

# Asthma in Australia 2005

### Australian Centre for Asthma Monitoring (ACAM)



www.woolcock.org.au

# Asthma in Australia 2005

# Chapter 1 Introduction







# Prevalence of National Health Priority Area diseases



# Asthma in Australia 2005

# Chapter 2 Asthma in children







World ranking for the percentage of children with self-reported wheeze age 13 to 14 years



#### Source: GINA 2004 (reproduced with permission).







### **Prevalence of current asthma**

by age group and sex, children aged 0 to 18 years, Australia, 2001



Australian Government
Australian Institute of Health and Welfare

ACAN Australian Centre for Asthma Monitoring



# Prevalence of current asthma by Indigenous status

#### by age group, children aged 0 to 18 years, Australia, 2001



#### Source: ABS National Health Survey 2001.



Australian Government Australian Institute of Health and Welfare





# Proportion of general practice encounters for asthma by age

children aged 0 to 18 years, Australia, April 1998 to March 2004



## Proportion of general practice encounters for asthma by age and sex

children aged 0 to 18 years, Australia, April 2001 to March 2004



Australian Institute of Health and Welfare

Australian Government

Accan Australian Centre for Asthma Monitoring





#### Source: BEACH Survey of General Practice.



Australian Government

4 Australian Institute of Health and Welfare





# Proportion of general practice encounters for asthma by age & socioeconomic status

children aged 0 to 18 years, Australia, April 2001 to March 2004



# ED visits for asthma per 100,000 population, by month and age

children aged 0 to 18 years, NSW and Vic, Jul 1999 to Dec 2003



Month/year

5 to 11 years

2 to 4 years







# Average weekly deviation from average number of ED visits for asthma

children aged 0 to 18 years, NSW and Vic, 1999–2004



Asthma Monitoring

# Monthly per cent of ED visits for asthma that were for severe asthma

children aged 0 to 18 years, NSW and Vic, Jul '99 to Jun '04



# Monthly per cent of ED visits for asthma that resulted in admission to hospital

children aged 0 to 18 years, NSW and Vic, Jul '99 to Jun '04



### ED visits for asthma per 100 children with asthma by age & sex

children aged 0 to 18 years, NSW and Vic, 1999-2004



Australian Institute of Health and Welfare

Australian Centre for Asthma Monitoring



# Hospital separations for asthma per 100,000 population

children aged 0 to 18 years, Australia, 1996–2004



# Hospital separations for asthma per 100,000 population by age & sex

children aged 0 to 18 years ,Australia, 2002-03



# Hospital separations for asthma per 100 children with asthma by age & sex

children aged 0 to 18 years, Australia, 2002–03









### Relative frequency of length of stay for asthma by age

children aged 0 to 18 years, Australia, 2002-03



Australian Institute of Health and Welfare

ACAN Australian Centre for Asthma Monitoring

# Hospital separations for asthma per 100,000 population by Indigenous status

children aged 0 to 18 years, Australia, 2002–03











# Hospital separations for asthma per 100,000 population by age, state & territory





Asthma Monitoring

## Hospital separations for asthma by Englishspeaking vs non-English-speaking background

per 100,000 population, by age group, children aged 0 to 18 years, Australia, 2002–03



Australian Institute of Health and Welfare

Australian Centre for Asthma Monitoring

## Proportion with current asthma with a written asthma action plan (AAP) by age & sex

children aged 2 to 18 years, Australia, 2001



Australian Centre for

Asthma Monitoring

W001C0

Australian Institute of Health and Welfare

# Asthma in Australia 2005

## Chapter 3 Prevalence







#### Prevalence of current asthma, adults Australia, 1990–2004



- Ever diagnosed + symptoms or treatment (SA, age 16 years and over)
- Ever diagnosed + symptoms (Victoria, age 18 years and over)
- Ever diagnosed + still have asthma (SA, Omnibus age 15 years and over)







### Prevalence of current asthma, children

aged 15 years and under, Australia, 1982-2004











Prevalence of self-reported wheeze (per cent)

Source: GINA 2004 (reproduced with permission).



Australian Government

for Australian Institute of Health and Welfare

World ranking

for the

percentage of

adults with

self-reported

wheeze in

previous

12 months

age 20 to 44 years





#### Prevalence of current asthma by age & sex Australia, 2001













#### Source: ABS National Health Survey 2001.



Australian Government Australian Institute of Health and Welfare





#### Prevalence of current asthma by sex and remoteness Australia, 2001



Remoteness

#### Source: ABS National Health Survey 2001.



Australian Government Australian Institute of Health and Welfare





Prevalence of current asthma by age, sex and Indigenous status Australia, 2001





Age group (years)

#### Source: ABS National Health Survey 2001.



Australian Government

Australian Institute of Health and Welfare





### **Prevalence of current asthma among** Indigenous people by age & remoteness Australia, 2001





Australian Institute of Health and Welfare

Australian Centre for Asthma Monitoring



### Prevalence of current asthma by English-speaking versus non-English-speaking background by broad age group, Australia, 2001



Age group (years)

#### Source: ABS National Health Survey 2001.



Australian Government Australian Institute of Health and Welfare ACAM Australian Centre for Asthma Monitoring



#### Prevalence of current asthma by sex and socioeconomic status Australia, 2001


# Asthma in Australia 2005

Chapter 4 Mortality







# Deaths due to asthma per 100,000 population by sex

3 year moving average, all ages & age 5 to 34 years, Australia, 1980–2002



Year

#### Sources: AIHW National Mortality Database; ABS.



Australian Government

\* Australian Institute of Health and Welfare





# Deaths due to asthma per 1,000 population by year of death and age

5 year moving average, age 5 years and over, Australia, 1909–1998



Source: Adapted from Dobbin et al. 2004.







# Deaths due to asthma per 1,000 population by year of death and age

5 year moving average, age 5 years and over, Australia, 1909–1998



Source: Adapted from Dobbin et al. 2004.







World ranking of asthma mortality by country per 100,000 population people aged 5 to 34 years



Source: GINA 2004 (reproduced with permission).



Australian Government

\*\* Australian Institute of Health and Welfare



Country



### Deaths due to asthma by age and sex per 100,000 population, Australia, 1999–2003



Sources: AIHW National Mortality Database; ABS.







## Age distribution for asthma and all cause mortality Australia, 1999–2003



#### Asthma

All causes

### Sources: AIHW National Mortality Database; ABS.



Australian Government Australian Institute of Health and Welfare





# Deaths due to asthma by state and territory

per 100,000 population, Australia, 1999–2003



#### Sources: AIHW National Mortality Database; ABS.



Australian Government

\*\* Australian Institute of Health and Welfare







WOOLCO

INSTITUTE of MEDICAL RESEARCH

## Deaths due to asthma by remoteness per 100,000 population, people aged 5 years and over, Australia, 1999–2003

Sources: AIHW National Mortality Database; ABS.



Australian Government

\* Australian Institute of Health and Welfare



# Deaths due to asthma by sex and English-speaking versus non-English-speaking background

per 100,000 population, people aged 5 years & over, Australia, 1999–2003



Age group (years) and sex





Australian Government

Australian Institute of Health and Welfare





## Deaths due to asthma by English-speaking vs non-English-speaking background

per 100,000 people with asthma, people aged 5 years and over, Australia, 1999–2003



Sources: AIHW National Mortality Database; ABS National Health Survey 2001.







### **Deaths due to asthma by sex and socioeconomic status** per 100,000 population, people aged 5 years and over,



# Average monthly deviation from average number of deaths due to asthma

by broad age group, Australia, 1979–2003



#### Source: AIHW National Mortality Database.





Month



# Asthma in Australia 2005

# Chapter 5 Use of health services for asthma







# **Types of health service use**

with approximate number of episodes of care for asthma in one year and severity of asthma exacerbations



# Asthma in Australia 2005

# Chapter 5.2 General practice encounters







# **General practice encounters for asthma**

per 100 population by age group, Australia, 1998–2004



# Proportion of general practice encounters for asthma by age

Australia, 1998–2004



## General practice encounters for asthma by age group and sex per 100 population, Australia, April 2001 to March 2004



#### Source: BEACH Survey of General Practice.



Australian Institute of Health and Welfare





## Proportion of general practice encounters for asthma by age group and sex Australia, April 2001 to March 2004



### Source: BEACH Survey of General Practice.



Australian Government Australian Institute of Health and Welfare





# Proportion of general practice encounters for asthma by state and territory

Australia, April 2001 to March 2004



#### Source: BEACH Survey of General Practice.



Australian Government

Australian Institute of Health and Welfare





# **Proportion of general practice** encounters for asthma by remoteness

Australia, April 2001 to March 2004



Australian Institute of Health and Welfare



## **Proportion of general practice encounters for** asthma by age & socioeconomic status Australia, April 2001 to March 2004





Australian Government

Australian Institute of Health and Welfare

Australian Centre for Asthma Monitoring



## Number of Asthma 3+ Visit Plan PIP claims

all ages, Australia, November 2001 to December 2004



Month/year

Source: MBS Statistics.







# Asthma 3+ Visit Plan PIP claims by age & sex

per 100,000 population, Australia, 2004



Australian Institute of Health and Welfare

Australian Centre for Asthma Monitoring

## Asthma 3+ Visit Plan PIP claims

per 1,000 people with asthma, Australia, 2004



#### Sources: MBS Statistics; ABS National Health Survey 2001.







## Asthma 3+ Visit Plan PIP claims by state and territory per 100,000 population, Australia, 2004



#### Sources: MBS Statistics; ABS.







# Asthma in Australia 2005

# Chapter 5.3 Hospital emergency department visits









# ED visits for asthma by age & sex

per 100 people with asthma, NSW and Vic, Jul 1999 to Jun 2004



### Sources: NSW EDDC (HOIST); VEMD; ABS National Health Survey 2001.







# Seasonal variation in ED visits for asthma

NSW and Vic, Jul 1999 to Jun 2004



Sources: NSW EDDC (HOIST); VEMD.







# Proportion of ED visits for asthma resulting in admission to hospital by age & sex

NSW and Vic, Jul 1999 to Jun 2004





Australian Institute of Health and Welfare





## **Proportion of all ED visits that are for** asthma by age and socioeconomic status NSW and Vic, Jul 1999 to Jun 2004



Australian Institute of Health and Welfare

Australian Centre for Asthma Monitoring



## Proportion of ED visits for asthma that resulted in admission to hospital by age & socioeconomic status NSW and Vic, Jul 1999 to Jun 2004



# Asthma in Australia 2005

# Chapter 5.4 Hospitalisations






## Hospital separations for asthma

per 100,000 population, Australia, 1993–2004



#### Sources: AIHW NHMD; ABS.





Year





#### Source: AIHW NHMD.







#### Hospital patient days for asthma per 100,000 population, Australia, 1993–2004



#### Sources: AIHW NHMD; ABS.





Year



## Seasonal variation in hospital separations for asthma

by age group, Australia, 1993–2003



#### Hospital separations for asthma by age and sex per 100,000 population, Australia, 2002-03

1,400 Hospital separations per 100,000 population Males ,200 Females 1.000 800 600 400 200 0 0 to 4 5 to 14 15 to 34 35 to 64 65 and over Age group (years) Sources: AIHW NHMD; ABS. Australian Government

WOOLCOC INSTITUTE of MEDICAL RESEARC

Australian Institute of Health and Welfare

#### Hospital separations for asthma by age and sex per 100 people with asthma, Australia, 2002-03

16 Hospital separations per 100 people with asthma 14 Males Females 12 10 8 6 4 2 0 0 to 4 5 to 14 15 to 34 35 to 64 65 and over Age group (years)

Sources: AIHW NHMD; ABS National Health Survey 2001.



Australian Institute of Health and Welfare







### Hospital separations for asthma by age and remoteness per 100,000 population, Australia, 2002–03



#### Hospital patient days for asthma by age and remoteness per 100,000 population, Australia, 2002–03



Australian Institute of Health and Welfare

# Hospital separations for asthma by age and Indigenous status

per 100,000 population, Australia, 2002–03



#### Hospital patient days for asthma by age and Indigenous status per 100,000 population, Australia, 2002–03



# Hospital separations for asthma by age and English-speaking versus non-English-speaking background

per 100,000 population, people aged 5 years and over, Australia, 2002–03



# Hospital patient days for asthma by age and English-speaking versus non-English-speaking background

per 100,000 population, people aged 5 years and over, Australia, 2002–03



### Hospital separations for asthma by age and socioeconomic status per 100,000 population, Australia, 2002–03



### Hospital patient days for asthma by age and socioeconomic status per 100,000 population, Australia, 2002–03



Australian Institute of Health and Welfare

# Asthma in Australia 2005

# Chapter 5.5 Invasive mechanical ventilation







# Proportion of hospital separations for asthma with invasive mechanical ventilation by age

Australia, 1993–2002



#### Rate of hospital separations for asthma with invasive mechanical ventilation by age & sex Australia, 1993–2002



Australian Institute of Health and Welfare

#### Hospital separations for asthma with mechanical ventilation by age & English-speaking vs non-English-speaking background per 1,000 hospitalisations for asthma, Australia, 1995–2002 30



Australian Institute of Health and Welfare



# Hospital separations for asthma with invasive mechanical ventilation by age, state and territory

per 1,000 hospitalisations for asthma, Australia, 1995–2002



# Asthma in Australia 2005

# Chapter 5.6 Re-attendances for asthma







#### Re-attendance rate for asthma within 28 days NSW and Vic, 2000–03



#### Sources: NSW ISC; NSW EDDC; VAED; VEMD.



Initial (index) health service





#### Re-attendance rate for asthma within 3 months NSW and Vic, 2000–03



#### Hospital re-admission rate for asthma within 28 days by age and sex NSW and Vic, 2000–03



Australian Government Australian Institute of Health and Welfare



### Re-attendance rate for asthma within 28 days by age and sex NSW and Vic, 2000–03



Australian Institute of Health and Welfare



# Asthma in Australia 2005

# Chapter 6 Management







# Asthma in Australia 2005

# Chapter 6.2 Written asthma action plans







## Possession of written asthma action plans: adults with current asthma



\*\*\* Australian Institute of Health and Welfare

# Possession of a written asthma action plan by age and sex

people with current asthma, Australia, 2001





Australian Government





#### Source: ABS National Health Survey 2001.



Australian Government Australian Institute of Health and Welfare





# Possession of a written asthma action plan by remoteness

#### people with current asthma, all ages, Australia, 2001



### Possession of a written asthma action plan by socioeconomic status people with current asthma, all ages, Australia, 2001



Source: ABS National Health Survey 2001.







# Asthma in Australia 2005

# Chapter 6.3 Medication use







# Respiratory medications by defined daily dose (DDD)

per 1,000 persons per day, Australia, 1996–2004



Sources: (a) IMS Health; (b) PBS & RPBS; ABS.



## Delivery devices supplied for the administration of short-acting beta agonist and anti-cholinergic medication by defined daily dose (DDD)

per 1,000 persons per day, supplied by wholesalers, Australia, 1996–2004


### Inhaled corticosteroids supplied by wholesalers separately or as part of combined therapy by defined daily dose (DDD)

per 1,000 persons per day, Australia, 1996–2004



Sources: IMS Health; ABS. Australian Government Australian Institute of Health and Welfare Combined

ACAM Australian Centre for Asthma Monitoring

Inhaled corticosteroids alone



### Relative potency of inhaled corticosteroids supplied separately or as part of combined therapy by defined daily dose (DDD)





Australian Government

ACAM Australian Centre for Asthma Monitoring



# Use of asthma medication in the last 2 weeks by age and type of medication





- Short-acting beta agonists (include salbutamol & terbutaline)
- Short-acting anti-cholinergics (inlcude ipratropium)
- Long-acting beta agonists (include salmeterol & eformoterol (formoterol))
- Inhaled corticosteroids (include beclomethasone dipropionate, budesonide, fluticasone propionate)

Cromones (include cromoglycate and nedocromil)

### Source: ABS National Health Survey 2001.



Australian Government

Australian Institute of Health and Welfare

Other





Chapter 6.4 Spirometry







### **Claims for the performance of spirometry**

and complex lung function tests which included spirometry, all ages, Australia, 1994–2004



Total spirometry

Office-based claims (Medicare item 11506)

Sources: HIC Health Statistics; ABS.

\* Australian Institute of Health and Welfare

Laboratory-based claims (Medicare items 11503, 11509 & 11512)





### **Claims for the performance of spirometry**

and complex lung function tests which included spirometry, people aged 5 to 34 years, Australia, 1994–2004



Total claims

Office-based claims (Medicare item 11506)

Sources: HIC Health Statistics; ABS.



Laboratory-based claims (Medicare items 11503,11509 & 11512)





# Total claims for the performance of spirometry by age and sex



Age group (years)







### Claims for spirometry by state, territory and type per 100,000 population, Australia, 2002–04



#### Age group and state/territory



Australian Institute of Health and Welfare





# Claims for the performance of spirometry by socioeconomic status

per 100,000 Medicare claims, Australia, 2002–04



Sources: HIC Health Statistics; ABS.







Chapter 7 Smoking







### Chapter 7.2 People with asthma who smoke







### Smoking status among people with current asthma by age and sex



Age group (years) and sex

#### Source: ABS National Health Survey 2001.









### The proportion of current smokers and ex-smokers by socioeconomic status

people with and without current asthma, Australia, 2001



Socioeconomic status

Asthma Monitoring

Source: ABS National Health Survey 2001. Australian Centre foi



Australian Institute of Health and Welfare

Australian Government

**Proportion of** people who are current smokers by age, sex and socioeconomic status people with and without asthma,



Source: ABS National Health Survey 2001.

Australia, 2001



Australian Government

Australian Institute of Health and Welfare



Asthma status and sex



### Chapter 7.3 Passive smoke exposure in children with asthma







### Proportion of children with 1 or more cigarette smokers in the household by age & sex

children with and without current asthma, Australia, 2001



Age group (years) and sex

#### Source: ABS National Health Survey 2001.



Australian Government

Australian Institute of Health and Welfare





### Children with and without current asthma with 1 or more cigarette smokers in the household by socioeconomic status

age 0 to 14 years, Australia, 2001



Socioeconomic status

#### Source: ABS National Health Survey 2001.







## Chapter 8 Quality of life and markers of asthma control







Self-assessed health status by age and sex people with and without current asthma aged 15 years and over, Australia, 2001



#### Source: ABS National Health Survey 2001.



Australian Government

Australian Institute of Health and Welfare



Age group (years) and asthma status



# SF-36 scores in people with and without asthma

people aged 15 years and over, South Australia, 1998



# Activity limitations in last 2 weeks due to asthma by sex

all ages, Australia, 2001



#### Source: ABS National Health Survey 2001.



Australian Government





### Activity limitations in last 2 weeks for any reason by sex

people with and without current asthma, all ages, Australia, 2001



Action taken and asthma status

Source: ABS National Health Survey 2001.



Australian Government

Australian Institute of Health and Welfare





# Chapter 9 Expenditure







### Expenditure on asthma per capita by age and sex Australia, 2000–01



Age group (years)

#### Source: AIHW health care expenditure database.







### Proportion of total health expenditure attributed to asthma by age and sex Australia, 2000–01



Source: AIHW health care expenditure database.







### Distribution of expenditure on asthma and total health expenditure among health sectors Australia, 2000–01



### Proportions of expenditure on asthma in each age group by health sector Australia, 2000–01



#### Source: AIHW health care expenditure database.









Source: AIHW health care expenditure database.



Australian Government

ACAN Australian Centre for Asthma Monitoring



# Change in per capita health expenditure (total and for asthma) by health sector

Australia, 1993–94 to 2000–01



# Change in per capita expenditure on asthma by health sector and age

#### Australia, 1993–94 to 2000–01





Australian Government

Australian Institute of Health and Welfare



