

Measures of health

COMMONWEALTH OF AUSTRALIA

Copyright Regulation

WARNING

This material has been reproduced and communicated to you
by or on behalf of the University of Sydney pursuant to Part VB
of the *Copyright Act 1968 (the Act)*.

The material in this communication may be subject to copyright under the Act.
Any further reproduction or communication of this material by you
may be the subject of copyright protection under the Act.

Do not remove this notice.

Tim Driscoll



THE UNIVERSITY OF
SYDNEY

Key points

- › GBD Results continued
 - › Life tables and life expectancy
 - › Measures of health
 - › Certification of death
 - › Sources of epidemiological data
-



GBD Results continued



Questions – deaths and disability

In 2019:

- › 1. What were the main causes of death in the world? (heat map; tree map)
- › 2. How did the pattern of the deaths differ between regions? (patterns)
- › 3. How has the burden of lung cancer changed over time? (plot; arrow diagram)
- › 4. Do these answers differ by sex? (pyramid)
- › 5. Do these answers differ by age?
- › 6. Do the answers to these questions differ between deaths and DALYs?

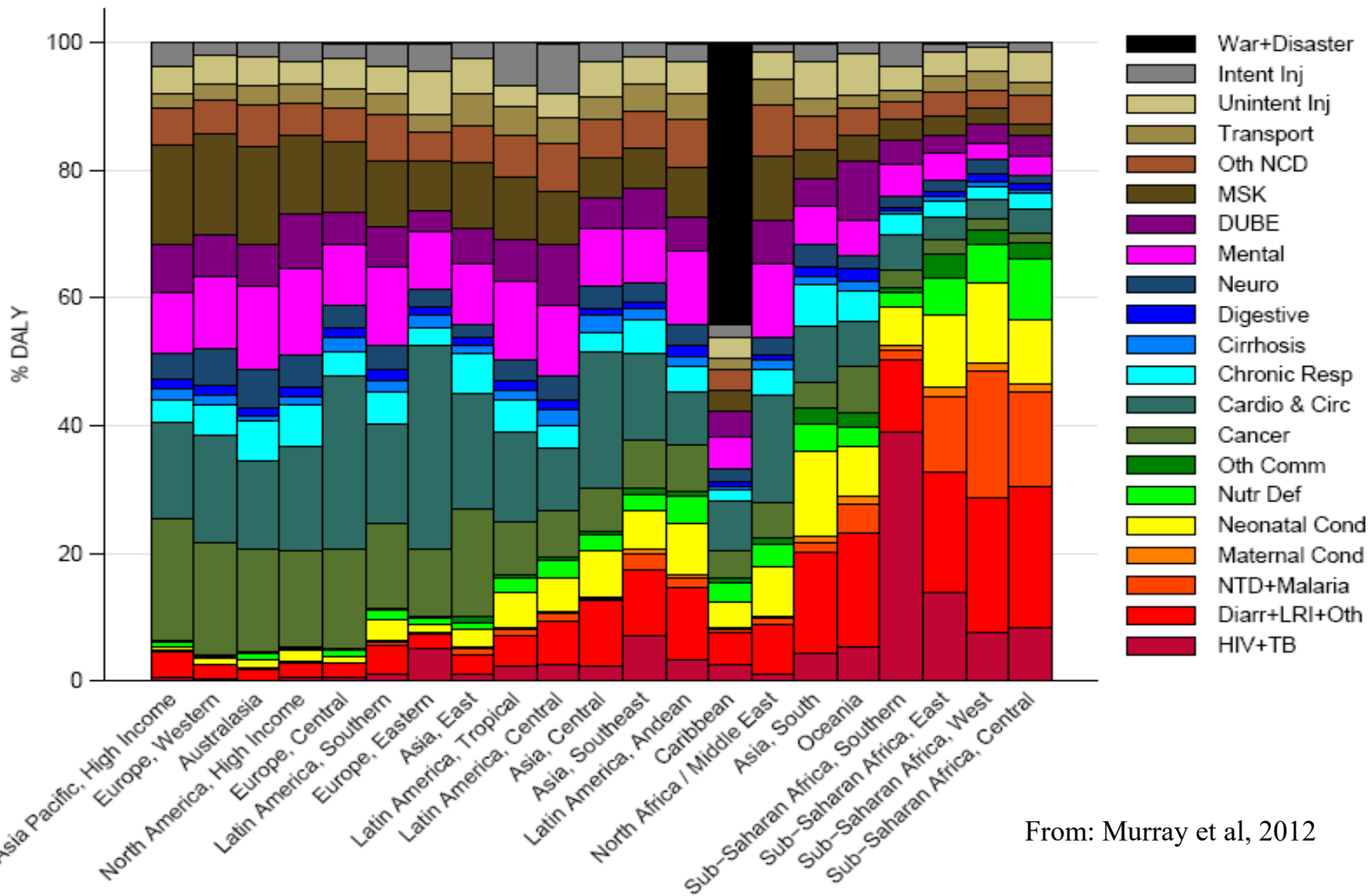
Questions – risk factors

In 2019:

- › 1. What were the main risk factors leading to burden in the world? (heat map; tree map)
- › 2. How did the pattern of the risk factors differ between regions? (patterns)
- › 3. How has the burden of asbestos-related disease changed over time? (plot; arrow diagram)
- › 4. Do these answers differ by sex? (pyramid)
- › 5. Do these answers differ by age?
- › 6. Do the answers to these questions differ between deaths and DALYs?



% DALYs by Cause and Region (2010)



From: Murray et al, 2012



THE UNIVERSITY OF
SYDNEY

Australian burden of disease study



Australian burden of disease study



Australian Government
Australian Institute of
Health and Welfare

AIHW

Our sites ▾

Contact us

Help & tools

A⁺

A⁻

Search



COVID-19

Reports & data ▾

Our services ▾

About our data ▾

News & media ▾

About us ▾

[Home](#) > [Reports & data](#) > [Australia's health](#) > [Snapshots](#)

Burden of disease



Snapshot

Release Date: 23 Jul 2020

Author: AIHW

Section: [Health status](#)



Share

Part of: [Australia's health 2020](#) >

On this page

Burden of disease analysis is the best measure of the impact of different diseases or injuries on a population. It combines the years of healthy life lost due to living with ill health (non-fatal burden) with the years of life lost due to dying prematurely (fatal burden). Fatal and non-fatal burden combined are referred to as total burden, reported using the disability-adjusted life years (DALYs) measure.

What is the overall burden of disease in Australia?

In 2015, Australians lost 4.8 million years of healthy life (DALY) due to illness or premature death. This is equivalent to 199 DALY per 1,000 population.

Half of this burden was non-fatal (50%); that is, from living with the impacts of disease and injury. Males experienced more burden, losing around 289,000 more years of healthy life in 2015 than females.

What is burden of disease?

Related snapshots



[International comparisons of health data](#) >

23 Jul 2020



[Indigenous life expectancy and deaths](#) >

23 Jul 2020



[Causes of death](#) >

23 Jul 2020

Explore snapshots

- ☒ All
- ☐ Health status
- ☐ Health system
- ☐ Determinants of health



Australian burden of disease study

Figure 3: Leading causes of total burden, by age group, 2015

Rank	Age group					
	Under 5	5-14	15-24	25-44	45-64	65+
1st	Pre-term & low birth weight complications (13.6%)	Asthma (13.1%)	Suicide & self-inflicted injuries (9.7%)	Suicide & self-inflicted injuries (7.3%)	Coronary heart disease (6.8%)	Coronary heart disease (10.9%)
2nd	Birth trauma & asphyxia (9.8%)	Anxiety disorders (10.6%)	Anxiety disorders (7.6%)	Back pain & problems (7.0%)	Back pain & problems (5.5%)	Dementia (8.3%)
3rd	Sudden infant death syndrome (4.9%)	Depressive disorders (7.1%)	Depressive disorders (7.0%)	Anxiety disorders (7.0%)	Lung cancer (4.5%)	Chronic obstructive pulmonary disease (6.5%)
4th	Cardiovascular defects (4.8%)	Conduct disorder (6.0%)	Asthma (5.8%)	Depressive disorders (6.6%)	Osteoarthritis (3.8%)	Stroke (4.8%)
5th	Asthma (3.7%)	Dental caries (4.8%)	Alcohol use disorders (5.7%)	Poisoning (4.4%)	Anxiety disorders (3.5%)	Lung cancer (4.5%)

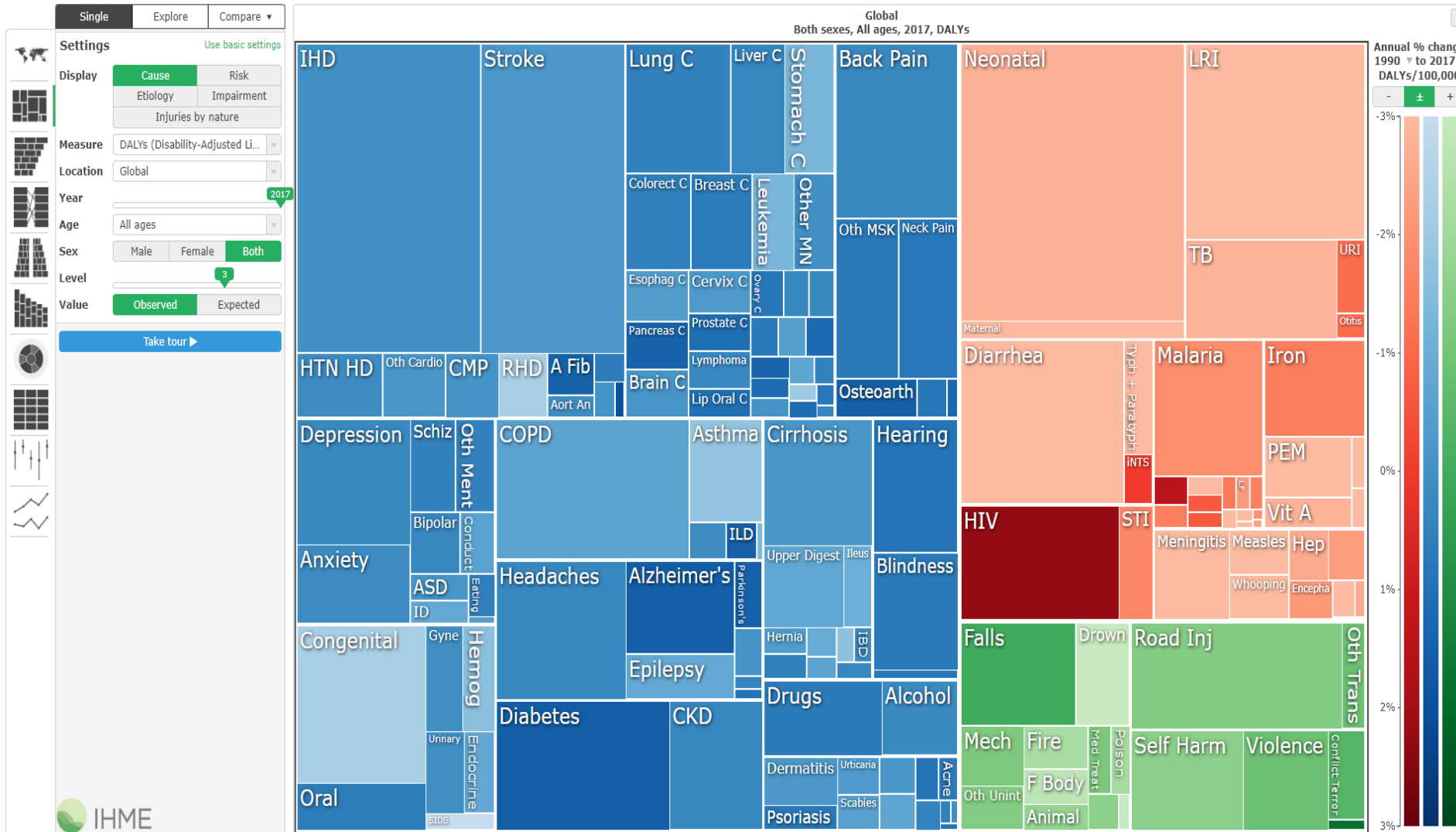
Disease group—select to highlight

Cancer	Infant/congenital	Mental/substance use	Neurological	Respiratory
Cardiovascular	Injuries	Musculoskeletal	Oral	

Source: AIHW 2019a.
<http://www.aihw.gov.au/>



GBD Compare: <http://vizhub.healthdata.org/gbd-compare/>





Global Burden of Disease



Welcome to the *Lancet* Global Burden of Disease (GBD) Resource Centre, bringing together the most comprehensive data and analysis of worldwide trends in global health, published across the *Lancet* family of journals. All GBD content published with the *Lancet* journals is Open Access, making them free to read and download online.

- > Read the latest GBD special issue
- > Search all GBD content
- > Explore cause and risk summaries
- > Sign up for GBD Alerts

About the Global Burden of Disease

The GBD study offers a powerful resource to understand the changing health challenges facing people across the world in the 21st century. Led by the Institute for Health Metrics and Evaluation (IHME), the GBD study is the most comprehensive worldwide observational epidemiological study to date. By tracking progress within and between countries GBD provides an important tool to inform clinicians, researchers, and policy makers, promote accountability, and improve lives worldwide.

> Find out more about GBD

2019

latest global data

204

countries and territories

369

diseases and injuries

87

risk factors

Latest GBD special issue

THE LANCET

Published in October 2020, *The Lancet's* special issue on GBD includes the most up-to-date global health data from 2019 with the latest analysis focused on five key themes: demographics, diseases and injuries, risk factors, population forecasting, and universal health coverage.



THE UNIVERSITY OF
SYDNEY

Life tables and life expectancy

Life tables and life expectancy

- › Can compare health experiences of different populations by comparing life expectancy
 - › For example:
 - Life expectancy at birth in Australia in 1885 was 47 years for men and 51 years for women.
 - In 2012 it was 80 and 84 years for men and women respectively
-



Life tables and life expectancy

- › Expectation of life (life expectancy) is the average number of years of life still to be lived by those who reach a given age. For example:

Life expectancy Australian males at birth is 80.4 years; females at birth is 84.6 years

Life expectancy Australian males at age 65 is 9.2 years of life (i.e. live to 84.2 years)

Life expectancy around the world



Life tables and life expectancy

- › Expectation of life (life expectancy) is the AVERAGE number of years of life still to be lived by those who reach a given age.
 - › Life expectancy at any age is NOT the most common age to which people live!
 - › Life expectancy at birth is the AVERAGE age to which people live
-

Life expectancy: Males in Australia

	1885	2012	Difference in age at death
At birth	(= die at 47)	(= die at 80)	33 years
At age 45	(= die at 68)	(= die at 82)	14 years
At age 65	(= die at 76)	(= die at 84)	8 years



A few problems with life tables

- › Assume that current mortality rates will continue – this is unlikely.
 - › Heavily affected by infant mortality rates.
 - › Therefore, do not really give a good idea of how long an individual will live.
 - › Do not take into account quality of life.
-

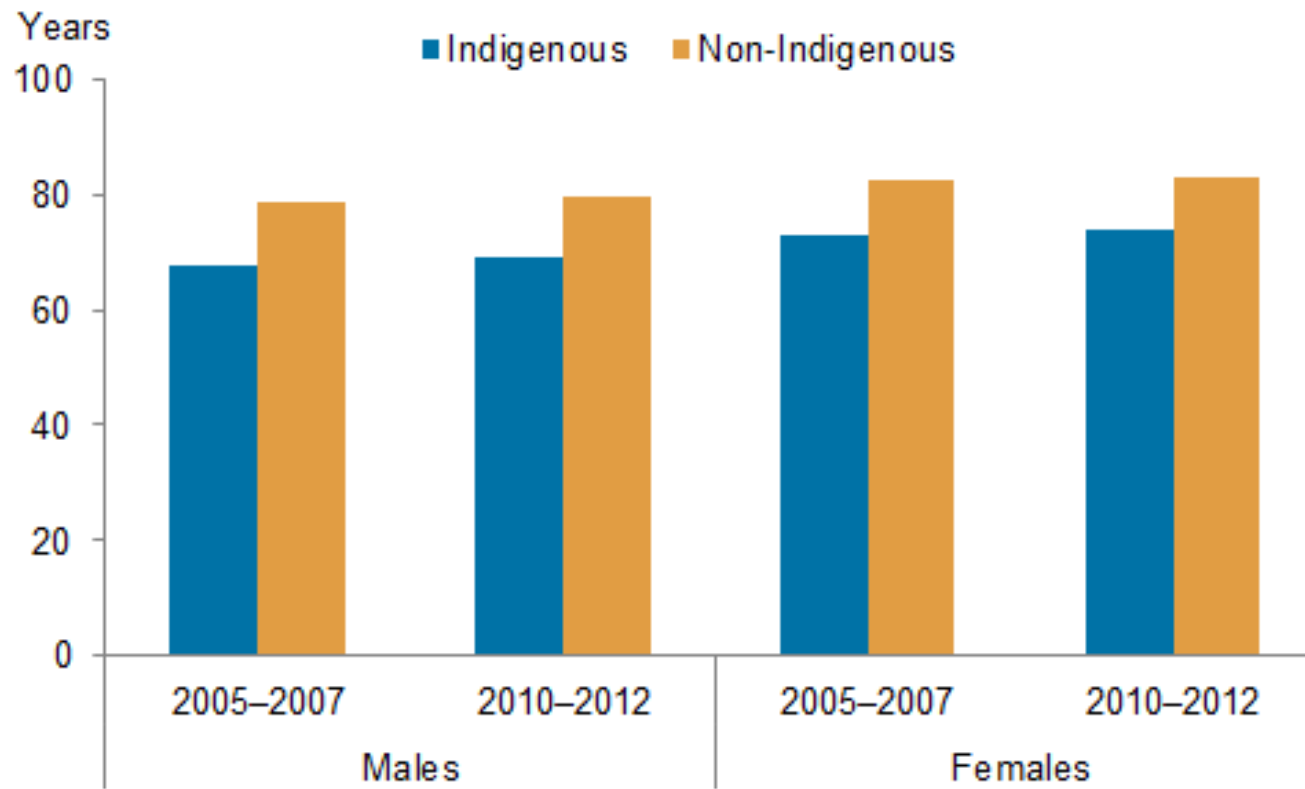


THE UNIVERSITY OF
SYDNEY

Life expectancy - indigenous vs non-indigenous

<http://www.aihw.gov.au/indigenous-observatory/reports/health-and-welfare-2015/life-expectancy-and-mortality/>

Life expectancy at birth, by sex and Indigenous status, 2005–2007 and 2010–2012





Measures of health

Death certificates



International Medical Certificate of Causes of Death

Part I

Cause of death

Approximate interval between onset and death

*Disease or condition directly
leading to death**

(a)
due to (or as a consequence of)

.....
.....

Antecedent causes

Morbid conditions, if any,
giving rise to the above
cause, stating the underlying
condition last

(b)
due to (or as a consequence of)

.....
.....

(c)
due to (or as a consequence of)

.....
.....

(d)
due to (or as a consequence of)

.....
.....

Part II

*Other significant conditions
contributing to the death,
but not related to the disease
or condition causing it.*

.....
.....

.....
.....

* This means the disease,
injury or complication which
caused the death NOT ONLY
for example, the mode of
dying such as 'heart failure,
asthenia' etc.

.....
.....

.....
.....



Cause of death

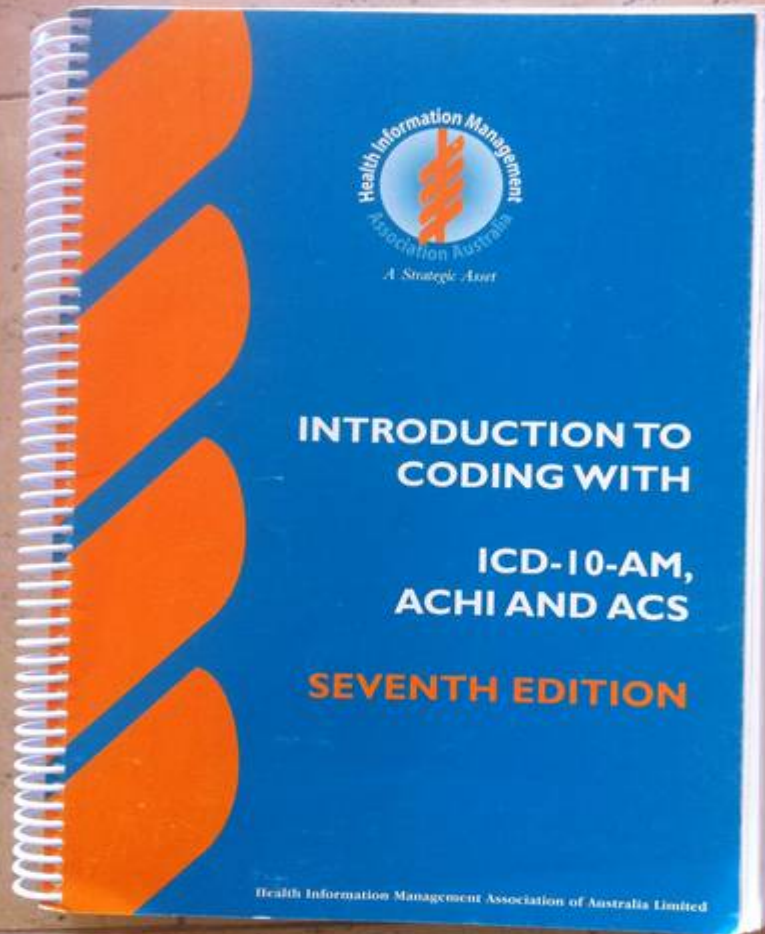
- › What is the underlying cause of death of an 86 year-old woman with congestive heart failure, ischaemic heart disease, type II diabetes and chronic obstructive airways disease who developed a severe kidney infection, which caused septicaemia, and who was found in her bed not breathing and with no heartbeat?
-



THE UNIVERSITY OF
SYDNEY

ICD-10..... ICD-11!

<https://icd.who.int/>



ICD-11

International Classification of Diseases 11th Revision

The global standard for diagnostic health information

-11

Learn More

[ICD Home Page](#)
[ICD-11 Reference Guide](#)
[About ICD-11](#)
[ICD Video](#)

[Older versions](#)
[ICD-10 Browser](#)

Be Involved

Our [maintenance platform](#) provides various ways to contribute

[Comments](#)
[Proposals](#)
[Translations](#)

Health
Information

Sources of population health data

Sources of population health data

- › AIHW
 - › ABS
 - › Cancer registries
 - › Hospital discharges
 - › Emergency department presentations
 - › General practitioner presentations
 - › Notifiable disease registries
 - › GBD
 - › WHO
 - › Surveillance systems
 - › Death certificates
 - › Death registries
 - › Coroners' files
 - › Sentinel event systems
 - › Clinical laboratory results
 - › National Census
 - › National Health Survey
 - › Labour Force Survey
 - › Industry surveys
 - › Local surveys
 - › Exposure surveys
-



THE UNIVERSITY OF
SYDNEY

COVID-19 status in Australia – 14 March 2021



Australian Government
Department of Health

BE COVIDSAFE

CURRENT STATUS OF CONFIRMED CASES

29,117

Total cases

909

Total deaths

117

Active cases

0

CURRENT CASES
INTENSIVE CARE UNITS (ICU)

ACT	NSW	NT	QLD	SA	TAS	VIC	WA
0	0	0	0	0	0	0	0

41

CURRENT CASES
ADMITTED TO HOSPITALS

ACT	NSW	NT	QLD	SA	TAS	VIC	WA
0	5	0	36	0	0	0	0

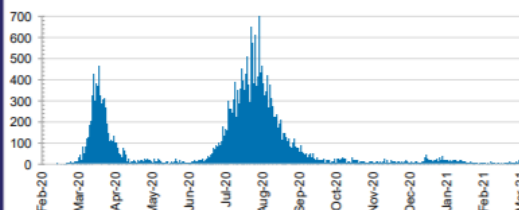
14,901,292

0.2% POSITIVE

TOTAL TESTS
CONDUCTED

ACT	NSW	NT	QLD
179,155	5,173,413	135,564	2,038,338
POSITIVE	POSITIVE	POSITIVE	POSITIVE
0.1%	0.1%	0.1%	0.1%
SA	TAS	VIC	WA
1,128,527	181,420	5,166,899	897,976
POSITIVE	POSITIVE	POSITIVE	POSITIVE
0.1%	0.1%	0.4%	0.1%

DAILY NUMBER OF REPORTED CASES

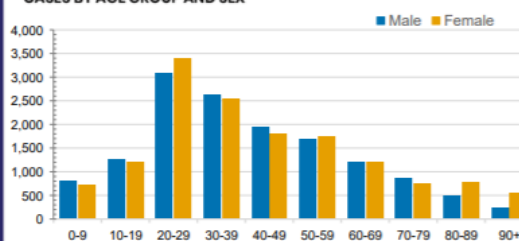


CASES IN AGED CARE SERVICES

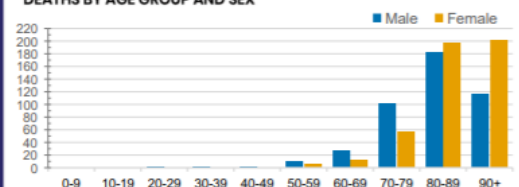
Confirmed Cases	Australia	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Residential Care Recipients	2051 [1366] (685)	0	61 [33] (28)	0	1 (1)	0	1 (1)	1988 [1333] (655)	0
In Home Care Recipients	81 [73] (8)	0	13 [13]	0	8 [8]	1 [1]	5 [3] (2)	53 [48] (5)	1 (1)

Cases in care recipients [recovered] (deaths)

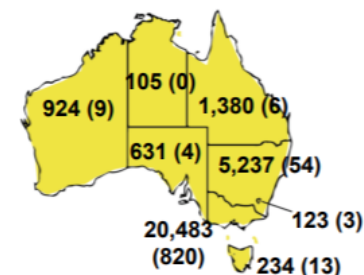
CASES BY AGE GROUP AND SEX



DEATHS BY AGE GROUP AND SEX

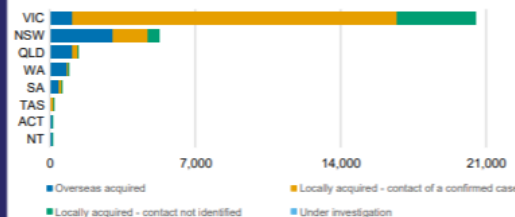


CASES (DEATHS) BY STATE AND TERRITORIES



CASES BY SOURCE OF INFECTION

Australia (% of all confirmed cases)



PUBLIC HEALTH RESPONSE MEASURE

Proportion of total cases under investigation

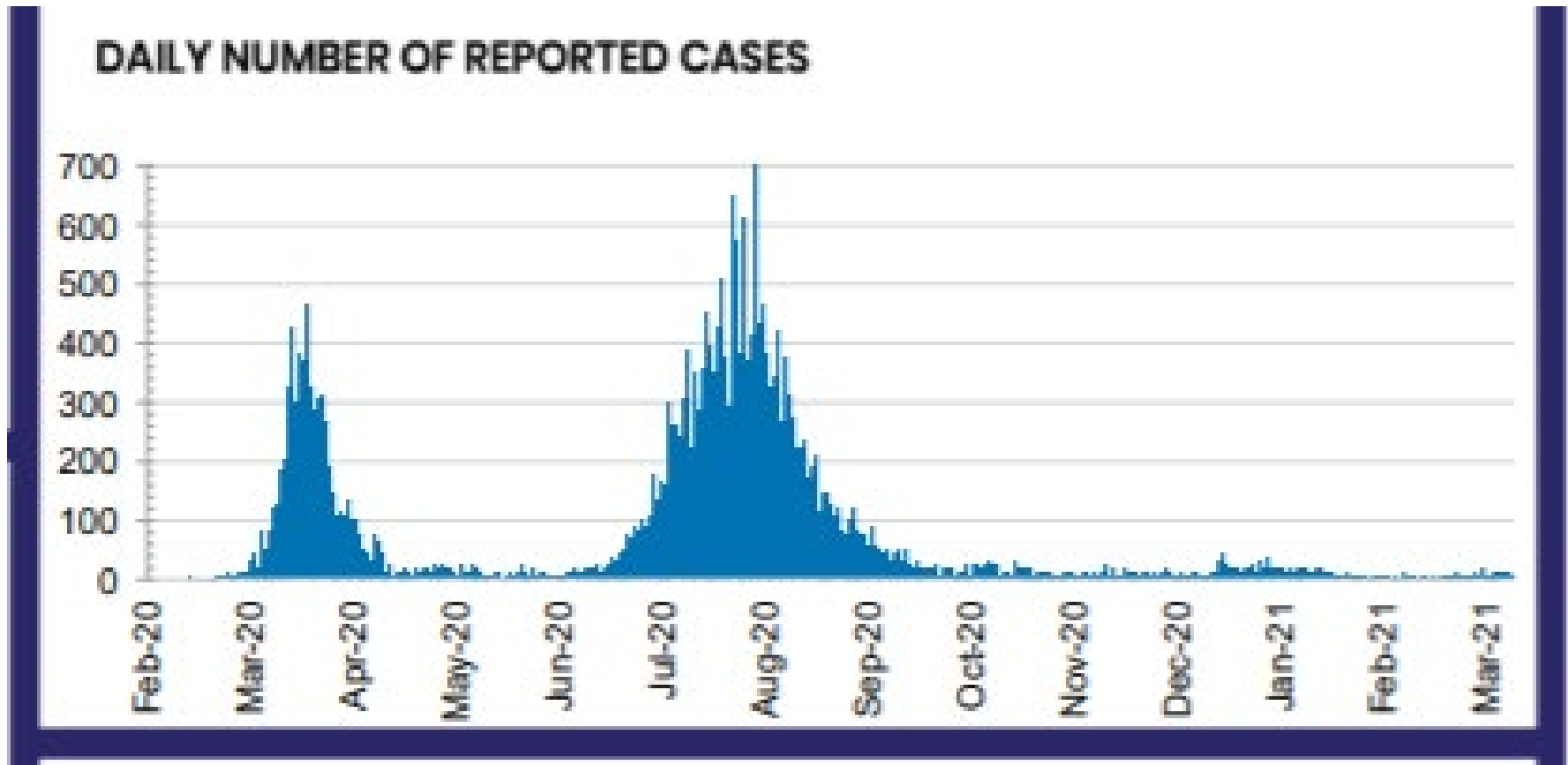


Last updated 14 March 2021

This infographic is updated every afternoon based on the data we receive by 3.00pm from states and territories

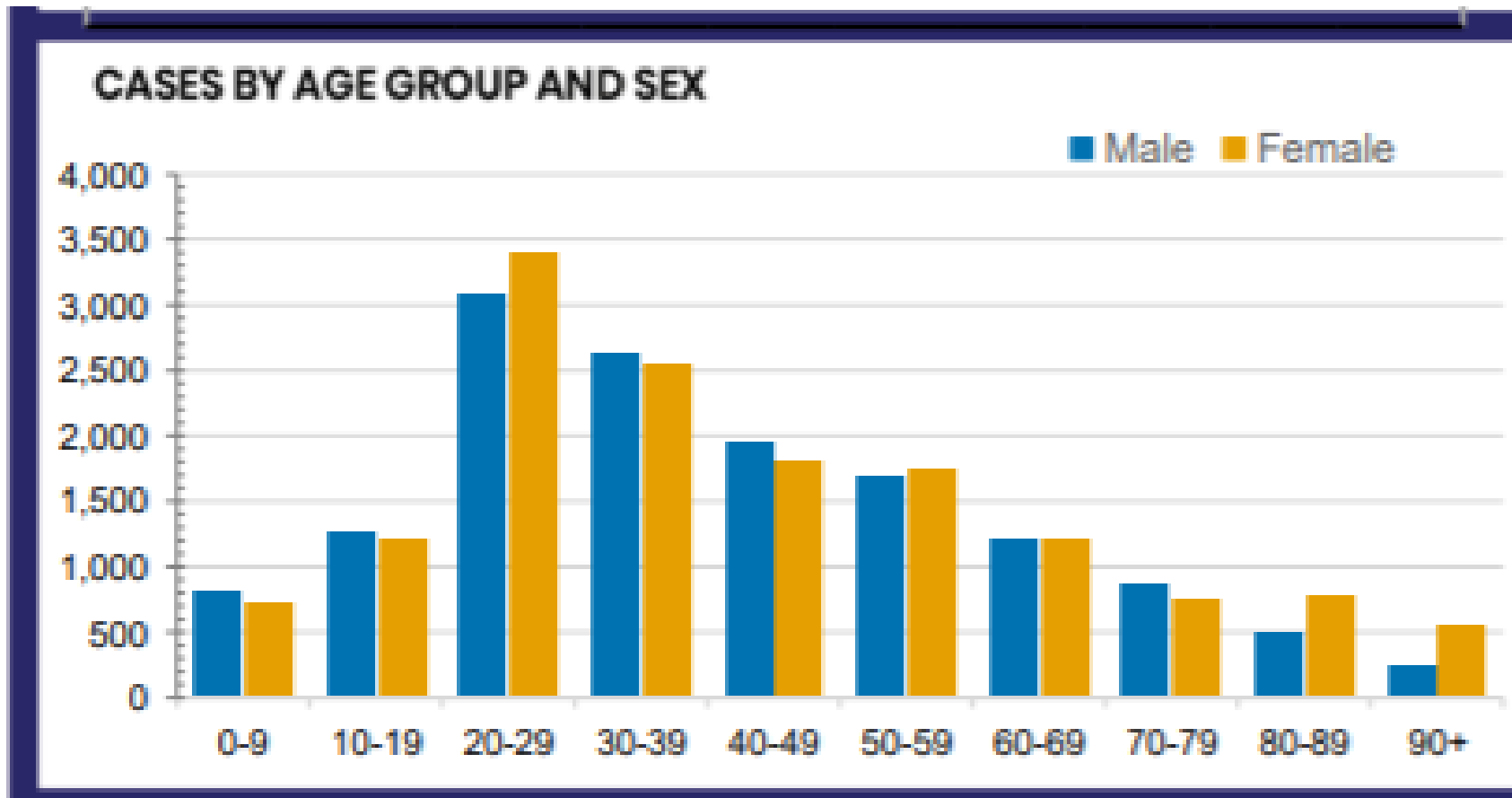


COVID-19 status in Australia – 14 March 2021





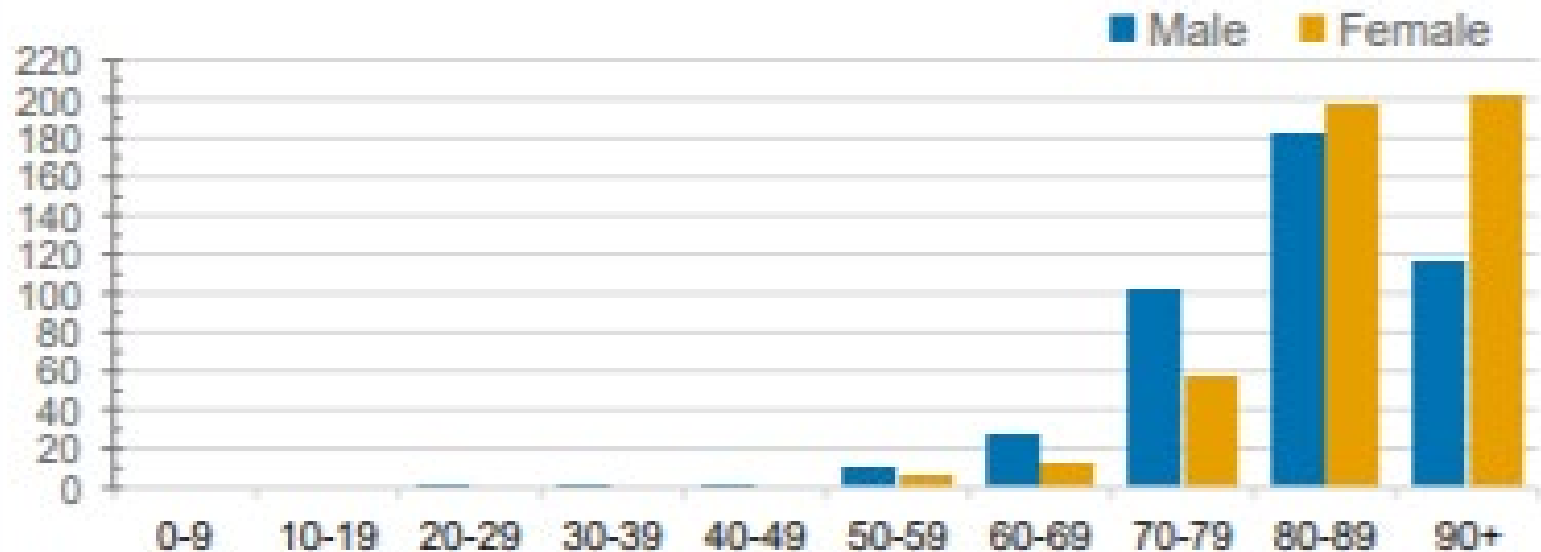
COVID-19 status in Australia – 11 February 2021





COVID-19 status in Australia – 11 February 2021

DEATHS BY AGE GROUP AND SEX





THE UNIVERSITY OF
SYDNEY

Australian Institute of Health and Welfare



Australian Government
Australian Institute of
Health and Welfare

AIHW

Our sites ▾ Contact us Help & tools A⁺ A⁻

Search



COVID-19

Reports & data ▾

Our services ▾

About our data ▾

News & media ▾

About us ▾

Stronger evidence, better decisions, improved health and welfare



Venomous bites and stings 2017-18 >

Bee and wasp stings were responsible for 1,256 hospitalisations in 2017-18



Australia's health 2020

Australia's health 2020 is the AIHW's 17th biennial report on the health of Australians. >



Australia's welfare 2019

Australia's welfare 2019 is the 14th biennial welfare report of the Australian Institute of Health and Welfare. >

Aboriginal and Torres Strait Islander
Health Performance Framework

Find information about health outcomes, health system performance and the broader determinants of health for Indigenous Australians

EXPLORE THE WEBSITE >

News & media

Latest

<http://www.aihw.gov.au/>



THE UNIVERSITY OF
SYDNEY

Australian Bureau of Statistics

<http://www.abs.gov.au/>



Statistics

Census

Complete your survey

About



Welcome to the Australian Bureau of Statistics

Population

25,687,041

30 June 2020

Consumer price index

0.9%

Annual change Dec 2020
quarter

Gross domestic product

3.1%

Quarterly change Dec 2020

Average weekly earnings

\$1711.60

November 2020

Unemployment rate

6.4%

January 2021

Latest releases

Friday 12 March 2021

Using administrative data to fill potential
data gaps in the Census

Friday 12 March 2021

Using administrative data to help support
communities to complete the Census

Thursday 11 March 2021

Prisoners up 2% to 41,668 since September
quarter 2020

Corrective Services, Australia

Thursday 11 March 2021

Slight rise in industrial disputes in
December quarter

Industrial Disputes, Australia

Thursday 11 March 2021 | Update

Patient Experiences in Australia: Summary
of Findings

Wednesday 10 March 2021 | Update

Building Approvals data for small
geographic areas

Building Approvals, Australia

Future releases





Ministers ▾

For Consumers ▾

For Health Professionals ▾

About us ▾

Media Centre ▾

Programs & Campaigns ▾

Resources ▾

Ageing & Aged Care

Home / For Consumers / Conditions and Diseases / Communicable Diseases Information / Communicable Diseases Surveillance / Surveillance Systems /

National Notifiable Diseases Surveillance (NNDSS) /



Listen



CONDITIONS AND DISEASES

Chronic disease

Communicable Diseases Information

Ebola virus

Arbovirus and malaria surveillance

Influenza

Bovine spongiform encephalopathy (BSE)

Measles

Communicable Diseases Surveillance

Communicable Diseases Network Australia (CDNA)

Communicable Diseases Intelligence (CDI)

Surveillance Systems

National Notifiable Diseases Surveillance (NNDSS)

Fortnightly summary notes

Creutzfeldt-Jakob disease (CJD)

Communicable disease factsheets

Blood borne viruses and sexually

Introduction to the National Notifiable Diseases Surveillance System

This page contains an overview of the workings of the Australian National Notifiable Diseases Surveillance System (NNDSS).

Page last updated: 09 June 2015

The National Notifiable Diseases Surveillance System (NNDSS) was established in 1990 under the auspices of the [Communicable Diseases Network Australia](#). The System co-ordinates the national surveillance of more than 50 communicable diseases or disease groups. Under this scheme, notifications are made to the States or Territory health authority under the provisions of the public health legislation in their jurisdiction. Computerised, de-identified unit records of notifications are supplied to the Australian Government Department of Health on a daily basis, for collation, analysis and publication on the [Internet](#), (updated daily), and in the quarterly journal [Communicable Diseases Intelligence](#).

Notification data provided include a unique record reference number, state or territory identifier, disease code, date of onset, date of notification to the relevant health authority, sex, age, Indigenous status and postcode of residence.

The quality and completeness of data compiled in the National Notifiable Diseases Surveillance System are influenced by various factors. Notifications may be required from treating clinicians, diagnostic laboratories or hospitals. In addition, the mechanism of notification varies between States and Territories and in some cases different diseases are notifiable by different mechanisms. The proportion of cases seen by health care providers which are the subject of notification to health authorities is not known with certainty for any disease, and may vary among diseases, between jurisdictions and over time.

Related Links

- [National Notifiable Diseases Surveillance System \(NNDSS\) annual reports](#)

- [National Notifiable Diseases Surveillance System data](#)

- [Invasive Pneumococcal Disease Surveillance Australia](#)

http://www9.health.gov.au/cda/source/pub_menin.cfm



Health topics

Data and statistics

Media centre

Publications

Countries

Programmes and projects

About WHO



Search

Advanced search

Global Health Observatory (GHO)

Global Health Observatory

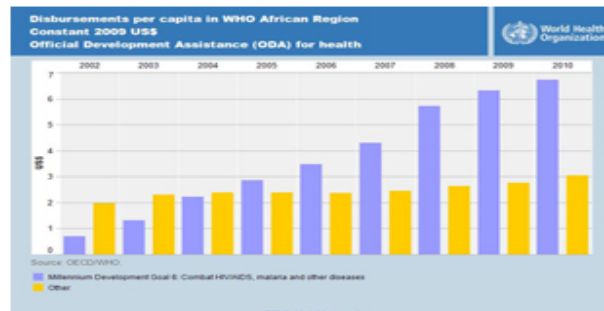
Data repository

Reports

Country statistics

Map gallery

Standards



Governance and aid effectiveness: Since 2002, Official Development Assistance (ODA) for health per capita/year in the WHO African Region has increased from US\$ 2.7 to US\$ 9.8 in 2010. Most of the increase has been however targeting MDG6, with all other health development priorities together receiving in 2010 less than 50% of the resources disbursed for MDG6. Effective policy dialogue at national level between governments and national and international development partners is critical to increase aid flows, their effectiveness and their alignment with country national priorities and processes.

↓ View full size graph
jpg, 52kb

[More data and analysis on governance and aid effectiveness](#)

Health governance

40 countries

will review their national health plan
between 2012-2014

↓ Number of countries expected to review
their national health plan between 2012
and 2014
pdf, 223kb

Increased disbursements to health

768%

is the increase of Official Development
Assistance (ODA) disbursements for
health from 2000 to 2010

↓ Total disbursements to countries,
2000–2010
pdf, 181kb

Purpose of disbursements to health

58%

of all ODA commitments for health were
to combat HIV/AIDS, malaria and other
diseases in 2009-2010

↓ Distribution of 2009-2010
disbursements, by purpose of ODA
pdf, 200kb

The Global Health Observatory theme pages provide data and analyses on global health priorities. Each theme page provides information on global situation and trends highlights, using core indicators, database views, major publications and links to relevant web pages on the theme.

GHO THEMES

Millennium Development Goals (MDGs)

Contact us

Please [send us](#) your comment or
question by e-mail.



THE UNIVERSITY OF
SYDNEY

Key points



Key points

- › GBD Results continued
 - › Life tables and life expectancy
 - › Measures of health
 - › Certification of death
 - › Sources of epidemiological data
-