕ inhaled corticosteroids
- theophylline
- leukotriene receptor antagonists

Source: IMS Health

Medications prescribed at GP visits for asthma by prescription status, adults aged 15 years+



Proportion of general practice encounters for asthma (per cent)

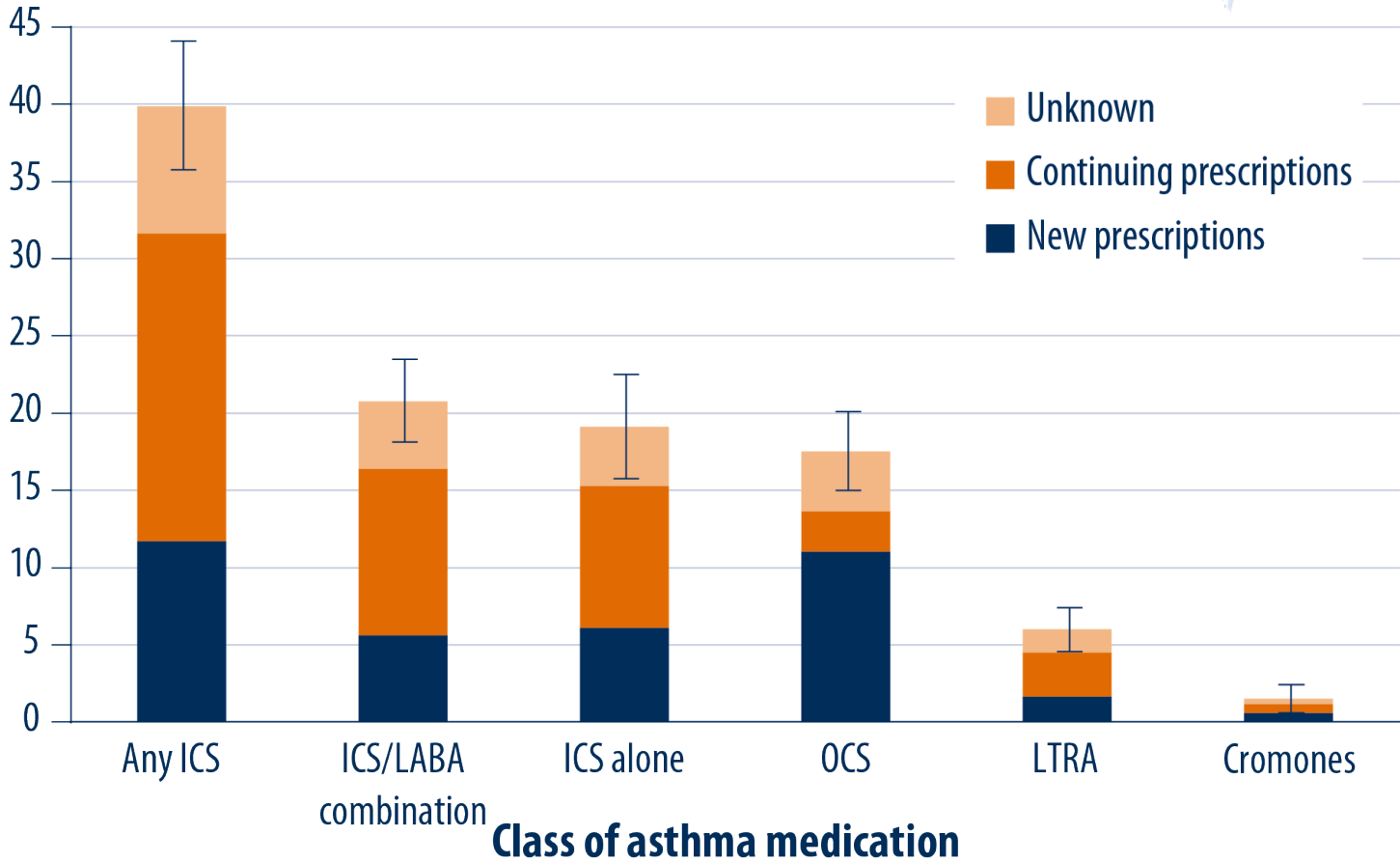


Source: BEACH Survey April 2007–March 2010

Medications prescribed at GP visits for asthma by prescription status, children aged 0–14 years



Proportion of general practice encounters for asthma (per cent)

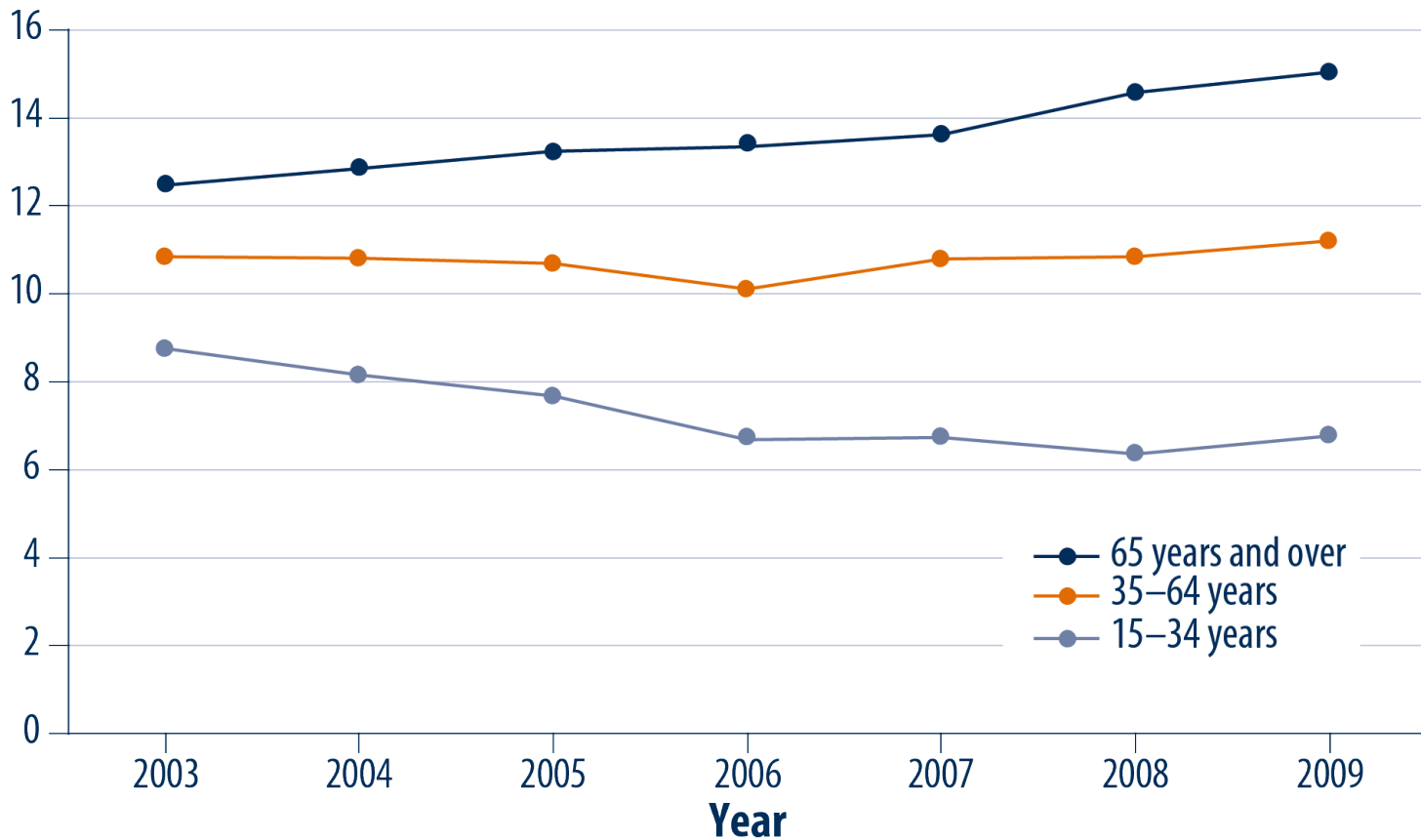


Source: BEACH Survey April 2007–March 2010

Concession card holders dispensed inhaled corticosteroids by year of supply and age



Proportion of concession card holders dispensed inhaled corticosteroids (per cent)

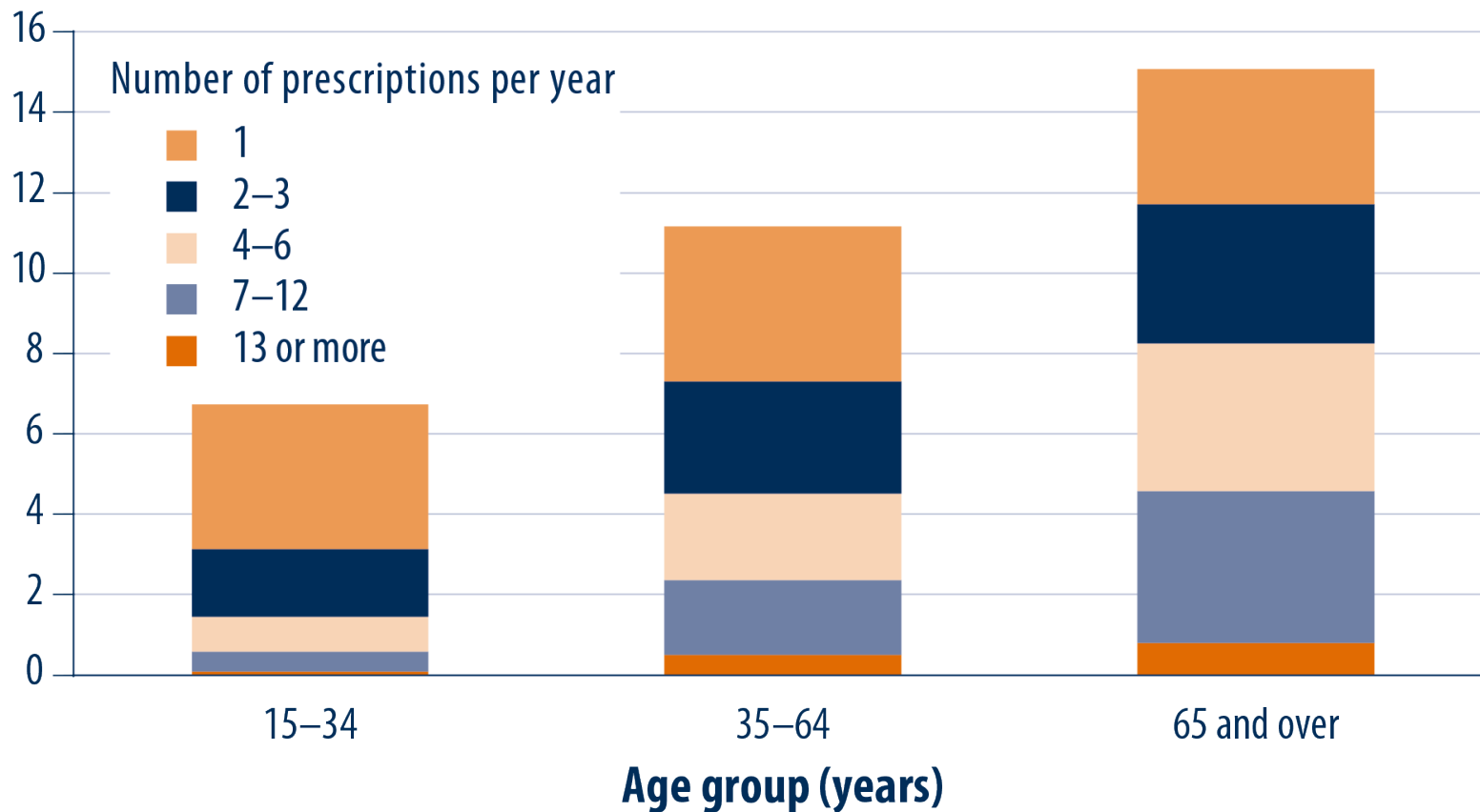


Source: Pharmaceutical Benefits Scheme

Dispensing of inhaled corticosteroids to adult concession cardholders, by age and number of prescriptions



Proportion of adult concession card holders (per cent)

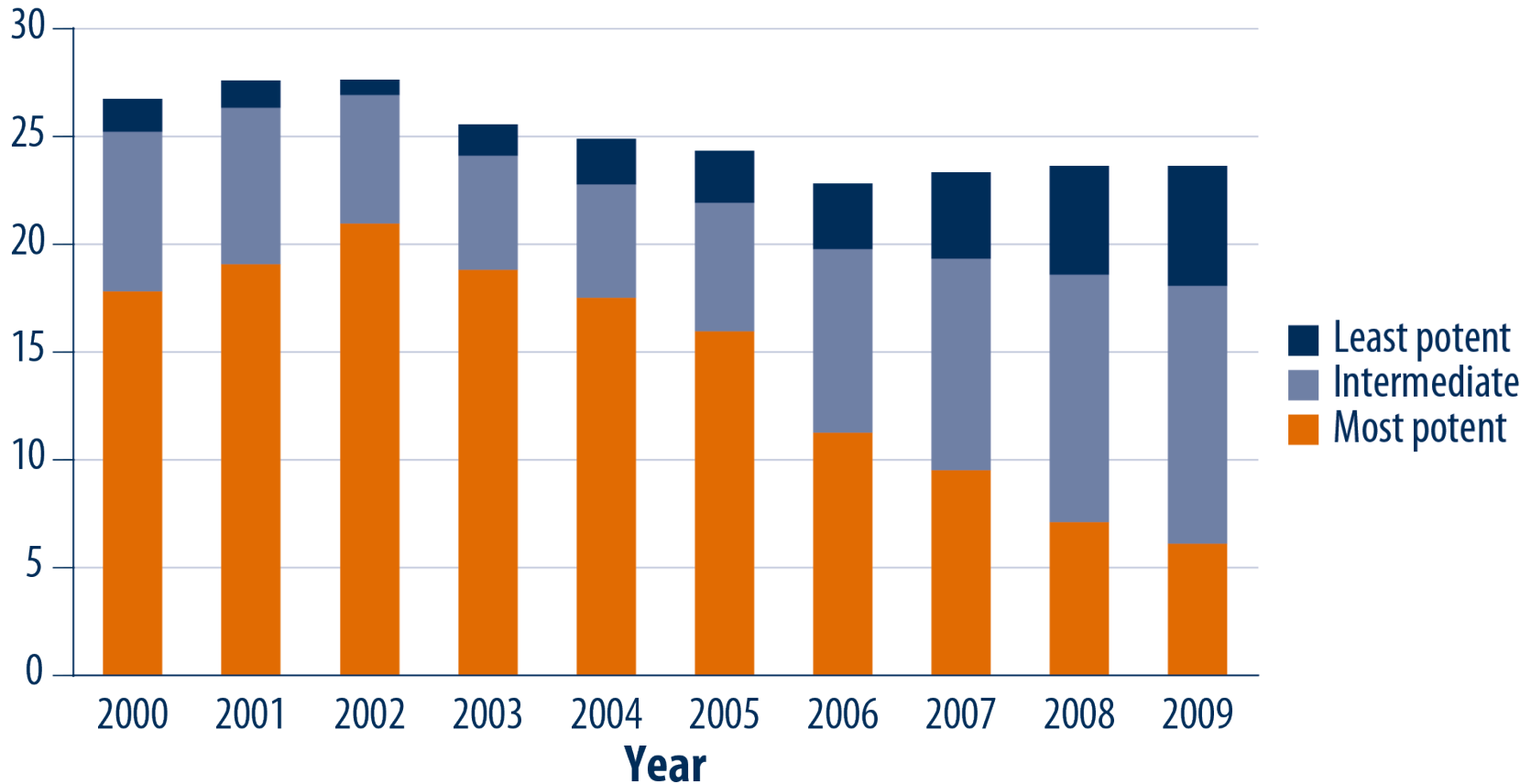


Source: Pharmaceutical Benefits Scheme 2009

Relative potency of inhaled corticosteroids supplied by wholesalers separately or as part of combined therapy



DDD per 1,000 persons per day



Source: IMS Health



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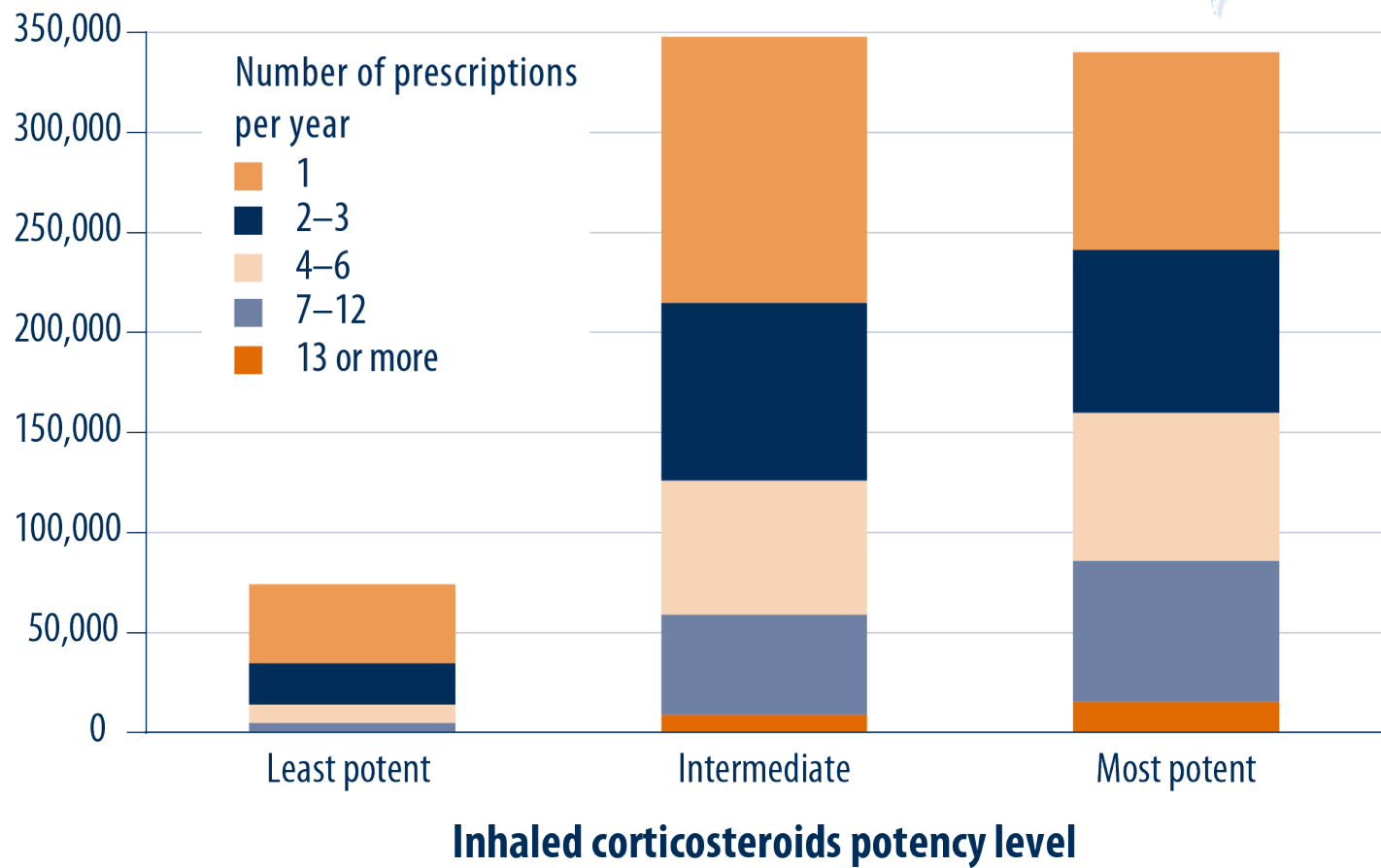
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Concession cardholders dispensed inhaled corticosteroids, by potency class and number of prescriptions



Number of concession card holders

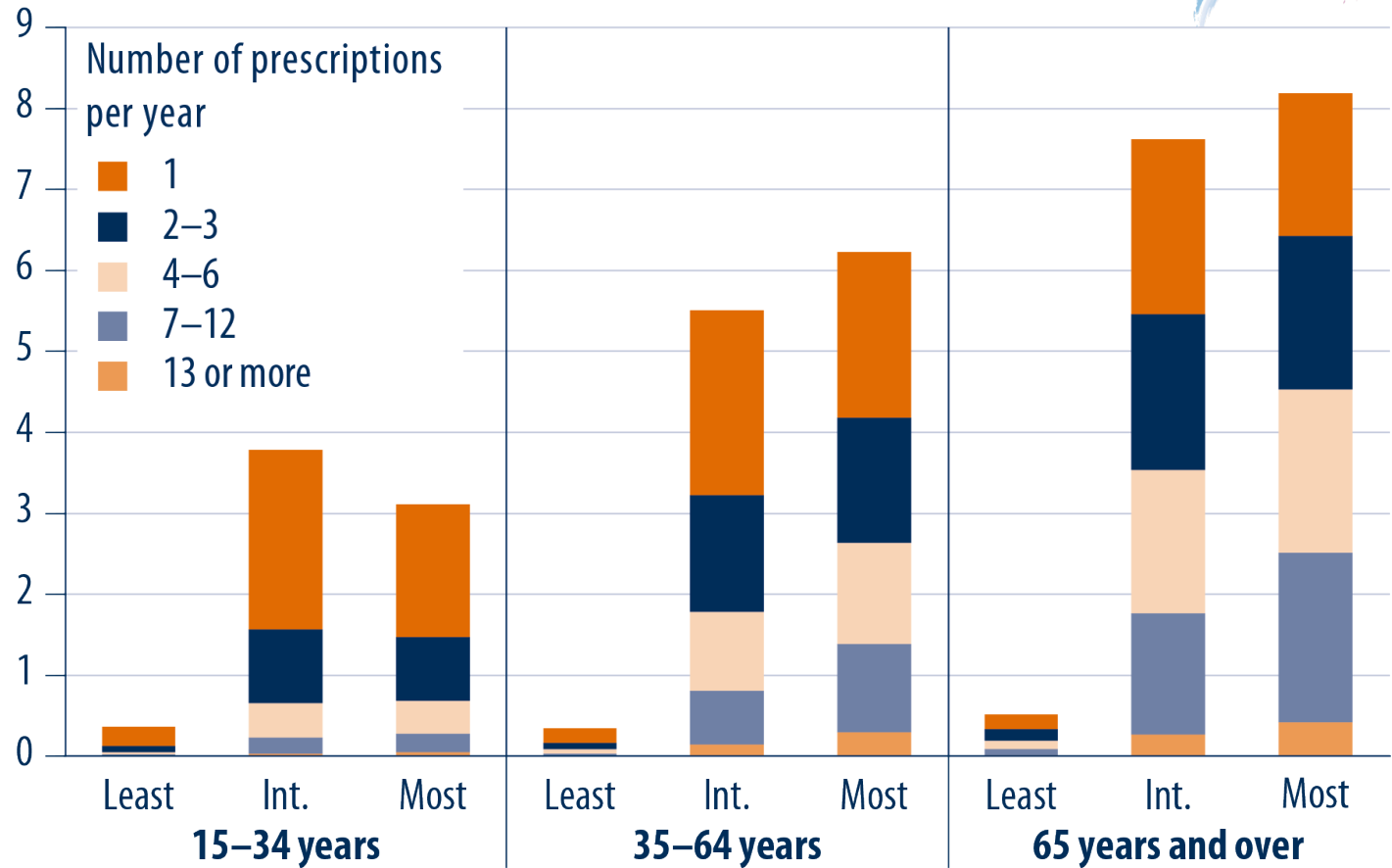


Source: Pharmaceutical Benefits Scheme 2009

Dispensing of inhaled corticosteroids to adult concession card holders, by potency class, age and number of prescriptions



Proportion of adult concession card holders (per cent)



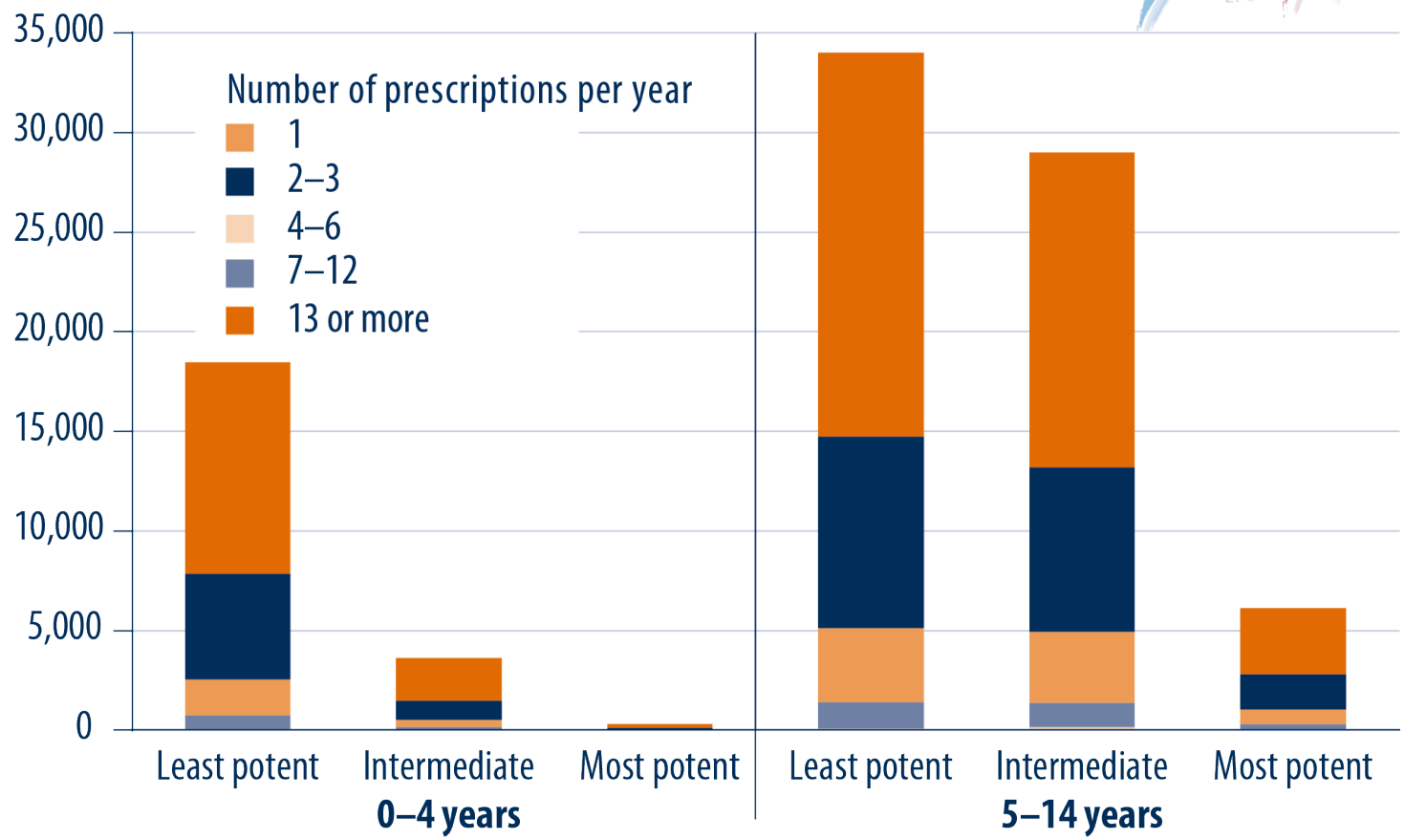
Inhaled corticosteroids potency level/Age group

Source: Pharmaceutical Benefits Scheme 2009

Dispensing of inhaled corticosteroids to child concession card holders, by potency class, age and number of prescriptions



Number of children concession card holders



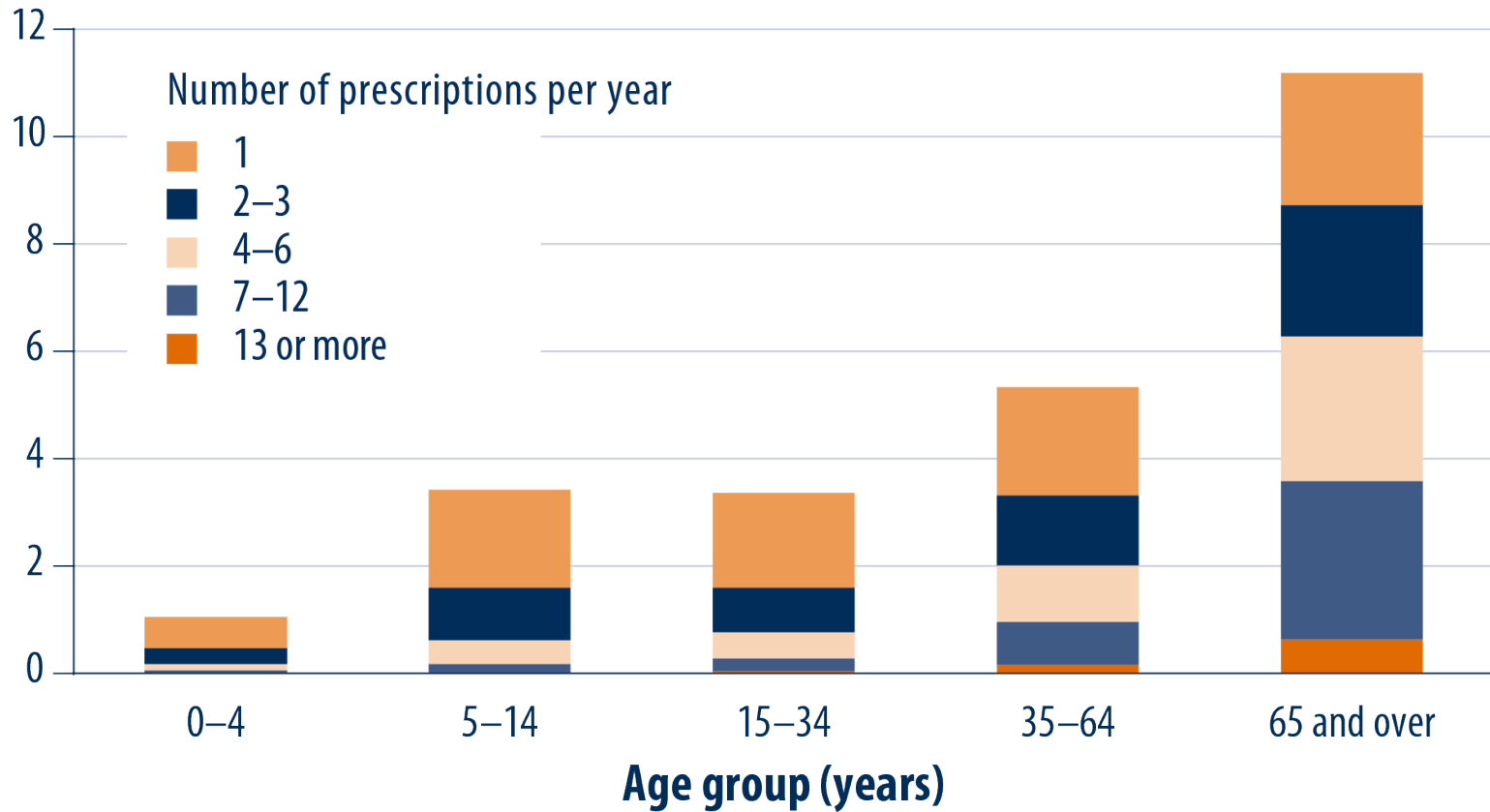
Inhaled corticosteroids potency level/Age group

Source: Pharmaceutical Benefits Scheme 2009

Dispensing of long-acting beta-agonists, by age and number of prescriptions



Proportion of population (per cent)

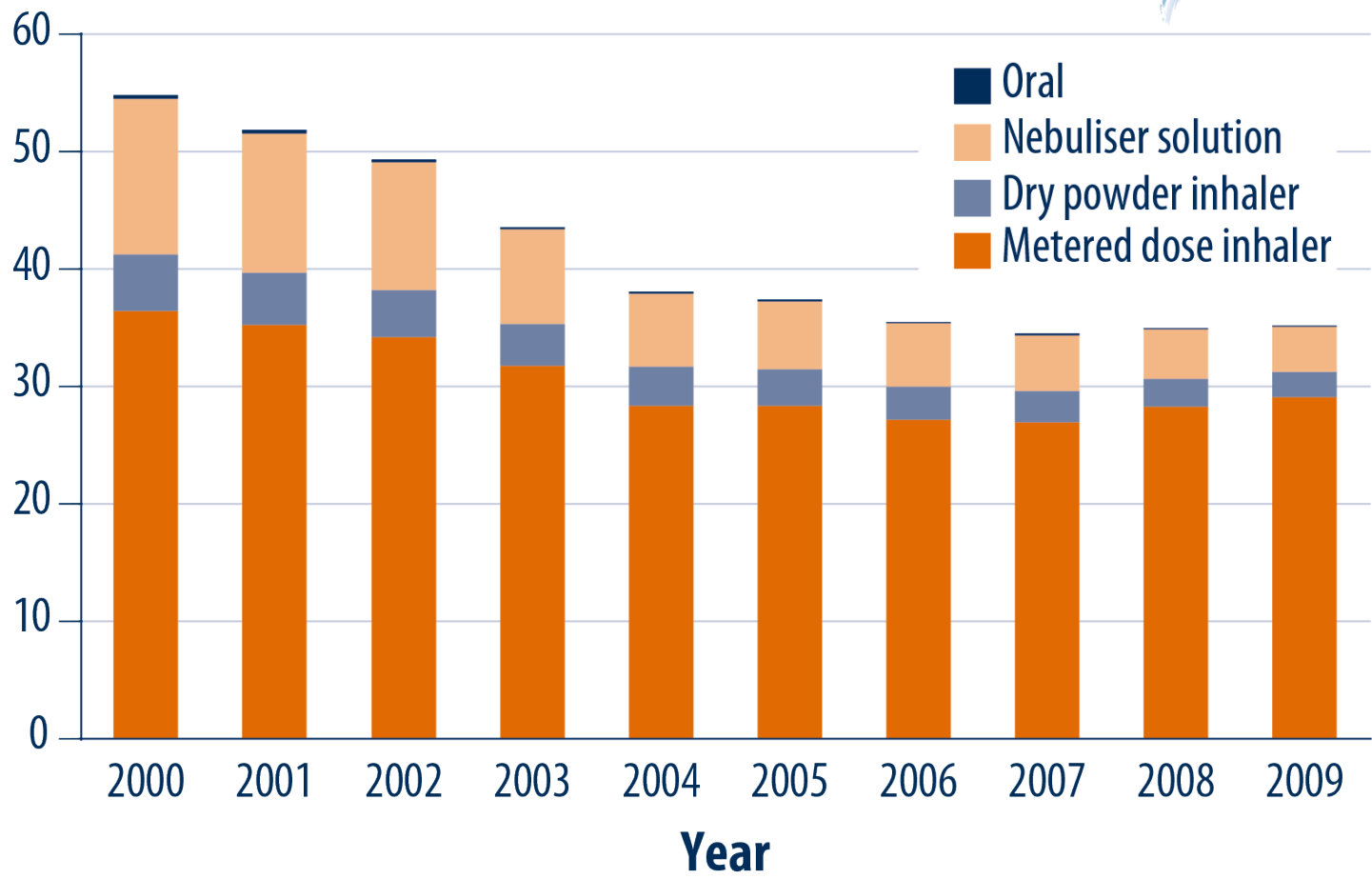


Source: Pharmaceutical Benefits Scheme 2009

Delivery devices supplied by wholesalers for administration of short-acting beta-agonist and anticholinergic medication



DDD per 1,000 persons per day

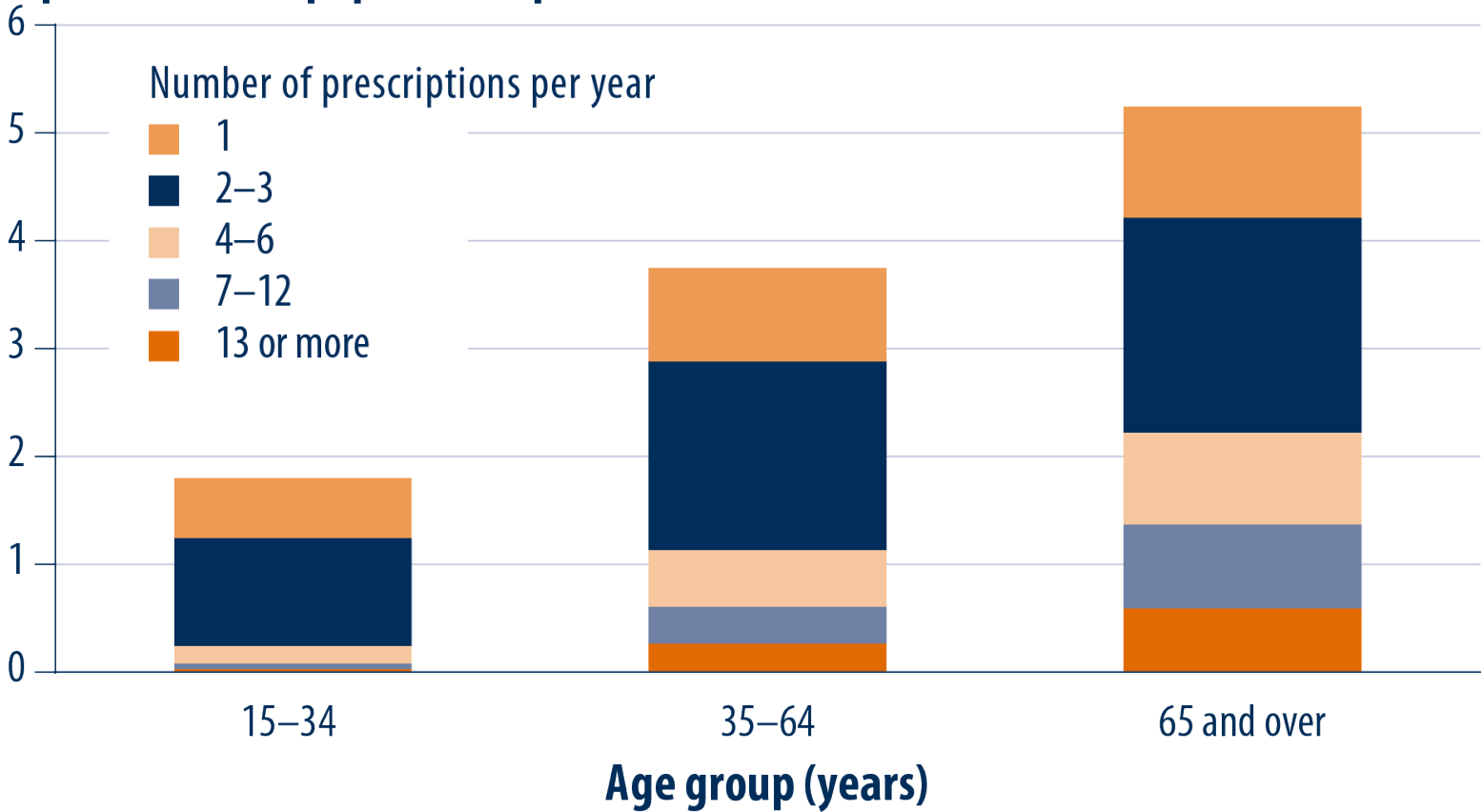


Source: IMS Health

Dispensing of oral corticosteroids to adult concession cardholders, by age and number of scripts



Proportion of the population (per cent)



Source: Pharmaceutical Benefits Scheme 2009



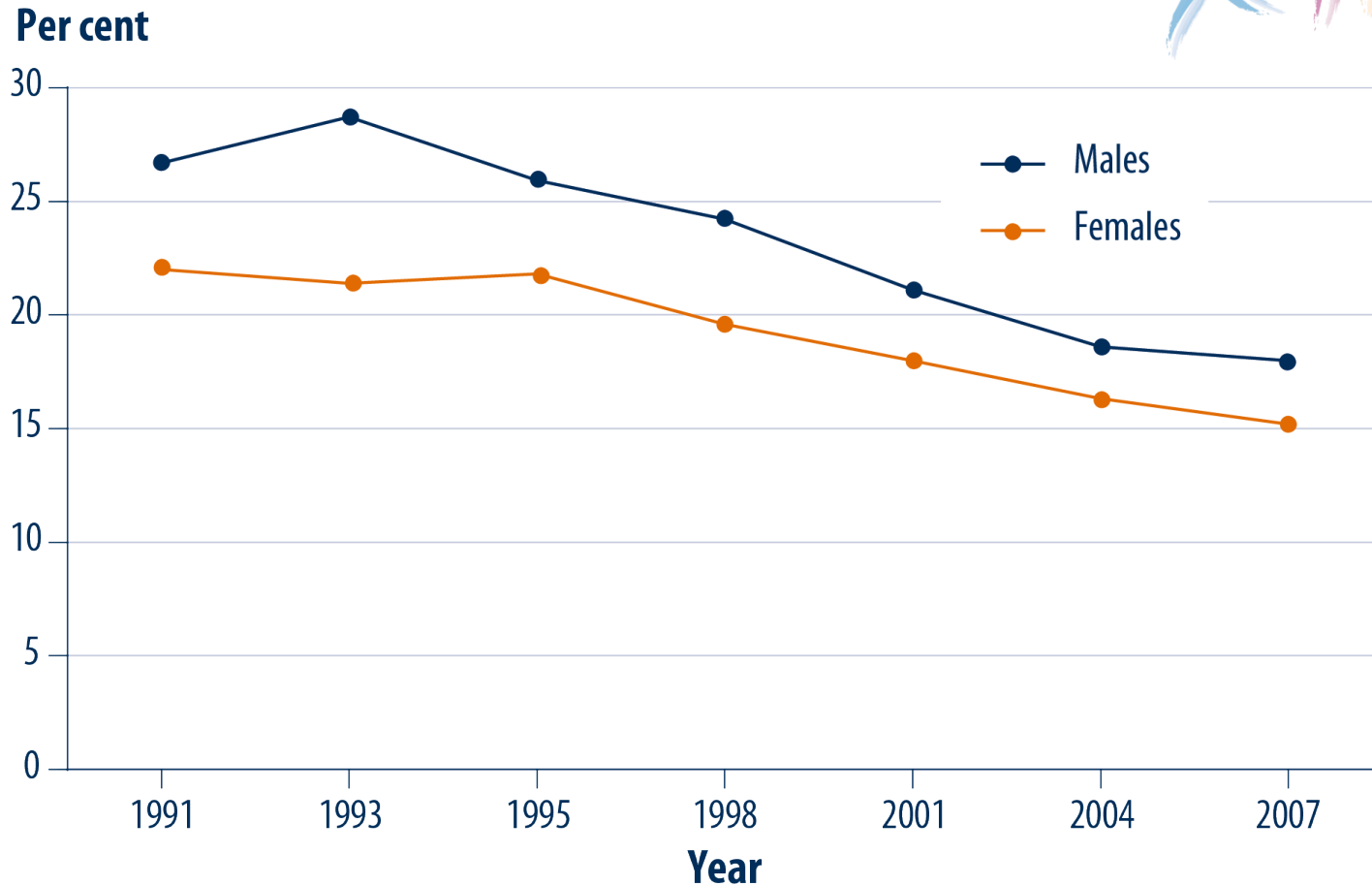
Asthma in Australia
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Chapter 7

Smoking and occupational exposures as risk factors for asthma

Prevalence of daily smoking, 14 years+



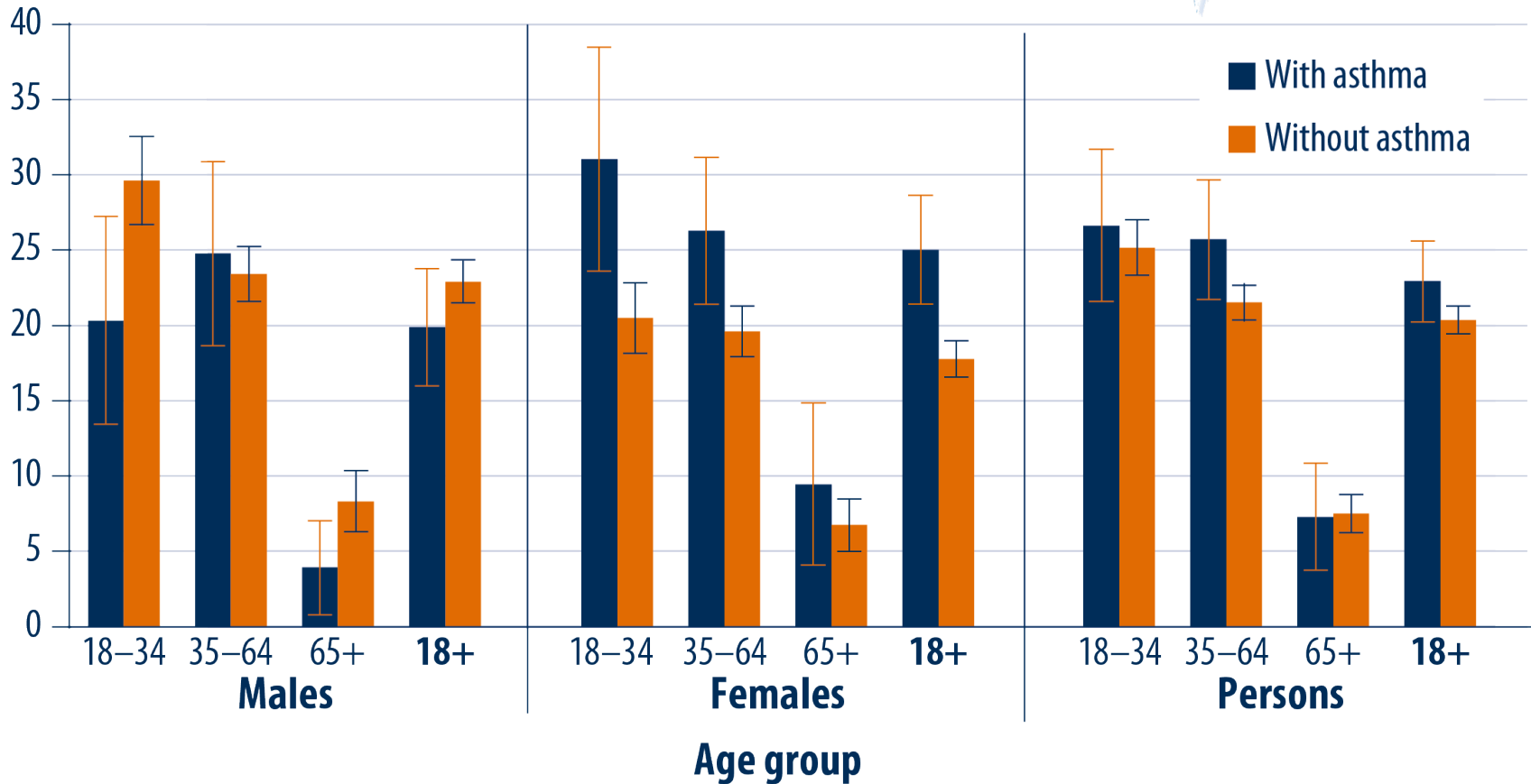
Source: National Campaign Against Drug Abuse Household Survey 1991, 1993; National Drug Strategy Household Survey 1995, 1998, 2001, 2004; AIHW



Prevalence of current smoking by asthma status, by age and sex, 18 years+



Proportion (per cent)

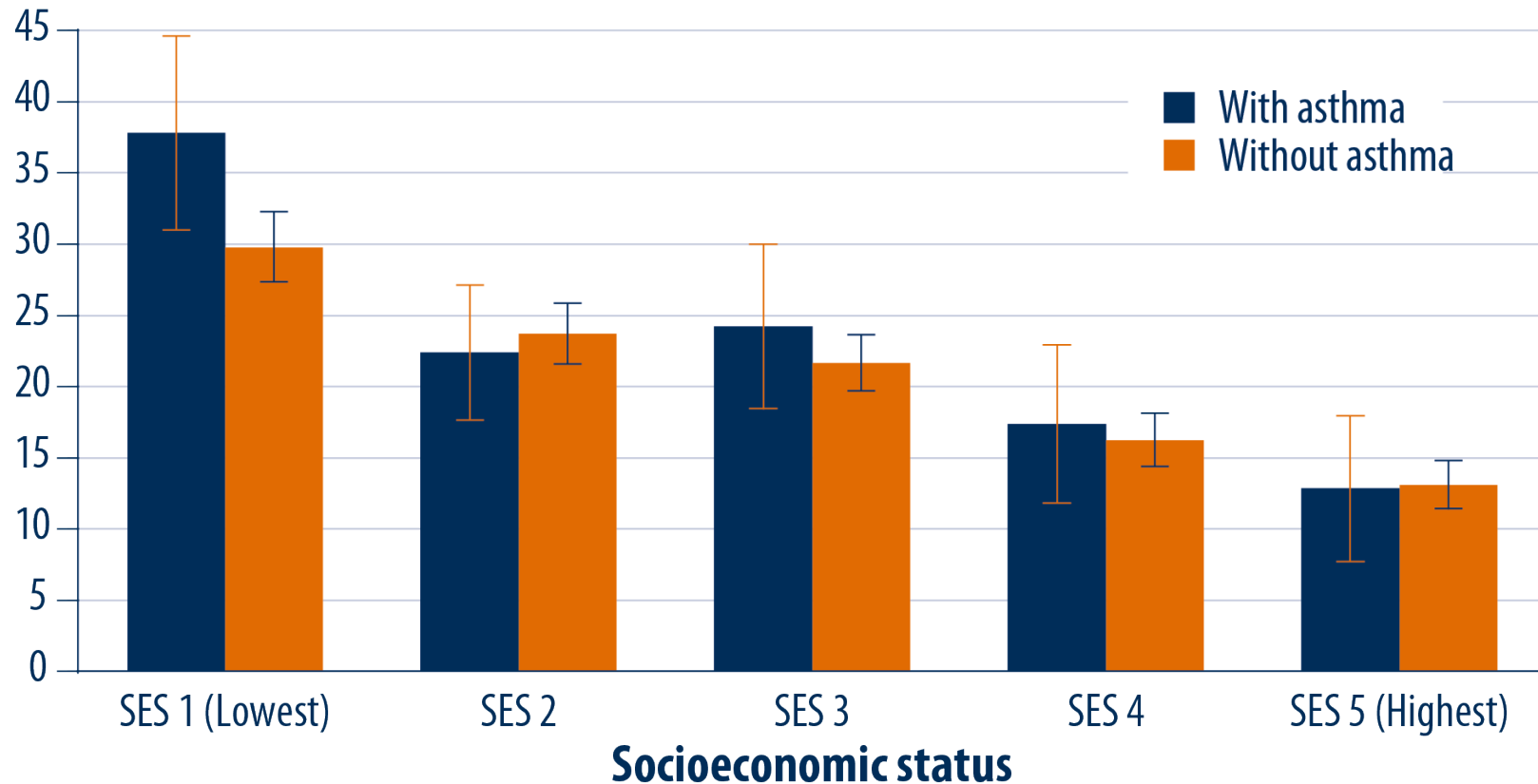


Source: National Health Survey 2007-08

Prevalence of current smoking by asthma status and socioeconomic status, 18 years+



Proportion (per cent)

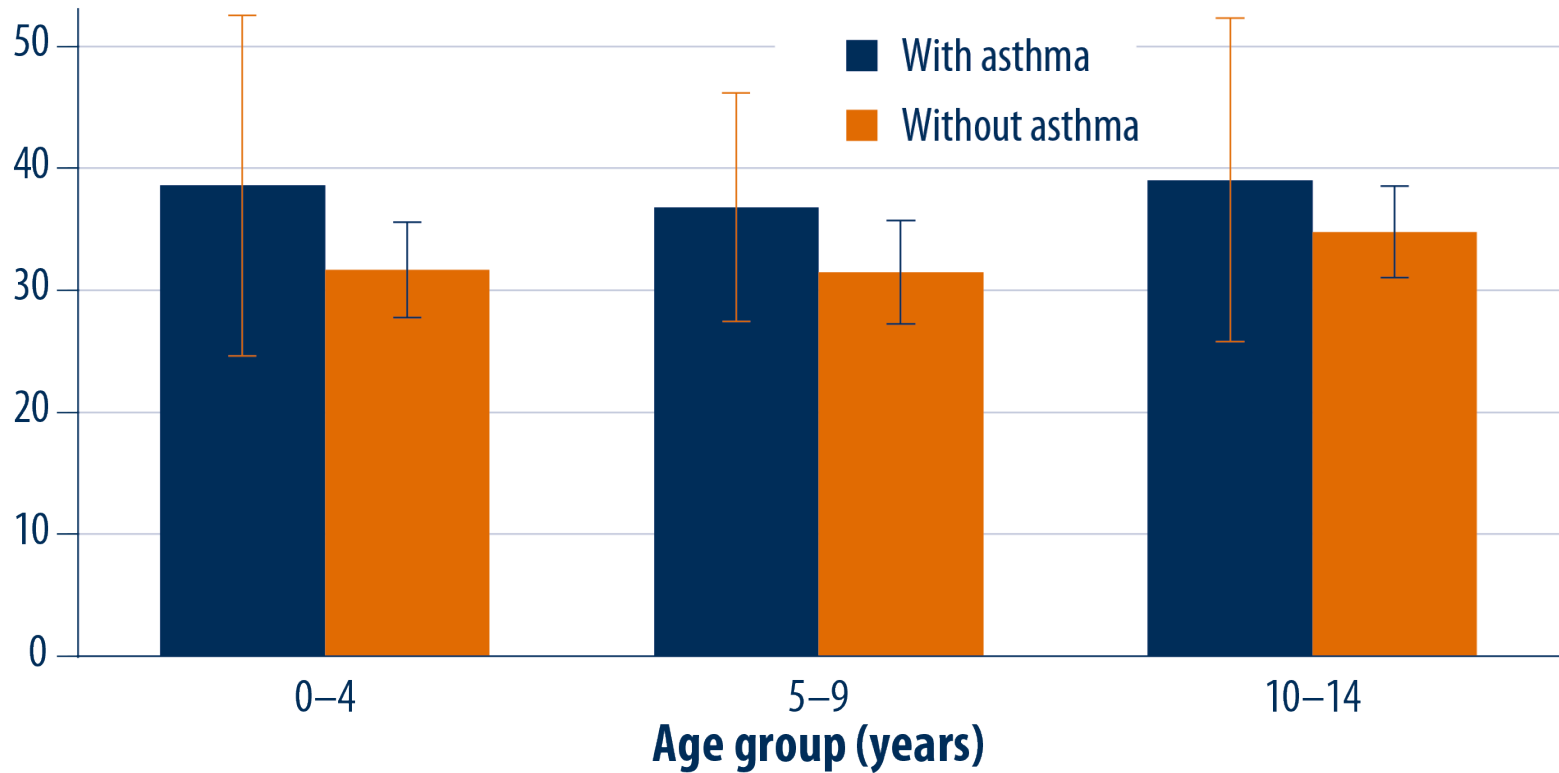


Source: National Health Survey 2007–08

Children residing with 1+ daily smokers, by age and current asthma status



Proportion (per cent)

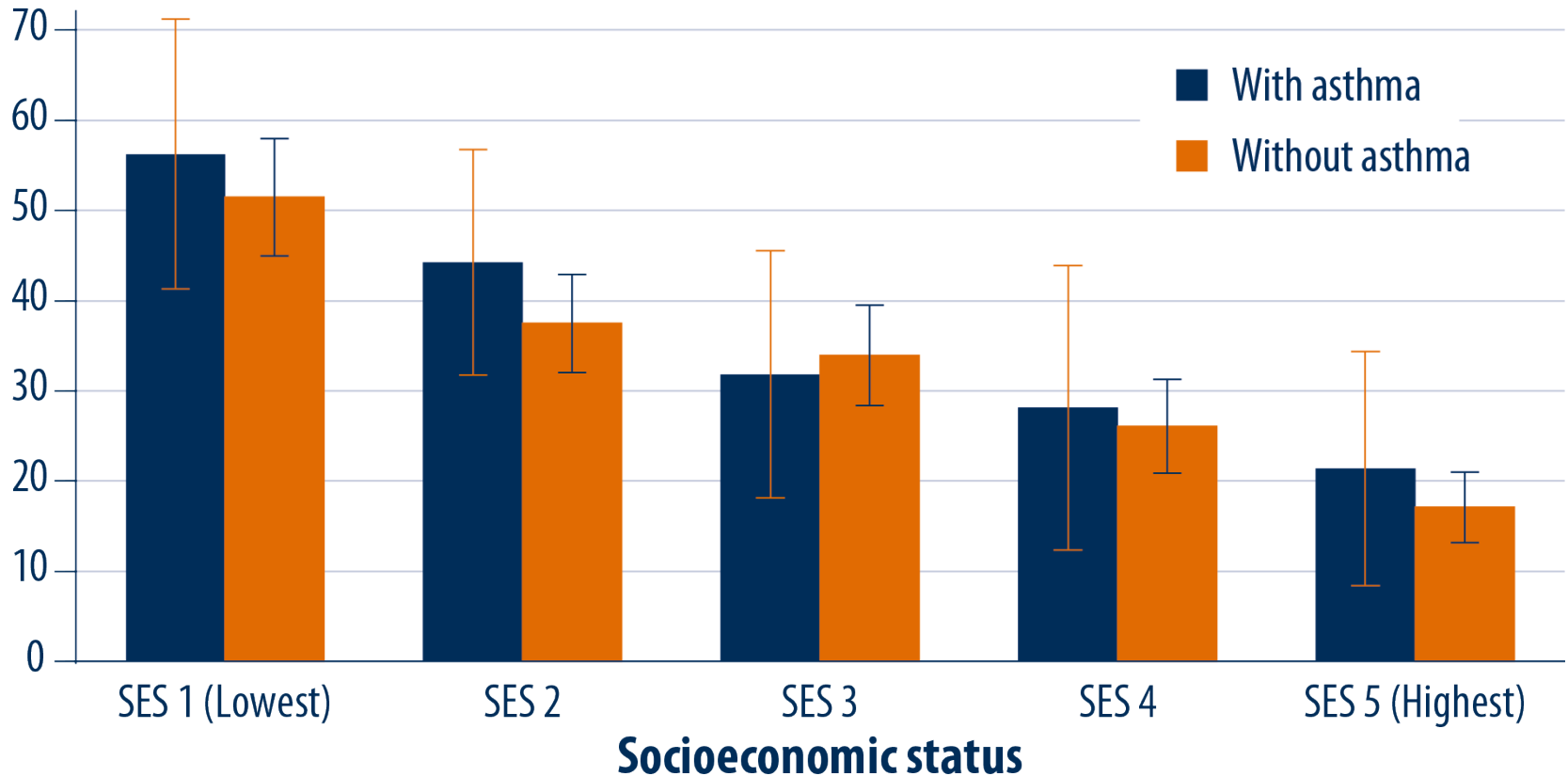


Source: National Health Survey 2007-08

Children residing with 1+ daily smokers, by socioeconomic and current asthma status



Proportion (per cent)



Source: National Health Survey 2007–08



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Chapter 8 - Focus Chapter: Chronic obstructive pulmonary disease among people aged 55 years and over



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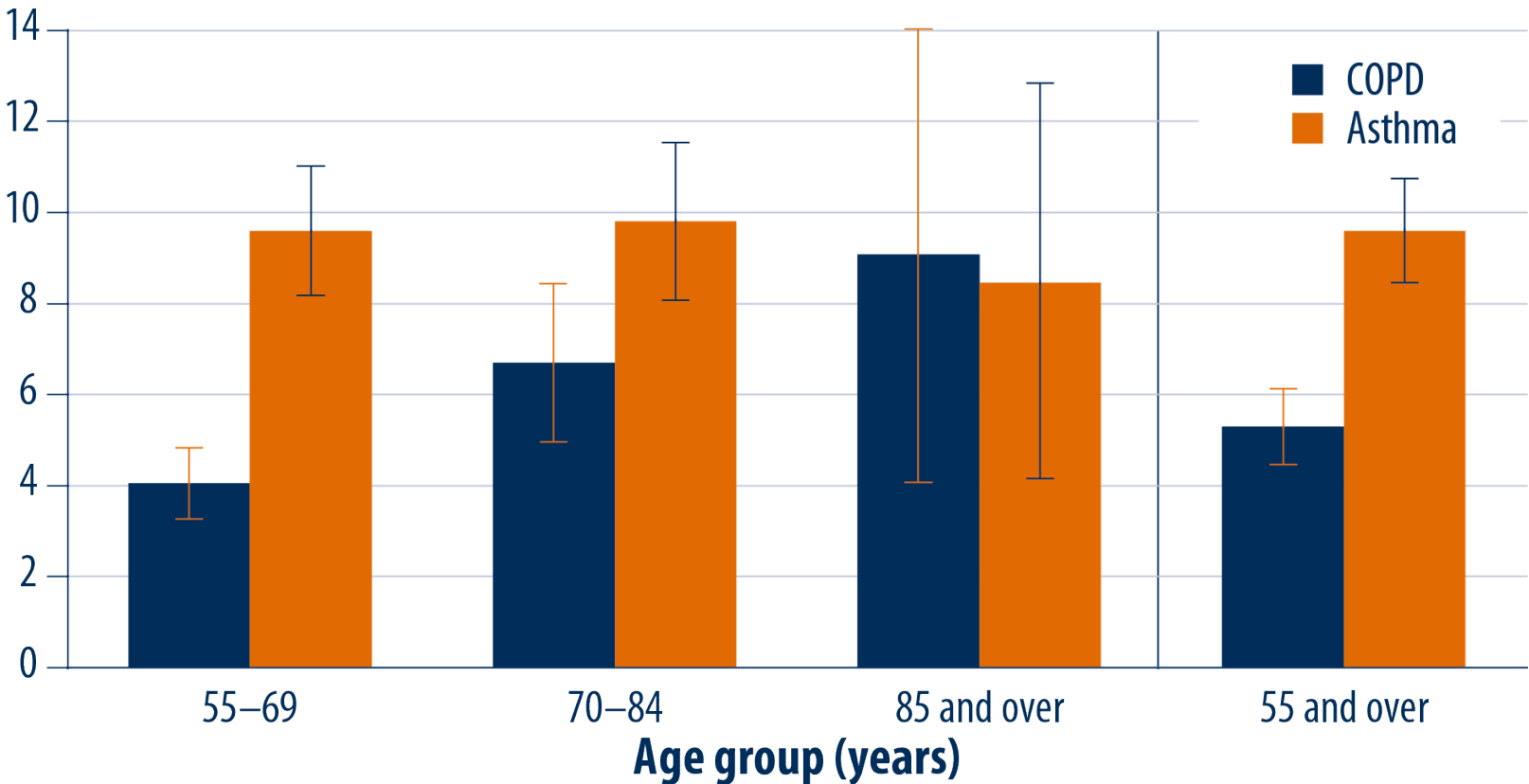
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Prevalence of COPD and asthma, 55 years+



Proportion (per cent)

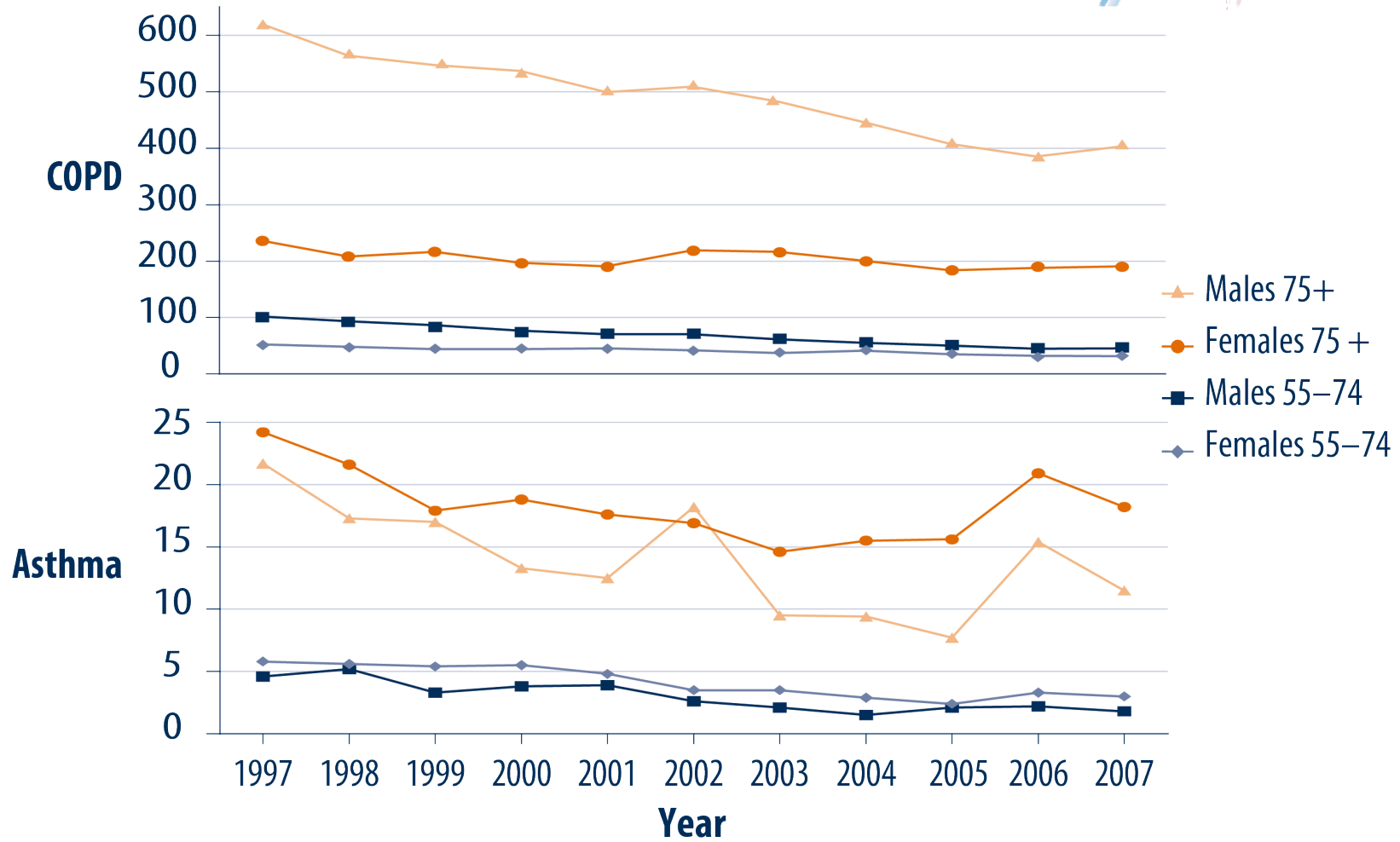


Source: National Health Survey 2007-08

Deaths due to COPD and asthma, by sex

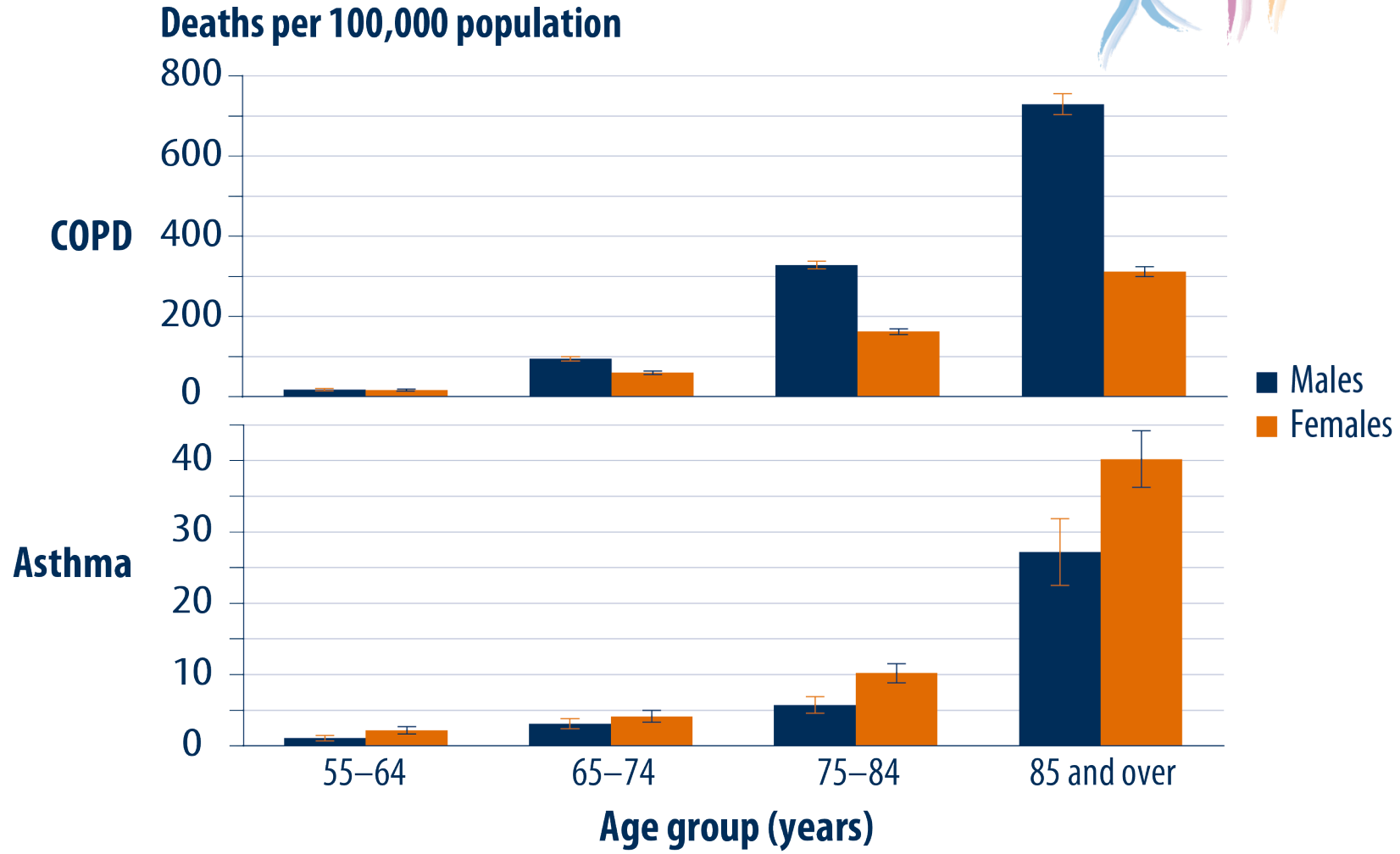


Deaths per 100,000 population



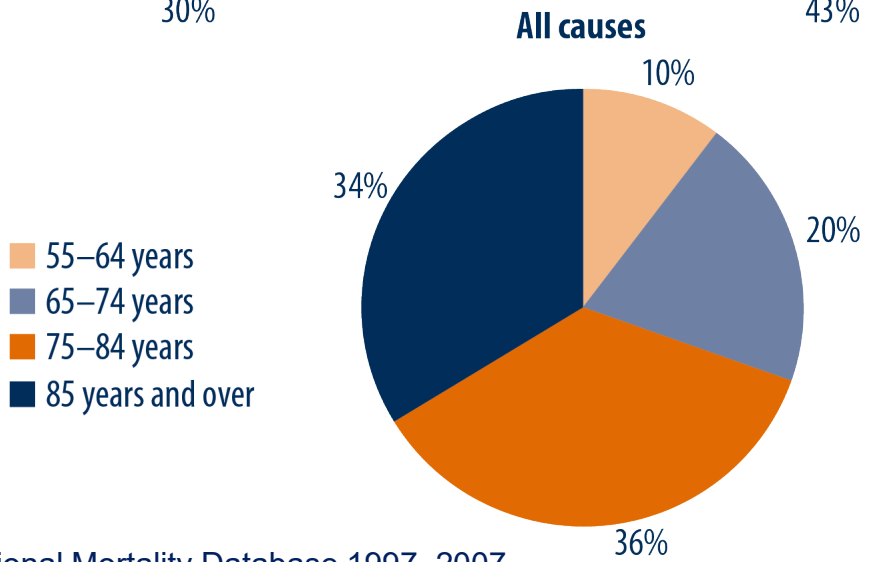
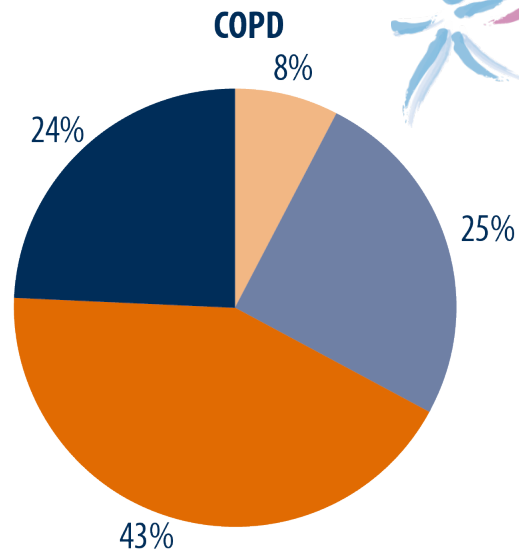
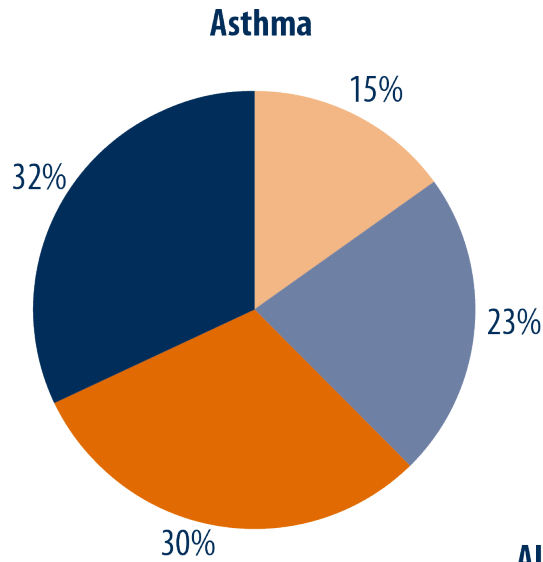
Source: AIHW National Mortality Database

Deaths due to COPD and asthma, by age and sex, 55 years+



Source: AIHW National Mortality Database 2003–2007

Age distribution of deaths due to asthma, COPD and all causes, 55 years+



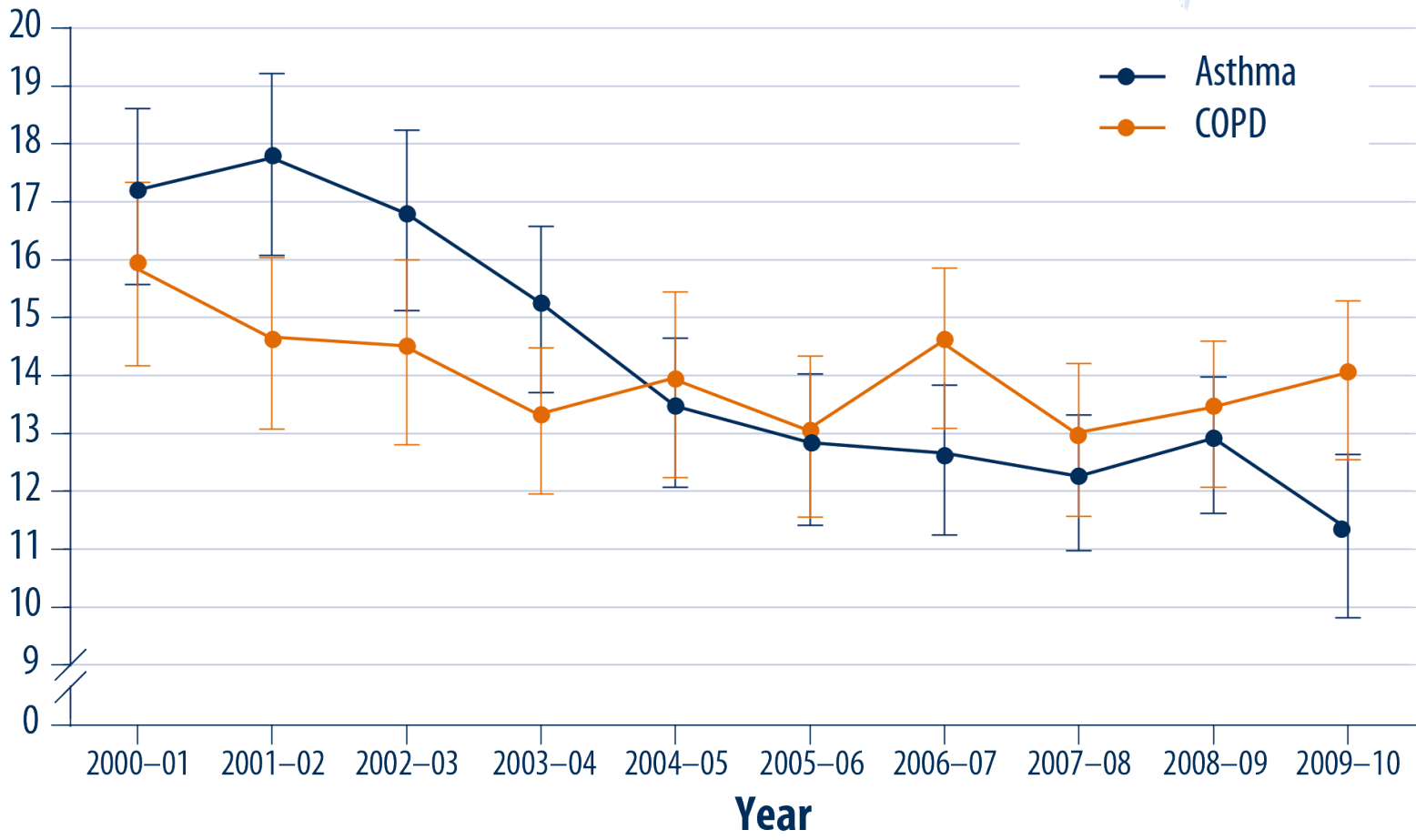
- 55-64 years
- 65-74 years
- 75-84 years
- 85 years and over

Source: AIHW National Mortality Database 1997-2007

GP encounters for asthma and COPD, 55 years+



General practice encounters per 100 population

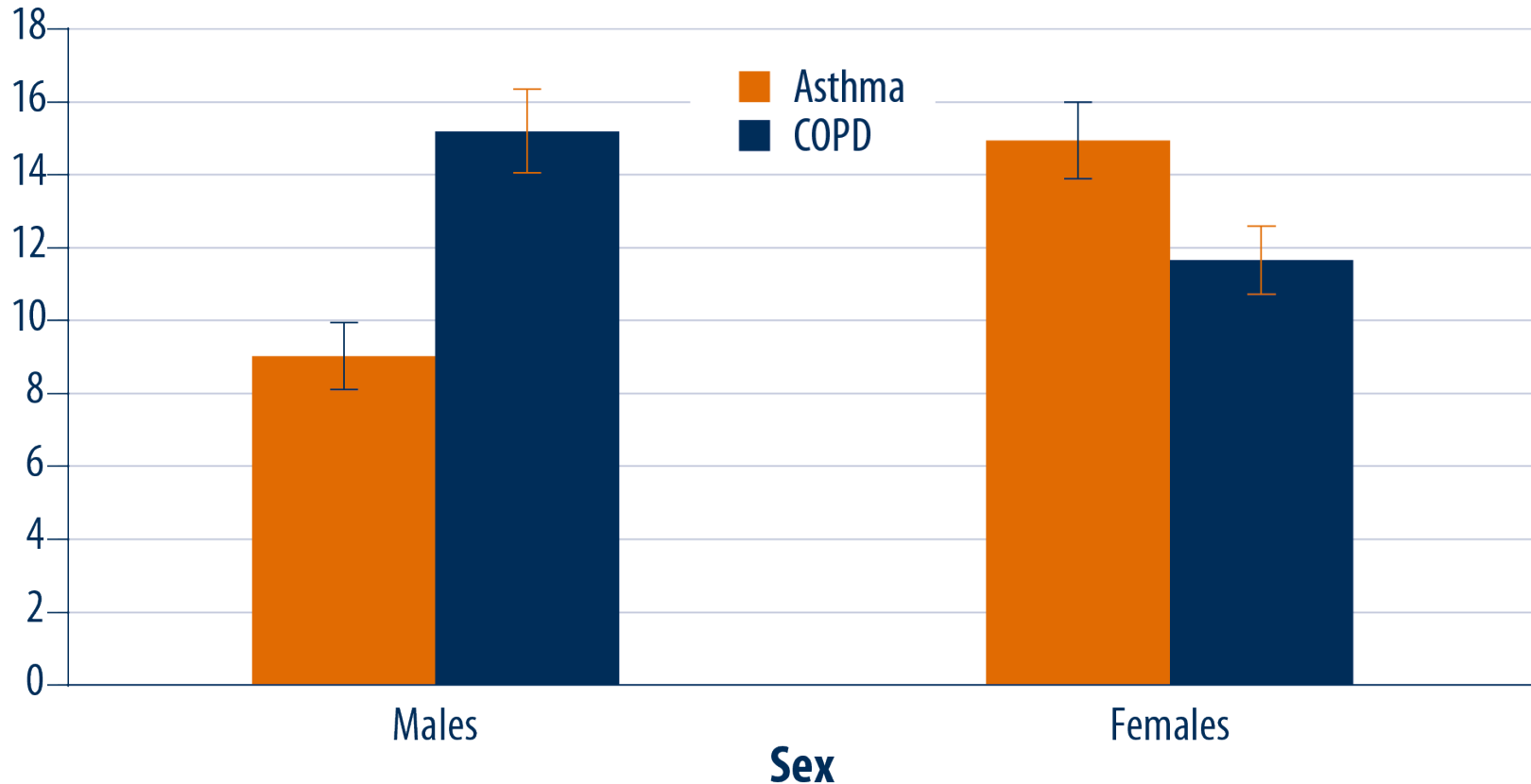


Source: BEACH Survey

GP encounters for asthma and COPD by sex, 55 years+



General practice encounters (per cent)

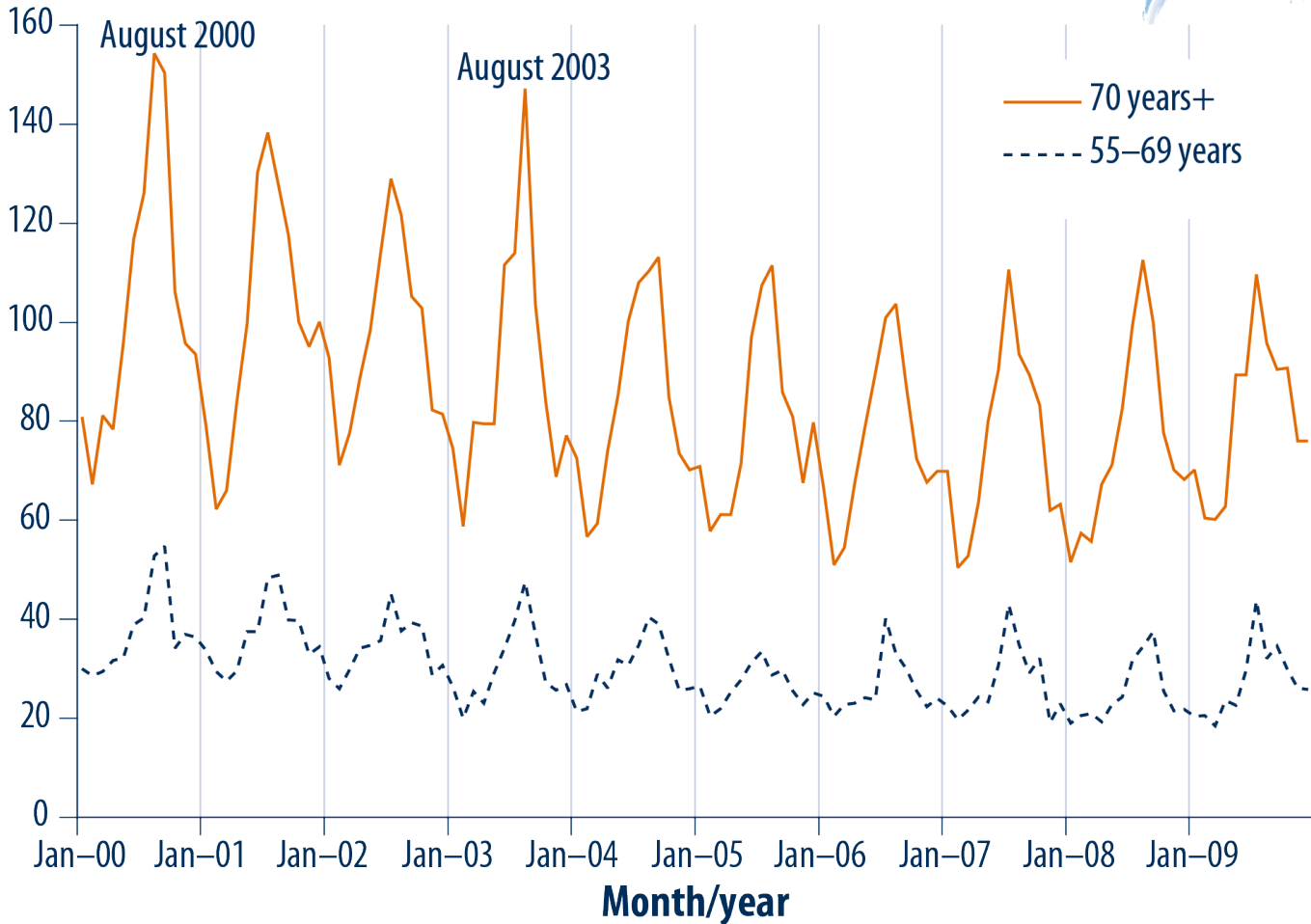


Source: BEACH Survey April 2007–March 2010

ED visits due to COPD by age, 55 years+



ED visits for COPD per 100,000 population

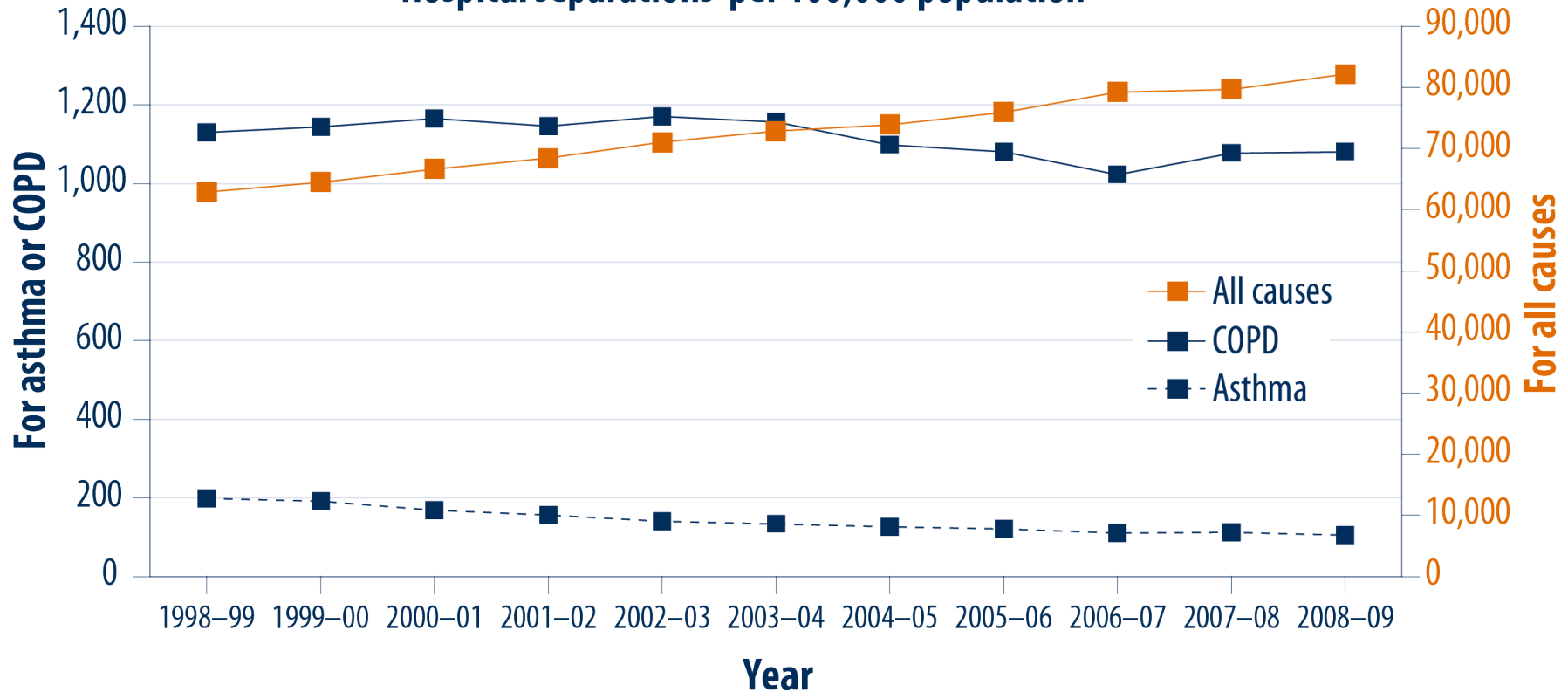


Source: NSW Emergency Department Data Collection 2000–2009

Hospital separations due to asthma, COPD and all causes, 55 years+



Hospital separations per 100,000 population

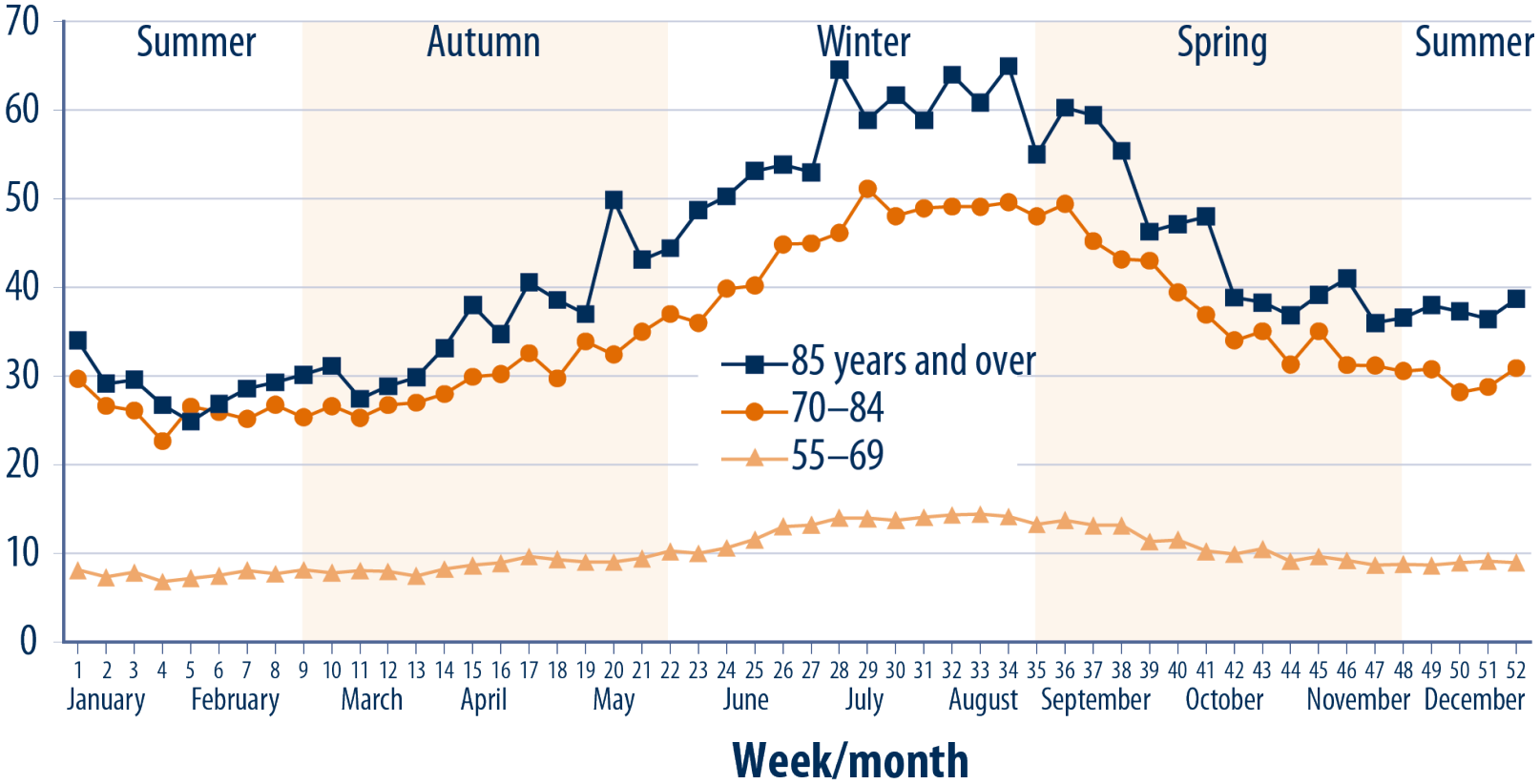


Source: AIHW National Hospital Morbidity Database

Hospital admissions due to COPD by age and seasonal variation, 55 years+



Hospital admissions for COPD per 100,000 population

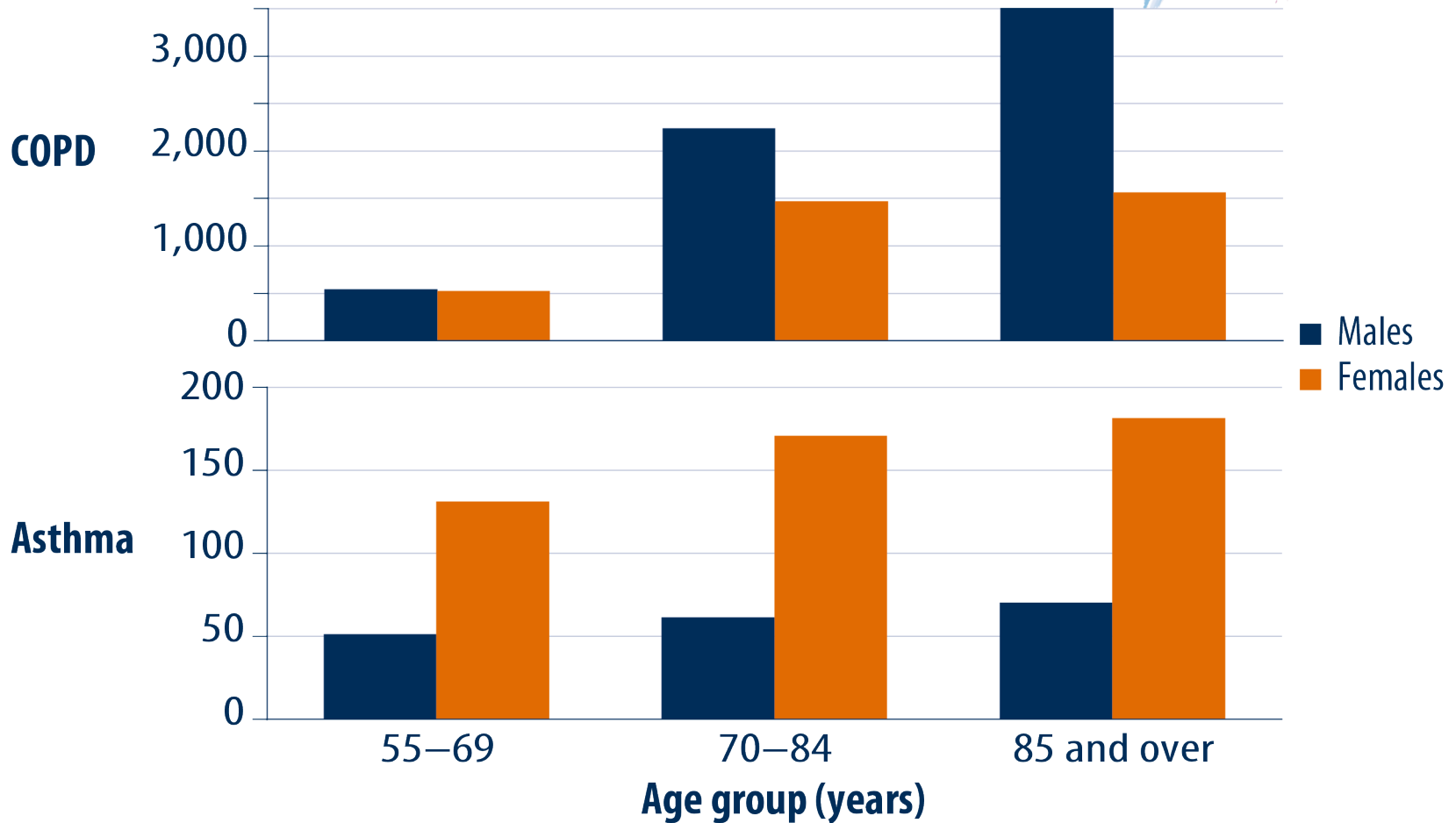


Source: AIHW National Hospital Morbidity Database 2007 and 2008

Hospital separations due to COPD and asthma by age and sex, 55 years+



Hospital separations per 100,000 population

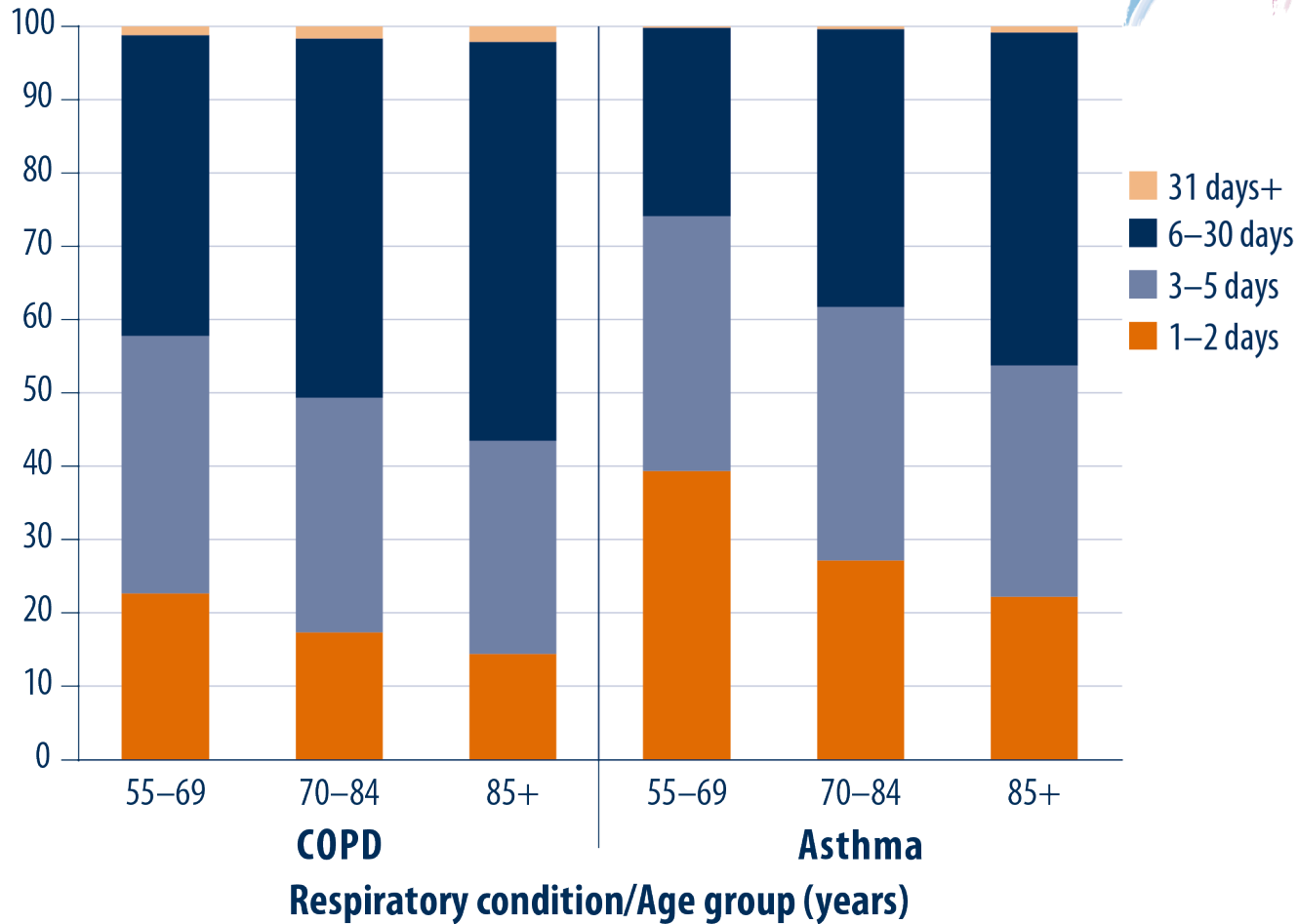


Source: AIHW National Hospital Morbidity Database 2008-09

Frequency of length of hospital stay for COPD and asthma by age, 55 years+

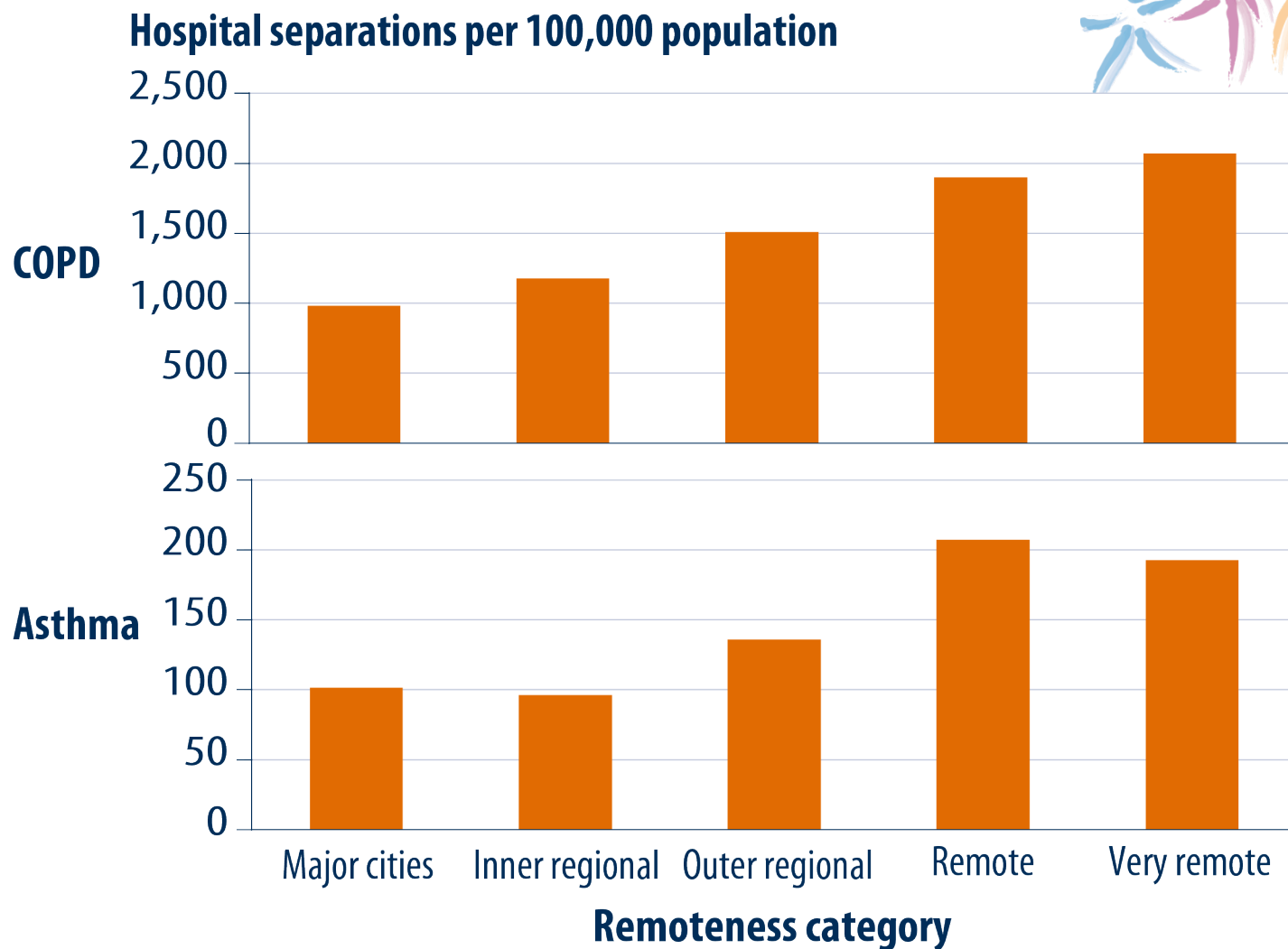


Proportion of hospital separations (per cent)



Source: AIHW National Hospital Morbidity Database 2008-09

Hospital separations due to COPD and asthma by remoteness, 55 years+



Source: AIHW National Hospital Morbidity Database 2008–09



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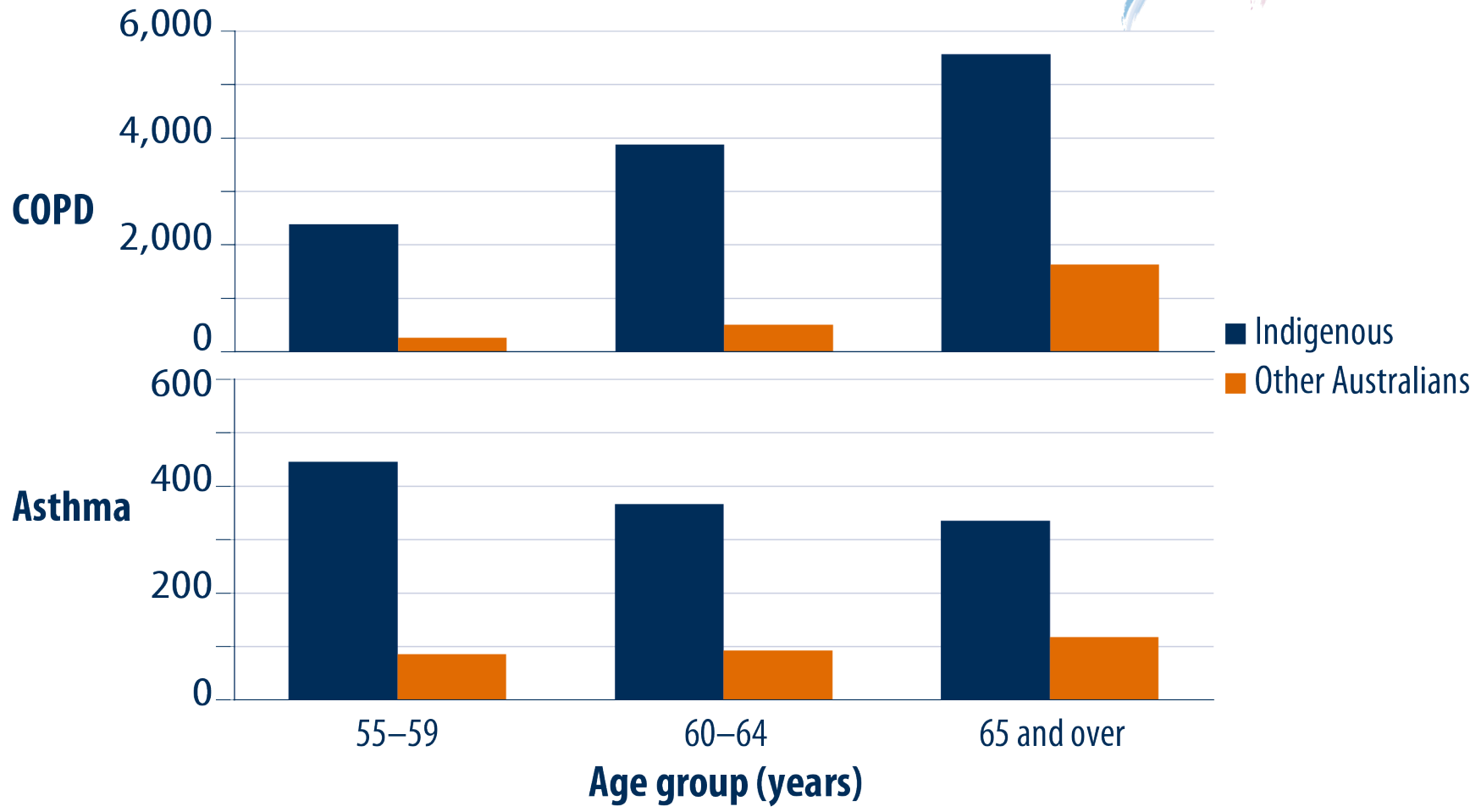
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Hospital separations due to COPD and asthma by age and Indigenous status, 55 years+

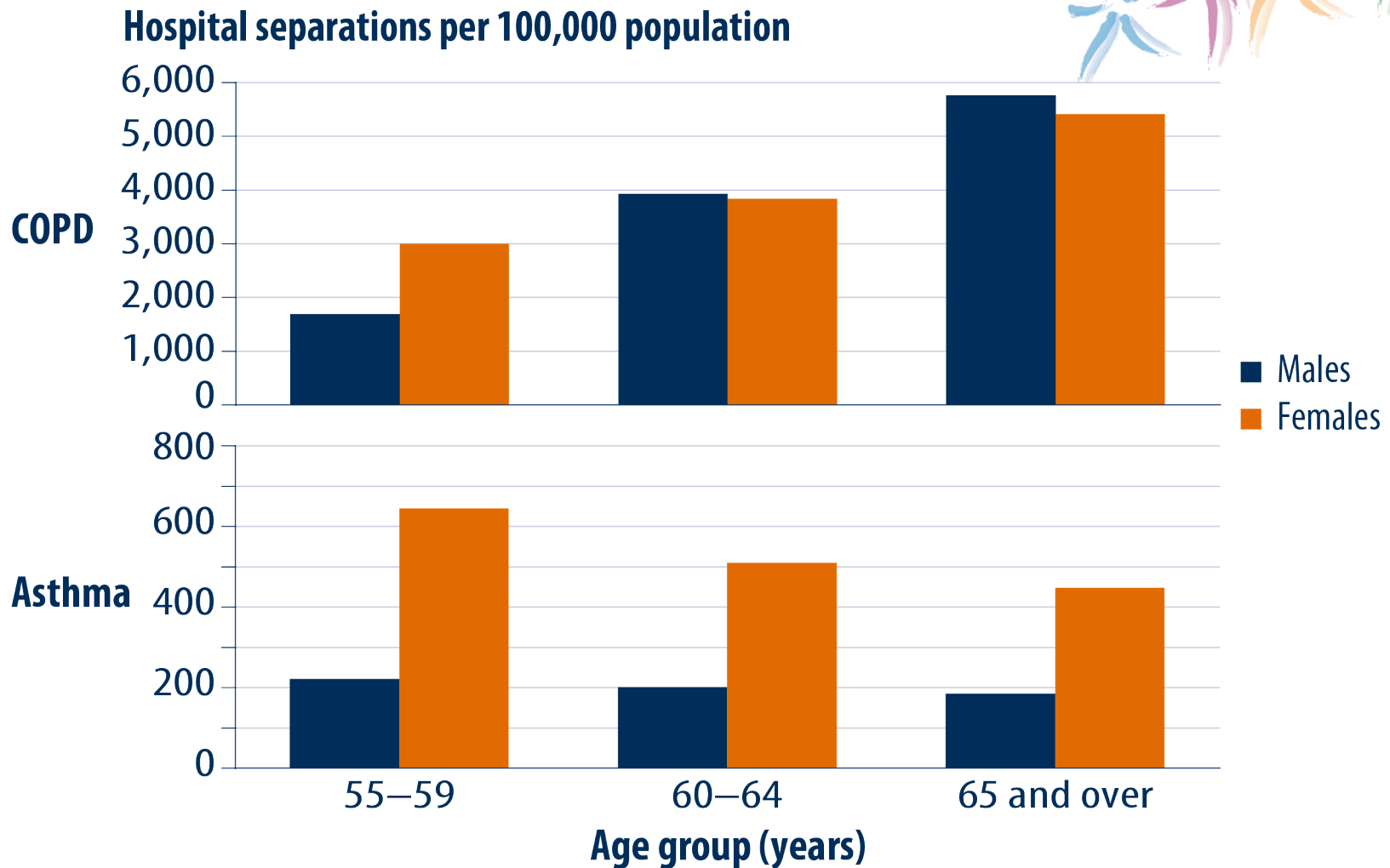


Hospital separations per 100,000 population



Source: AIHW National Hospital Morbidity Database 2008-09

Hospital separations due to COPD and asthma among Indigenous Australians by age and sex, 55 years+

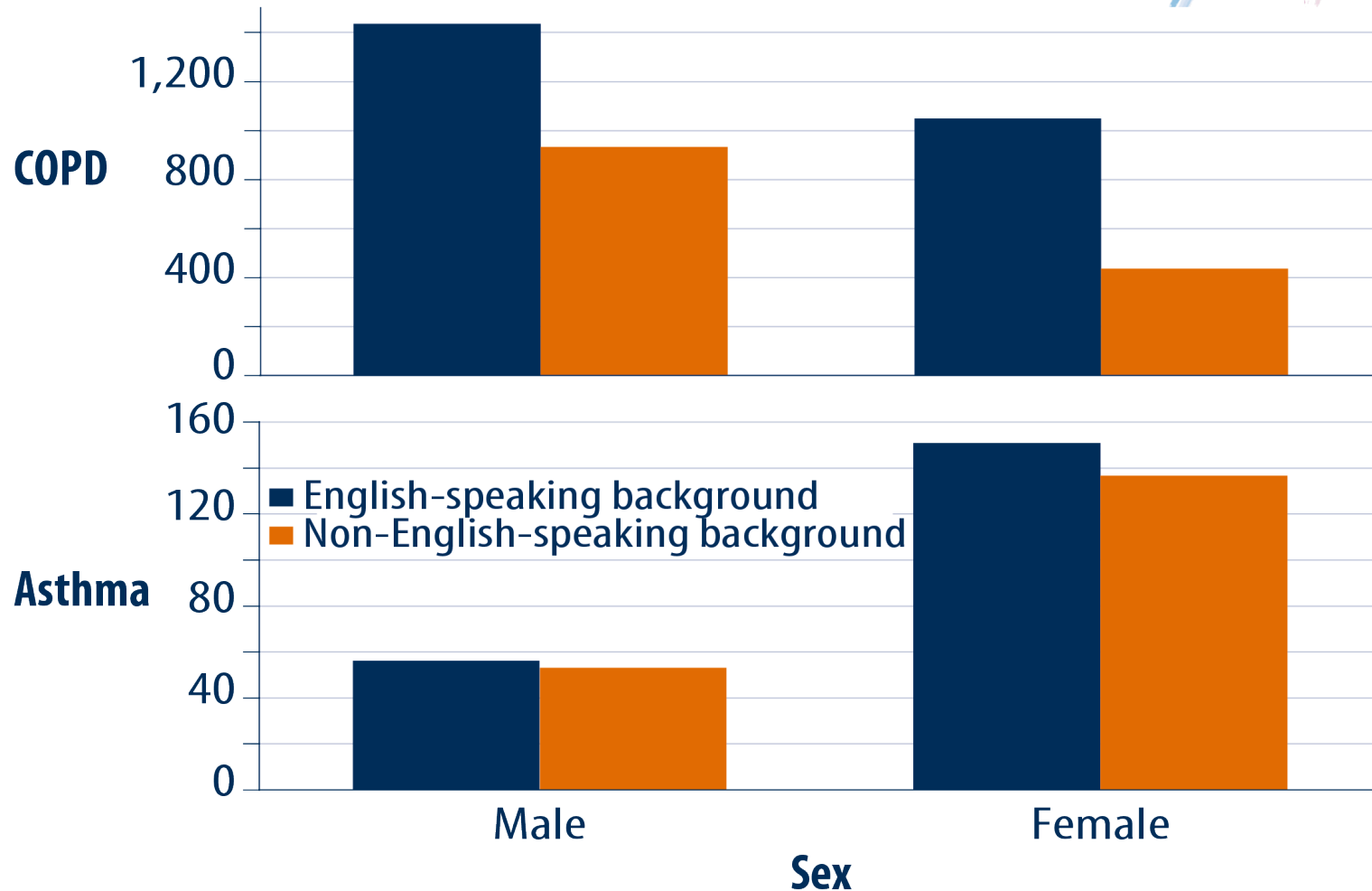


Source: AIHW National Hospital Morbidity Database 2008-09

Hospital separations due to COPD and asthma by country of birth and sex, 55 years+



Hospital separations per 100,000 population

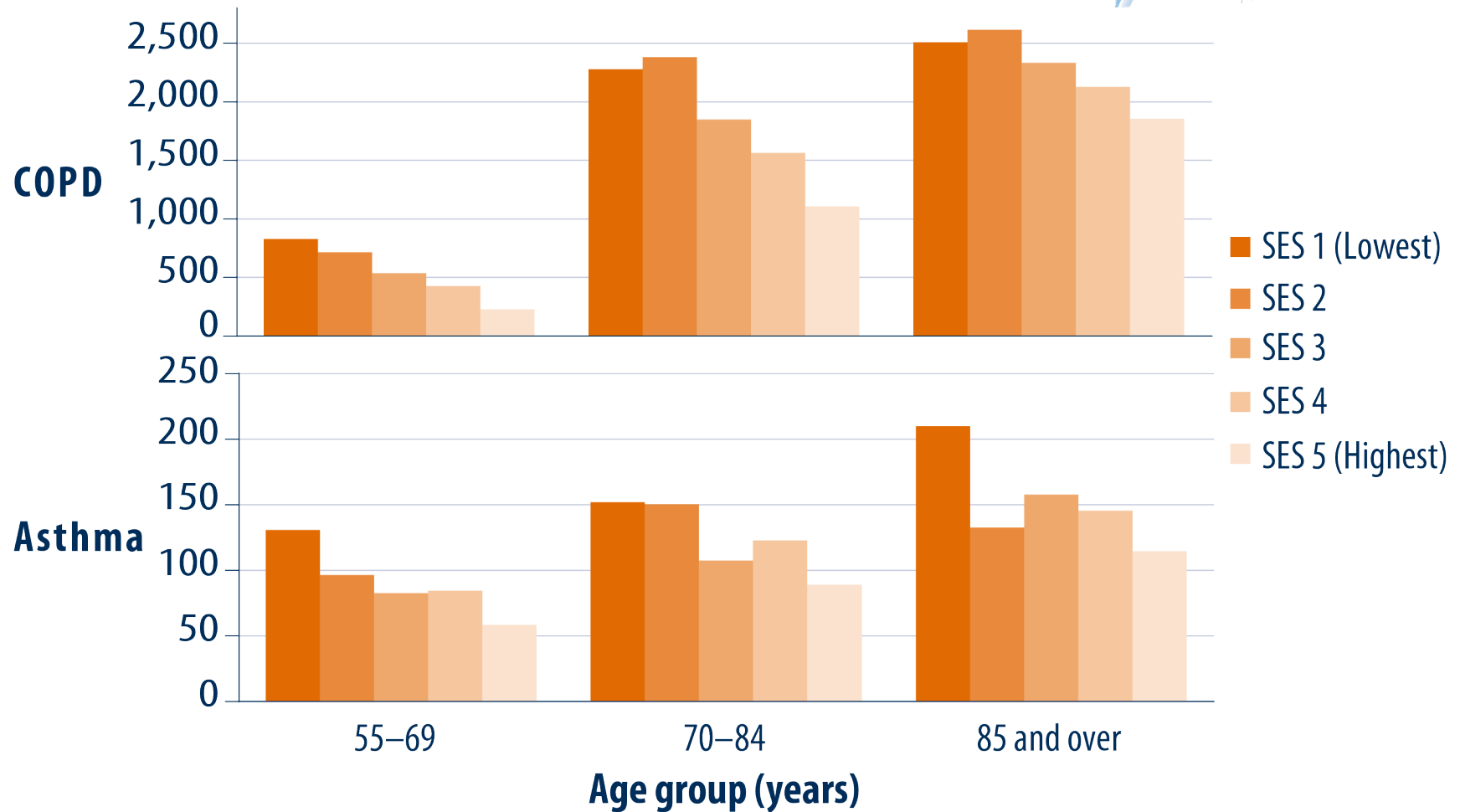


Source: AIHW National Hospital Morbidity Database 2008–09

Hospital separations due to COPD and asthma by age and socioeconomic status, 55 years+



Hospital separations per 100,000 population



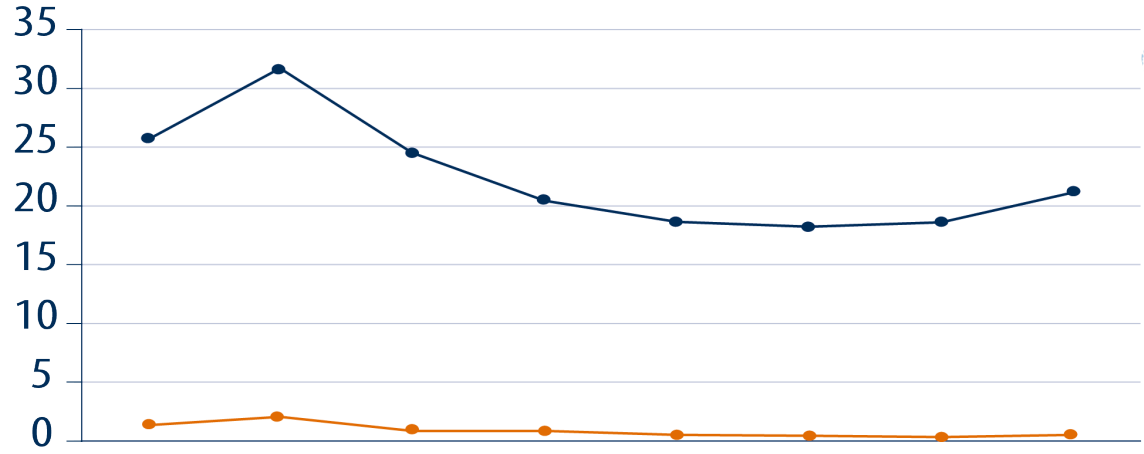
Source: AIHW National Hospital Morbidity Database 2008-09

Hospital separations due to COPD or asthma with non-invasive and invasive ventilation, 55 years+



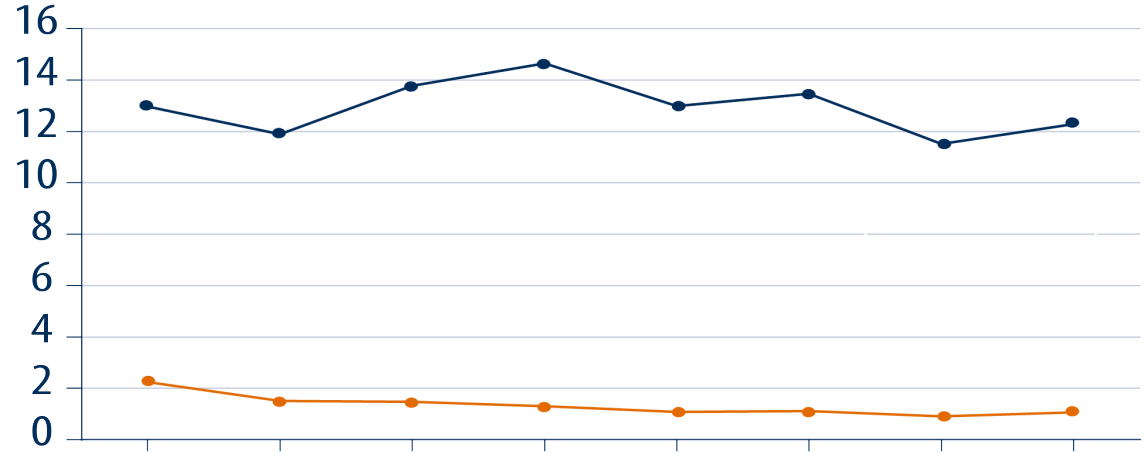
Ventilations per 100,000 population

Non-Invasive ventilation



● COPD
● Asthma

Invasive ventilation



2000-01 2002-03 2004-05 2006-07

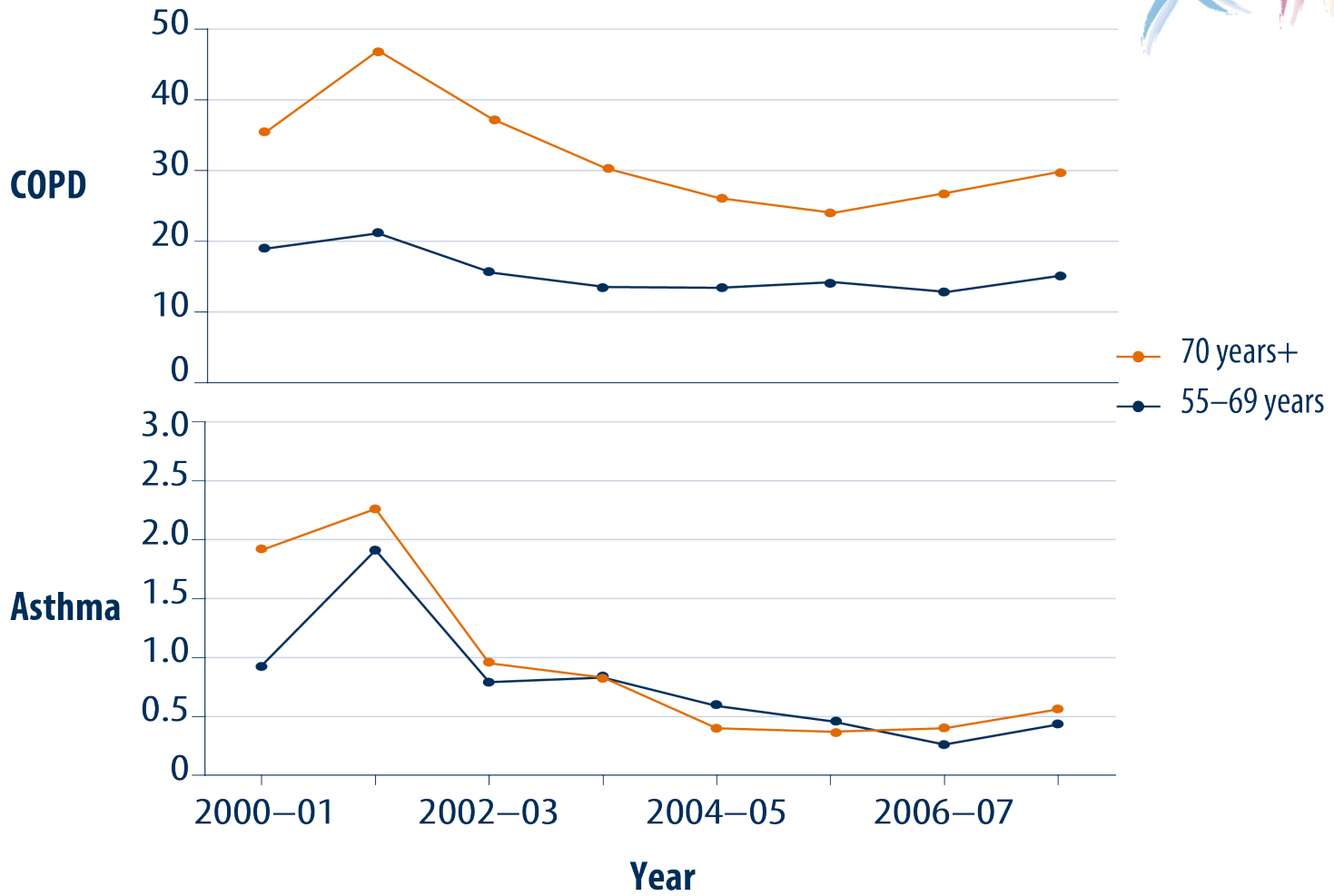
Year

Source: AIHW National Hospital Morbidity Database 2000-01 to 2007-08

Hospital separations due to COPD or asthma with non-invasive ventilation by age , 55 years+

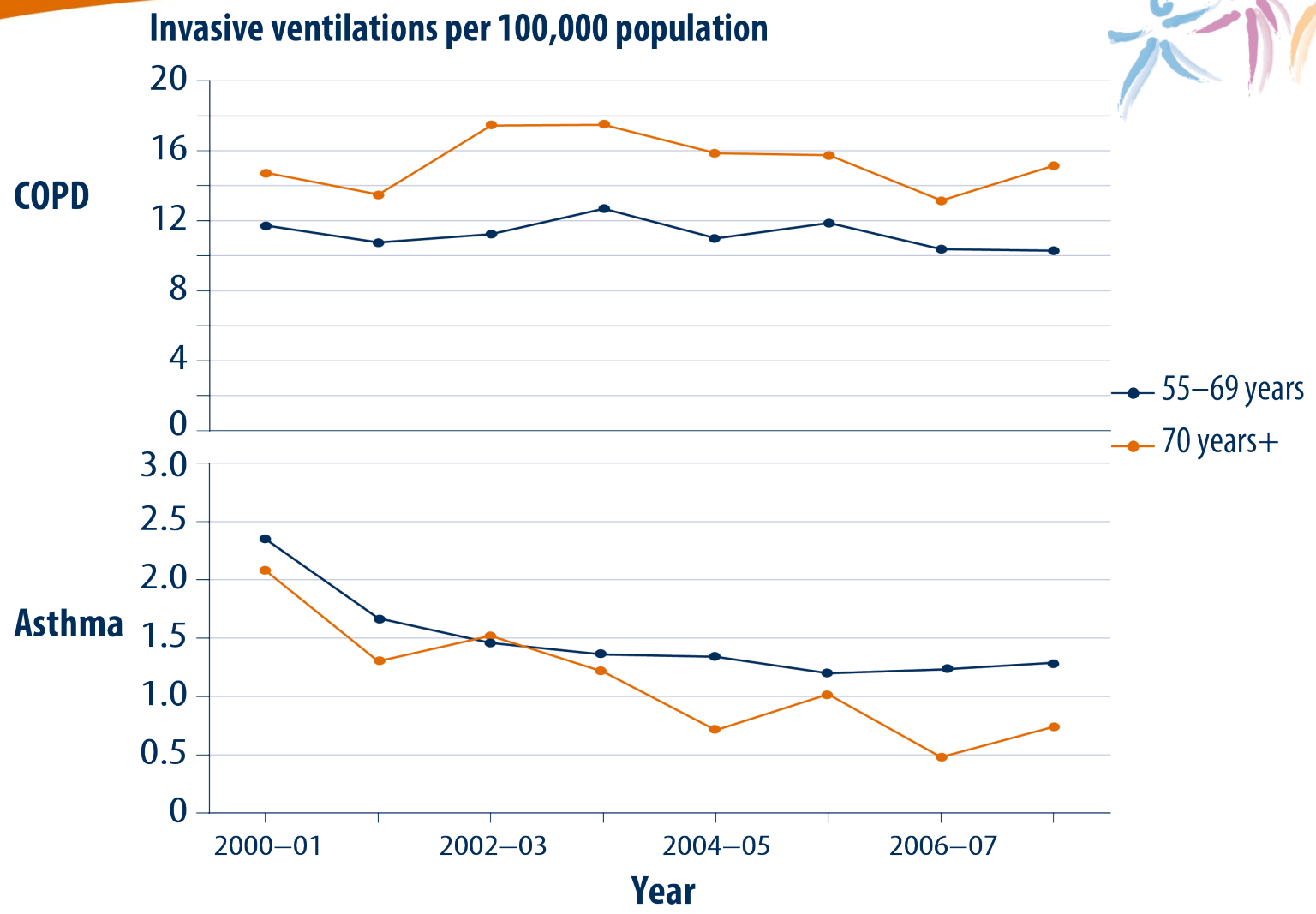


Non-invasive ventilations per 100,000 population



Source: AIHW National Hospital Morbidity Database 2000-01 to 2007-08

Hospital separations due to COPD or asthma with invasive ventilation by age, 55 years+

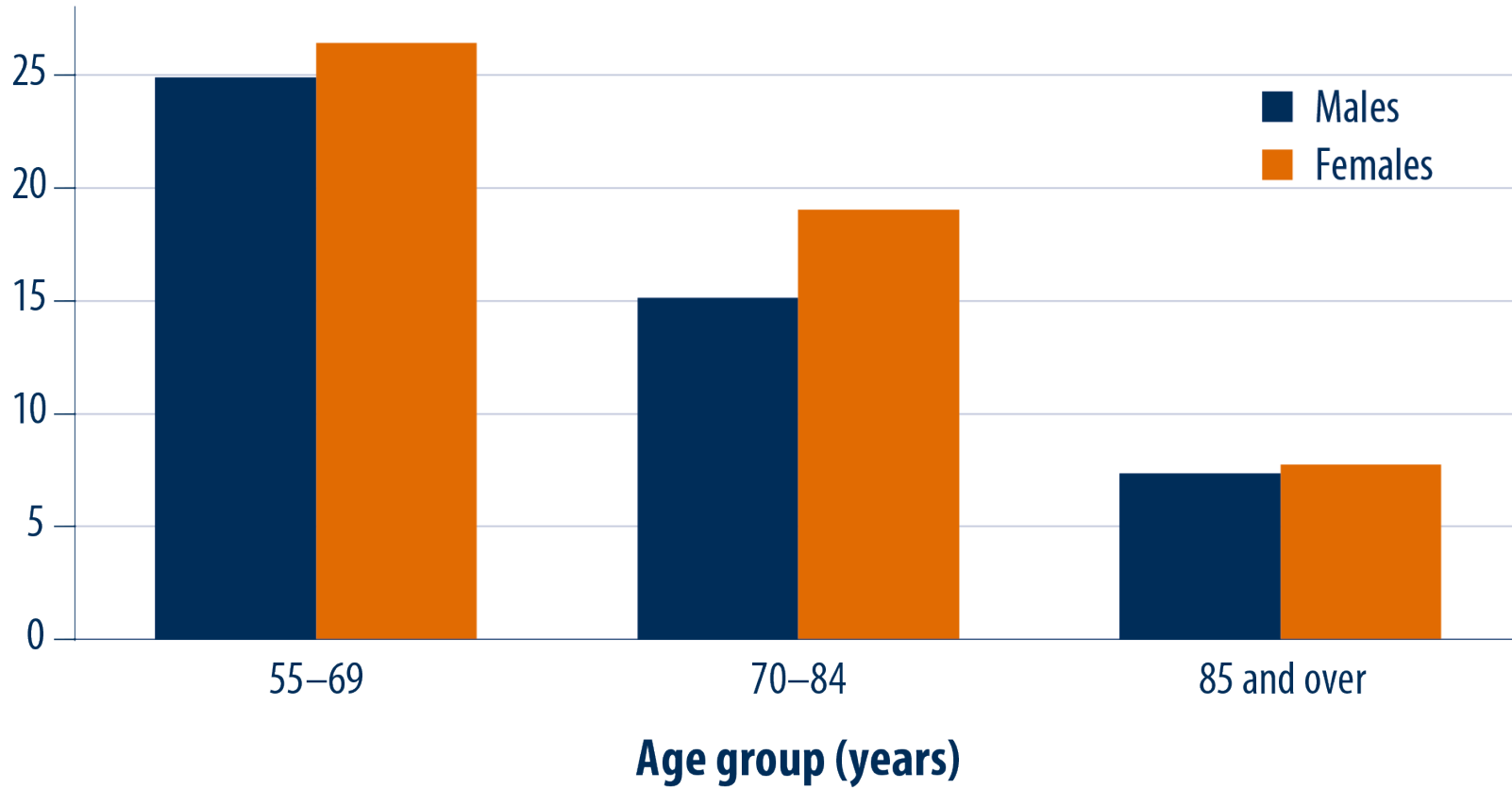


Source: AIHW National Hospital Morbidity Database 2000-01 to 2007-08

Hospital separations due to COPD with *non-invasive* ventilation by age and sex, 55 years+



Non-invasive ventilations per 1,000 hospital separations for COPD

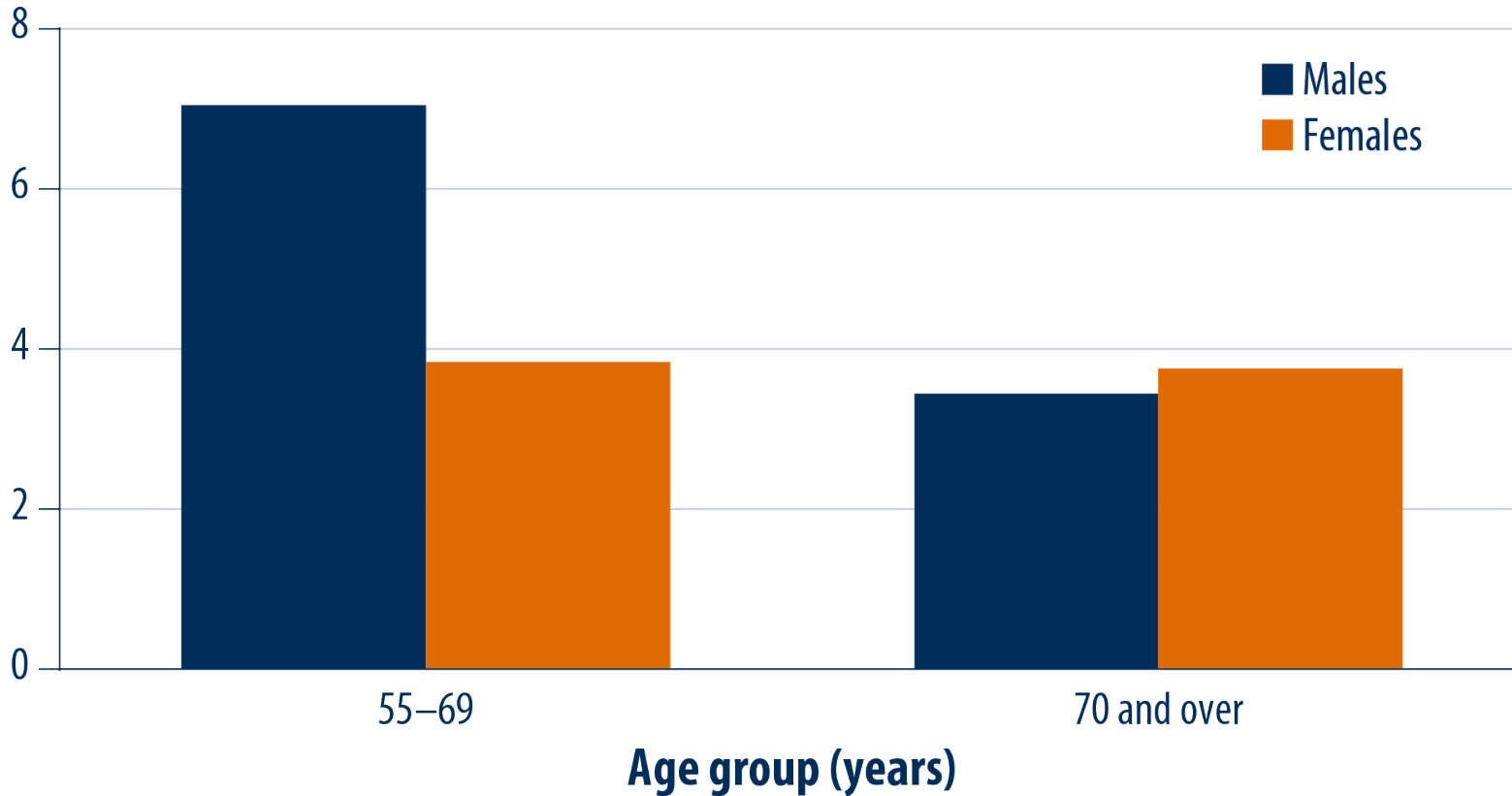


Source: AIHW National Hospital Morbidity Database 2003-04 to 2007-08

Hospital separations due to asthma with *non-invasive* ventilation by age and sex, 55 years+



Non-invasive ventilations per 1,000 hospital separations for asthma

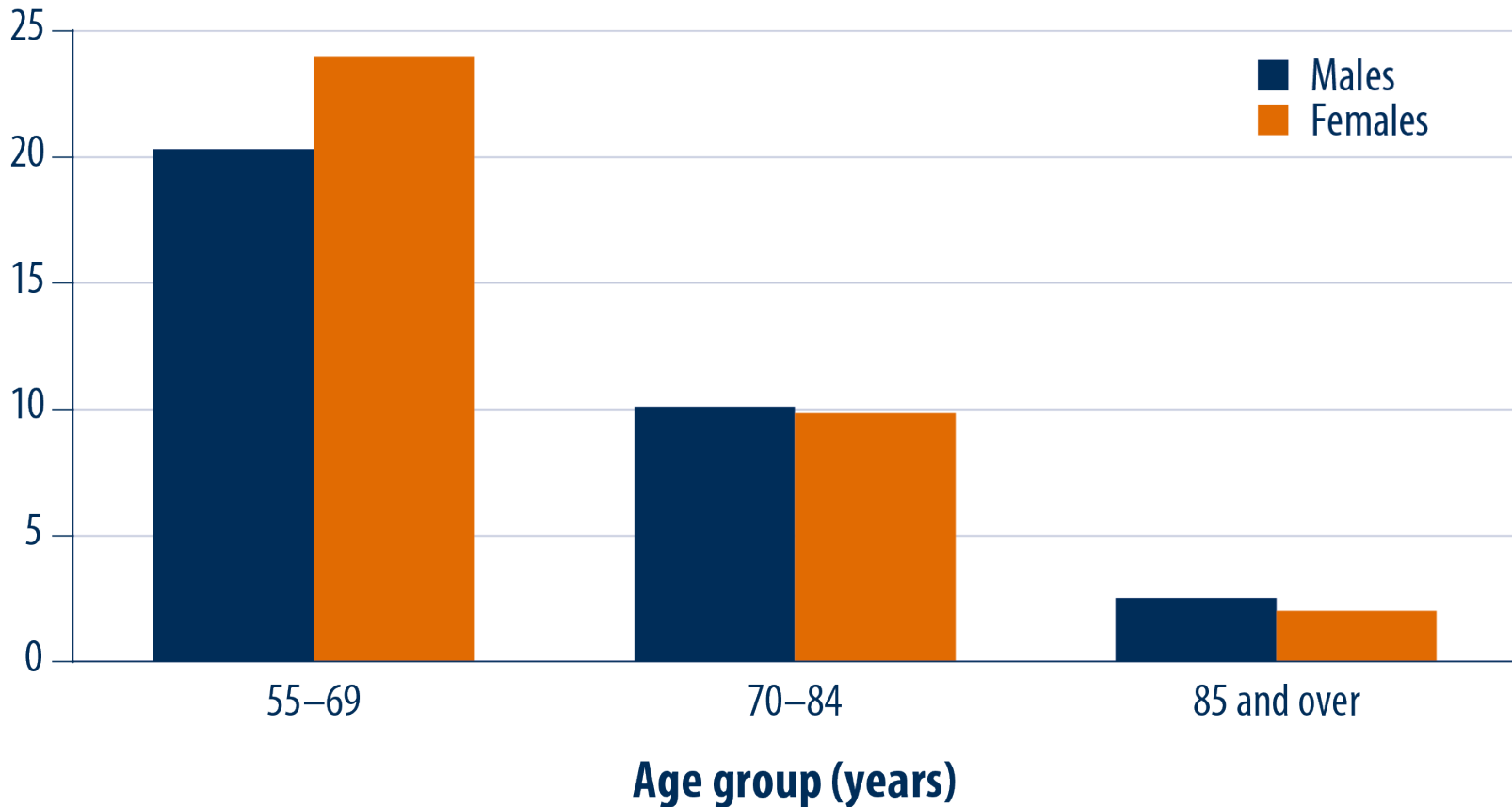


Source: AIHW National Hospital Morbidity Database 2003-04 to 2007-08

Hospital separations due to COPD with invasive ventilation by age and sex, 55 years+



Invasive ventilations per 1,000 hospital separations for COPD

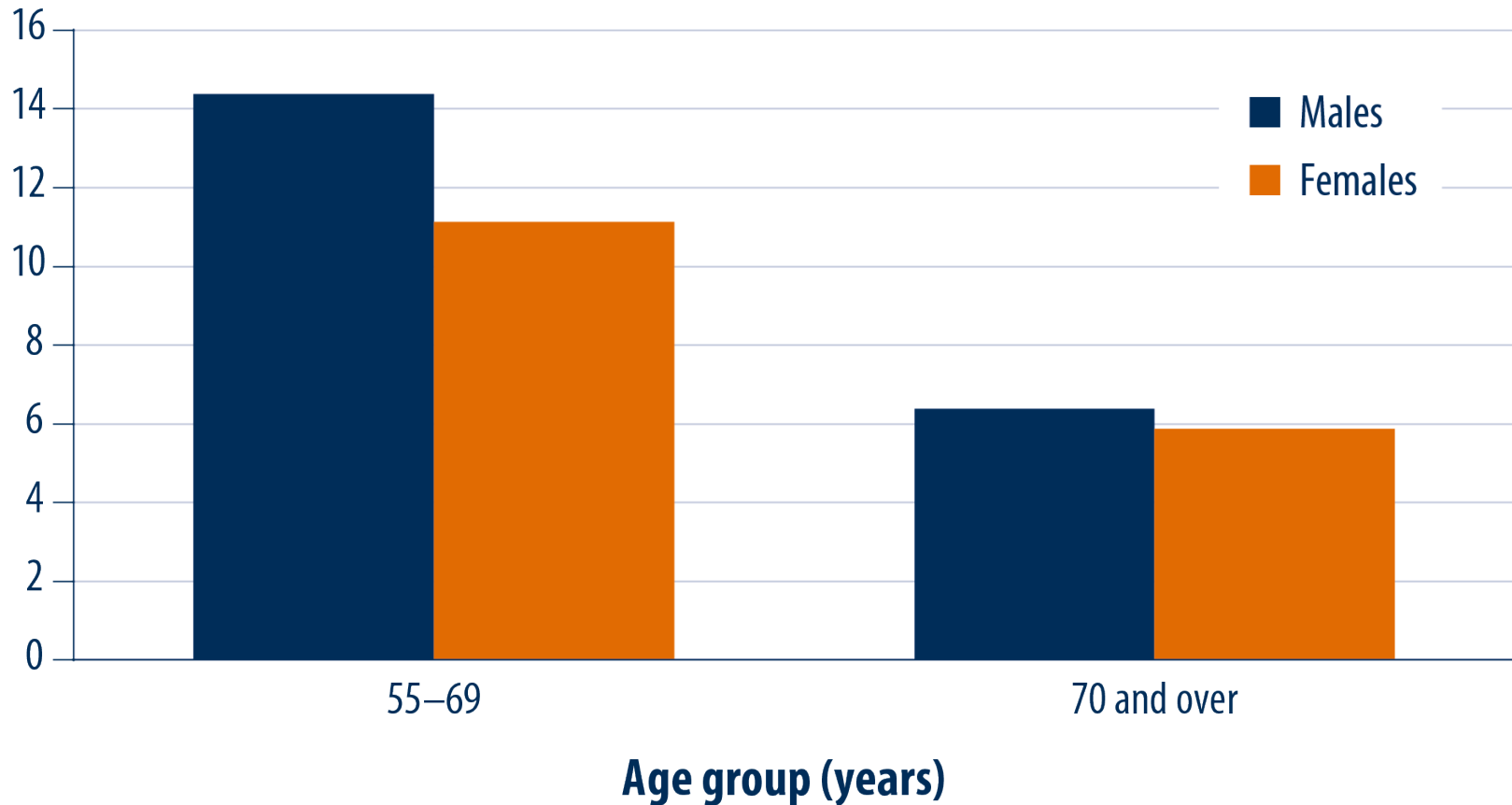


Source: AIHW National Hospital Morbidity Database 2003-04 to 2007-08

Hospital separations due to asthma with invasive ventilation by age and sex, 55 years+



Invasive ventilations per 1,000 hospital separations for asthma

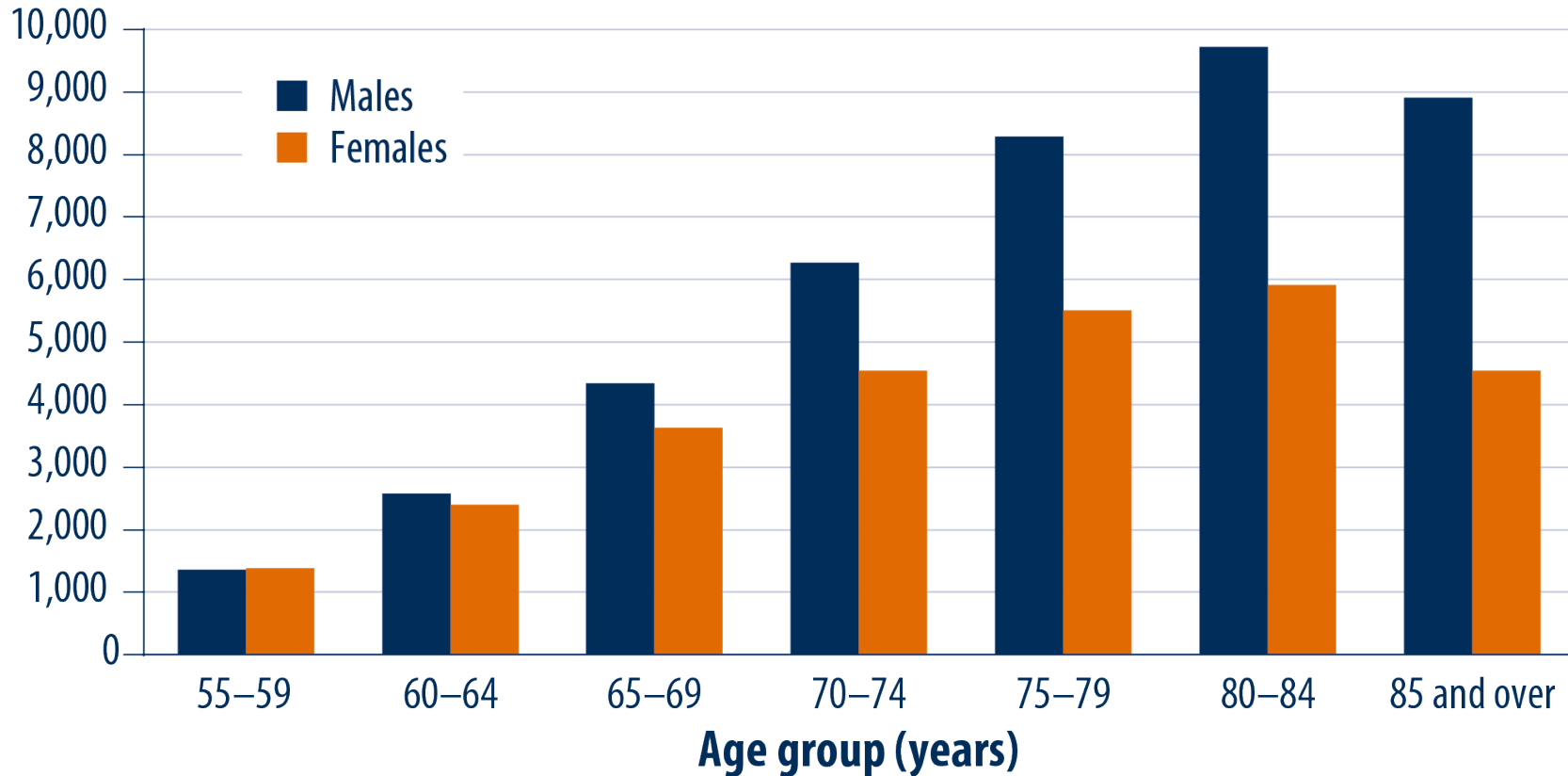


Source: AIHW National Hospital Morbidity Database 2003-04 to 2007-08

Proportion of dispensed tiotropium prescriptions by age and sex, 55 years+



Proportion per 100,000 population

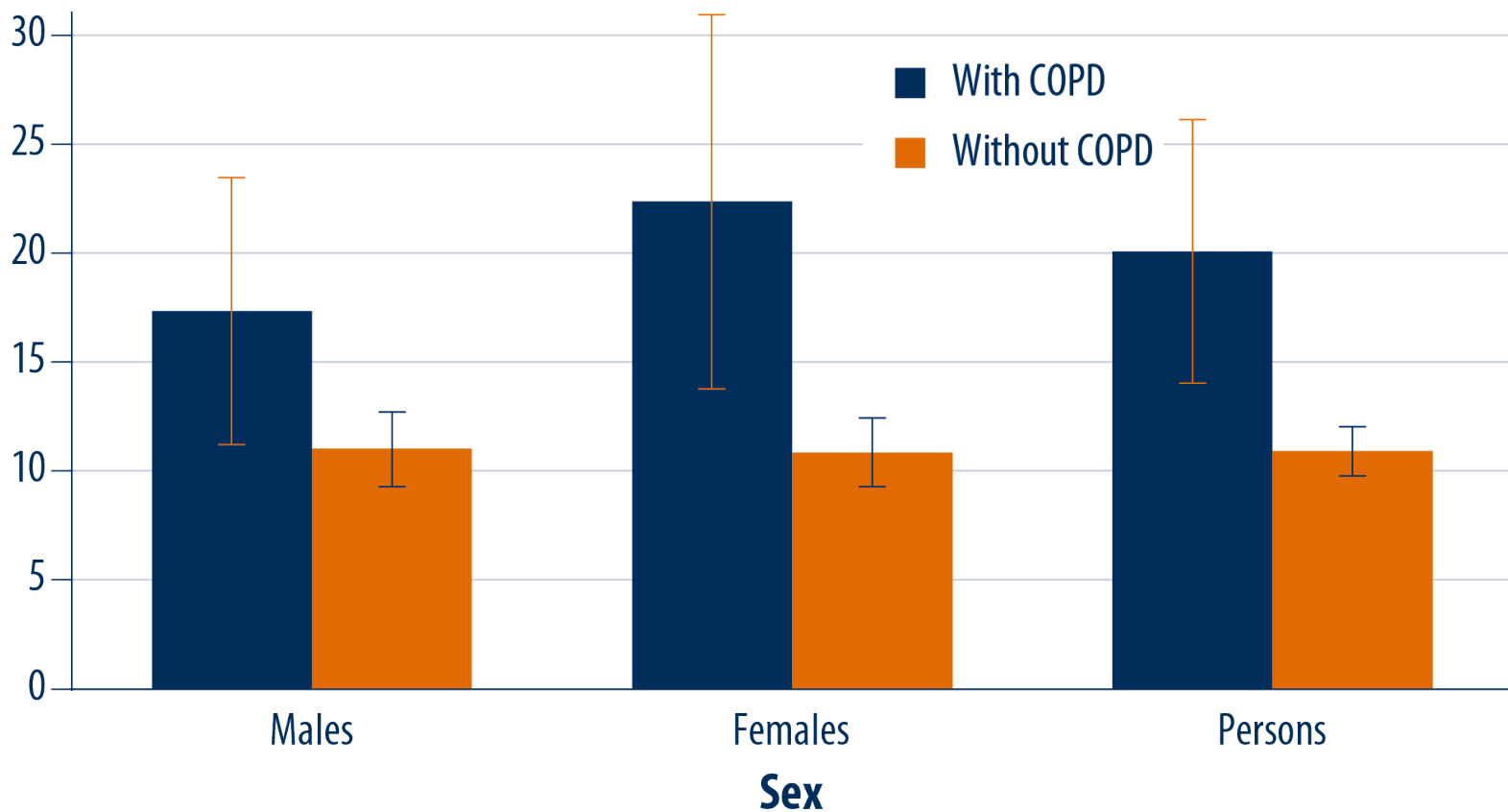


Source: Pharmaceutical Benefits Scheme 2009

Prevalence of current smoking by COPD status and sex, 55 years+



Proportion (per cent)



Source: National Health Survey 2007–08