Measures of health

COMMONWEALTH OF AUSTRALIA
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Tim Driscoll

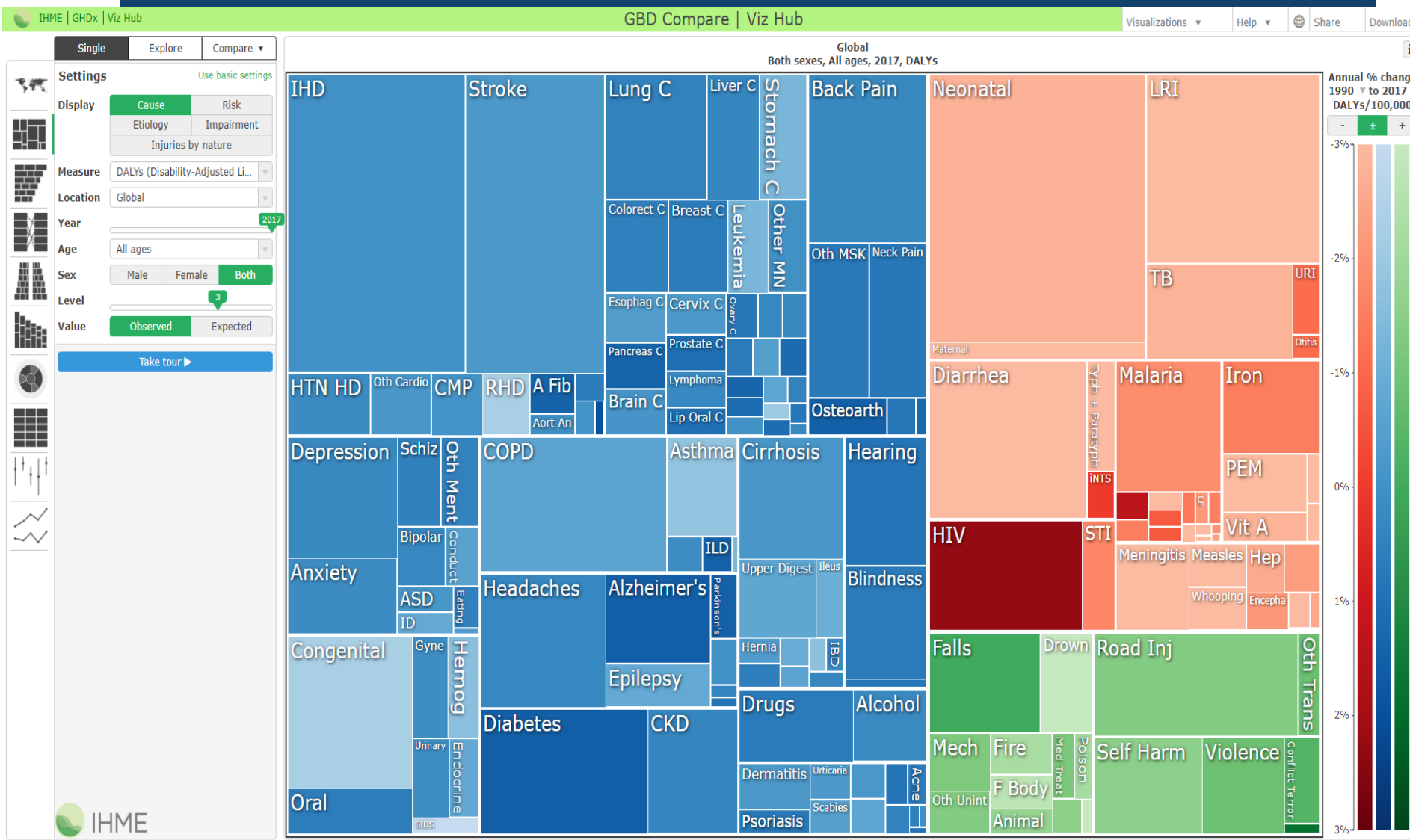
THE UNIVERSITY OF SYDNEY

Key points

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

GBD Results continued

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



Source: GBD Compare - Available from http://vizhub.healthdata.org/gbd-compare. (Accessed 25/3/2019)

Questions – deaths and disability

In 2019:

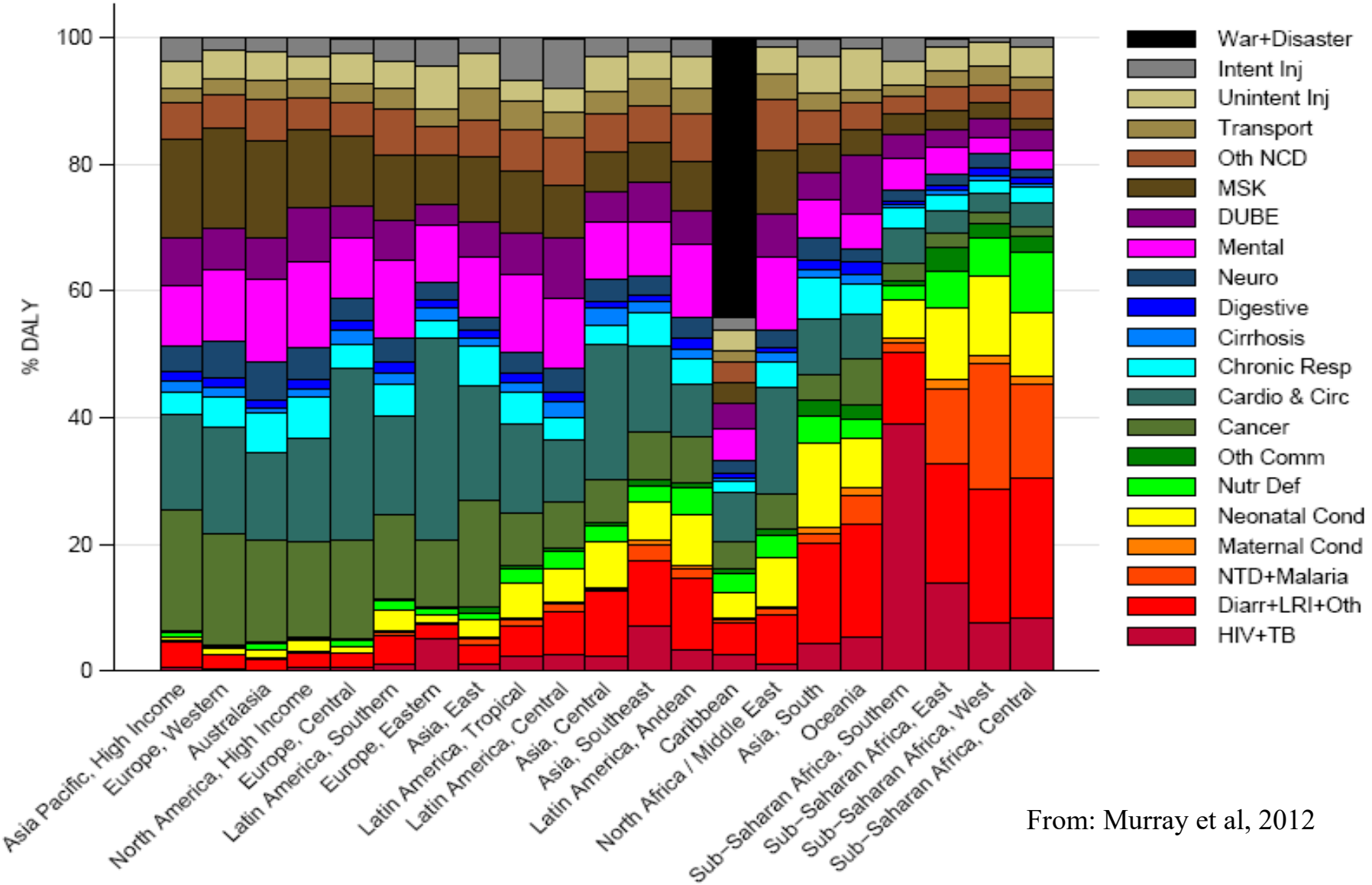
- 1. What were the main causes of death in the world? (heat map; tree map)
- 2. How did the pattern of the deaths differ between regions? (patterns)
- 3. How has the burden of lung cancer changed over time? (plot; arrow diagram)
- 4. Do these answers differ by sex? (pyramid)
- 5. Do these answers differ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

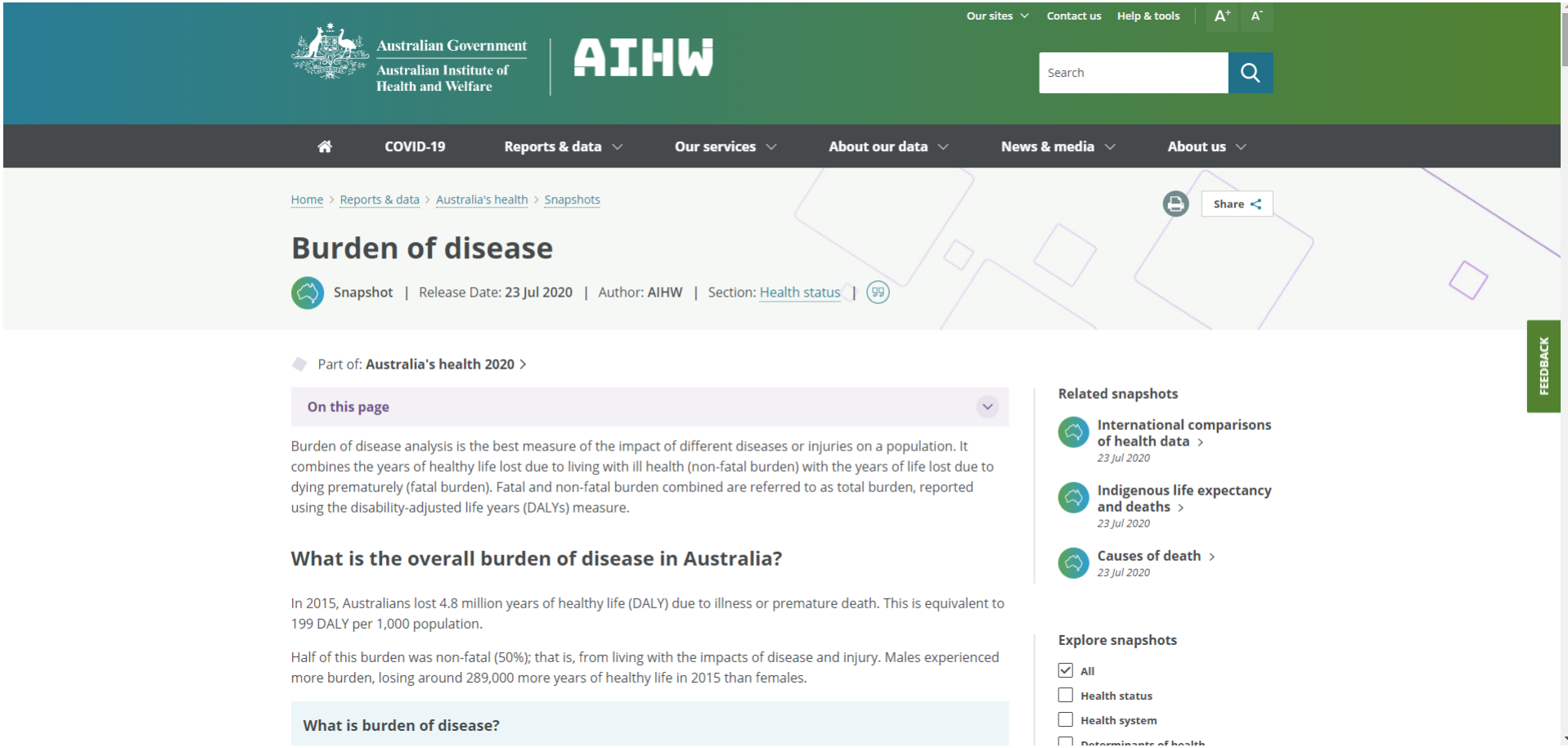
% DALYs by Cause and Region (2010)



From: Murray et al, 2012

Australian burden of disease study

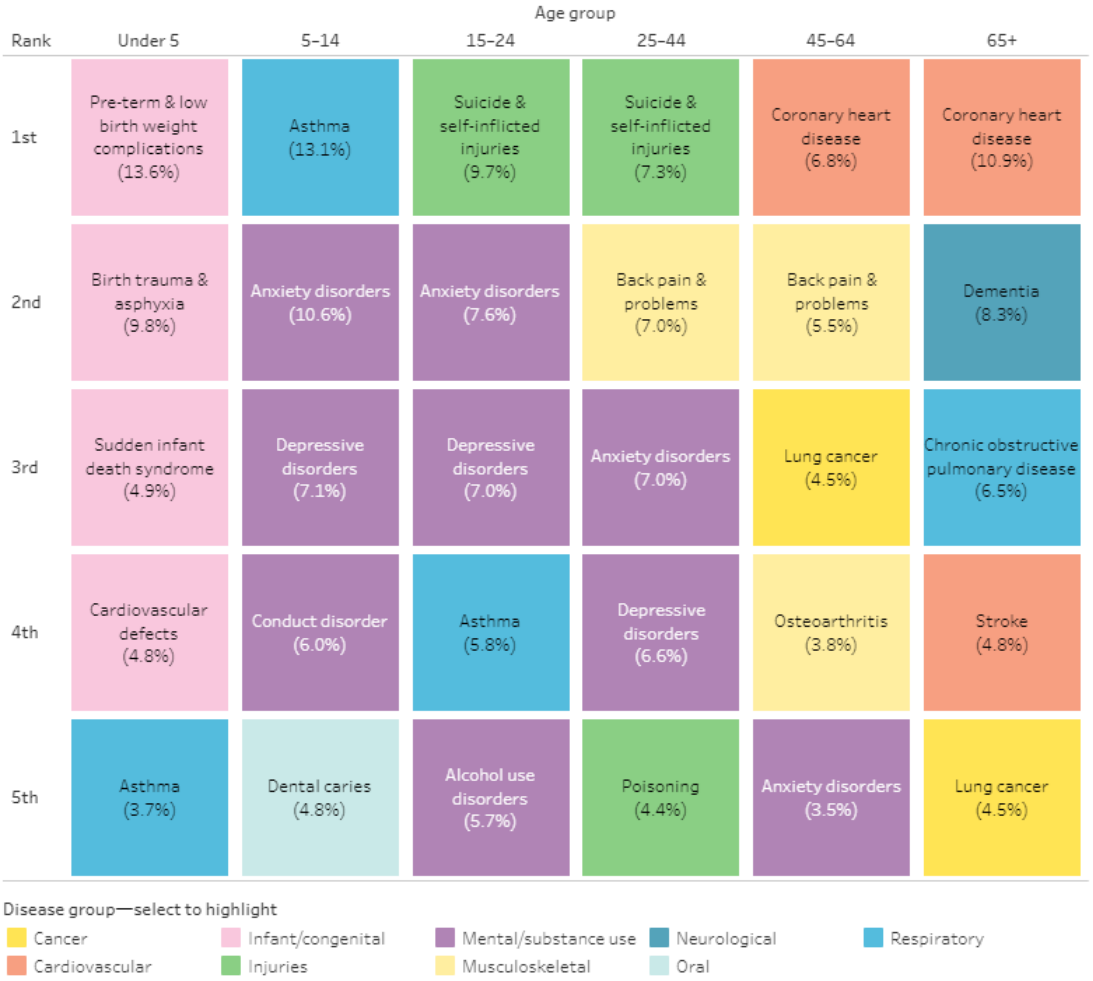
Australian burden of disease study



Source: https://www.aihw.gov.au/reports/australias-health/burden-of-disease - accessed 5 March 2021

Australian burden of disease study

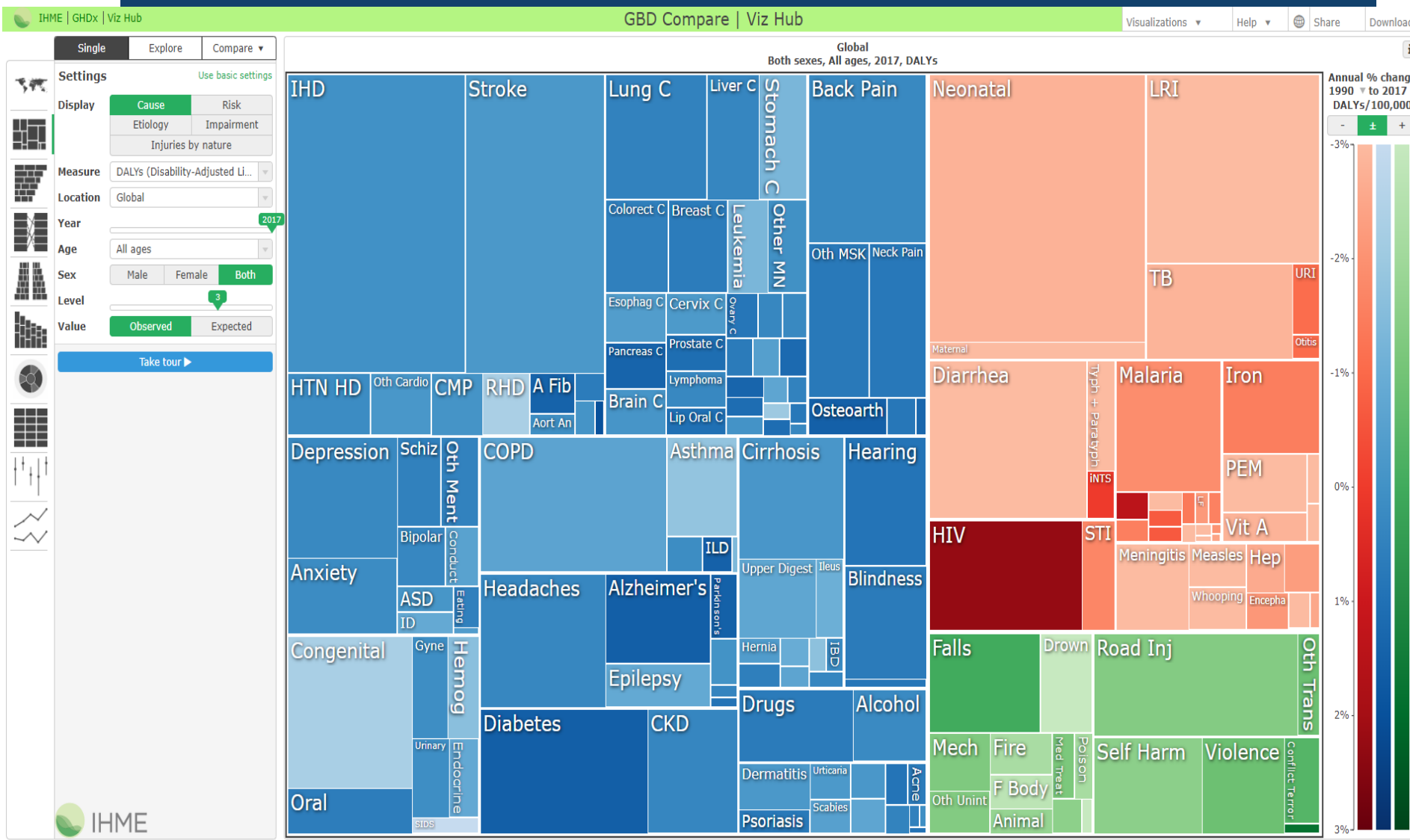
Figure 3: Leading causes of total burden, by age group, 2015



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

Source: https://www.aihw.gov.au/reports/australias-health/burden-of-disease - accessed 5 March 2021

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



Source: GBD Compare - Available from http://vizhub.healthdata.org/gbd-compare. (Accessed 25/3/2019)

thelancet.com/gbd

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.

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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.

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

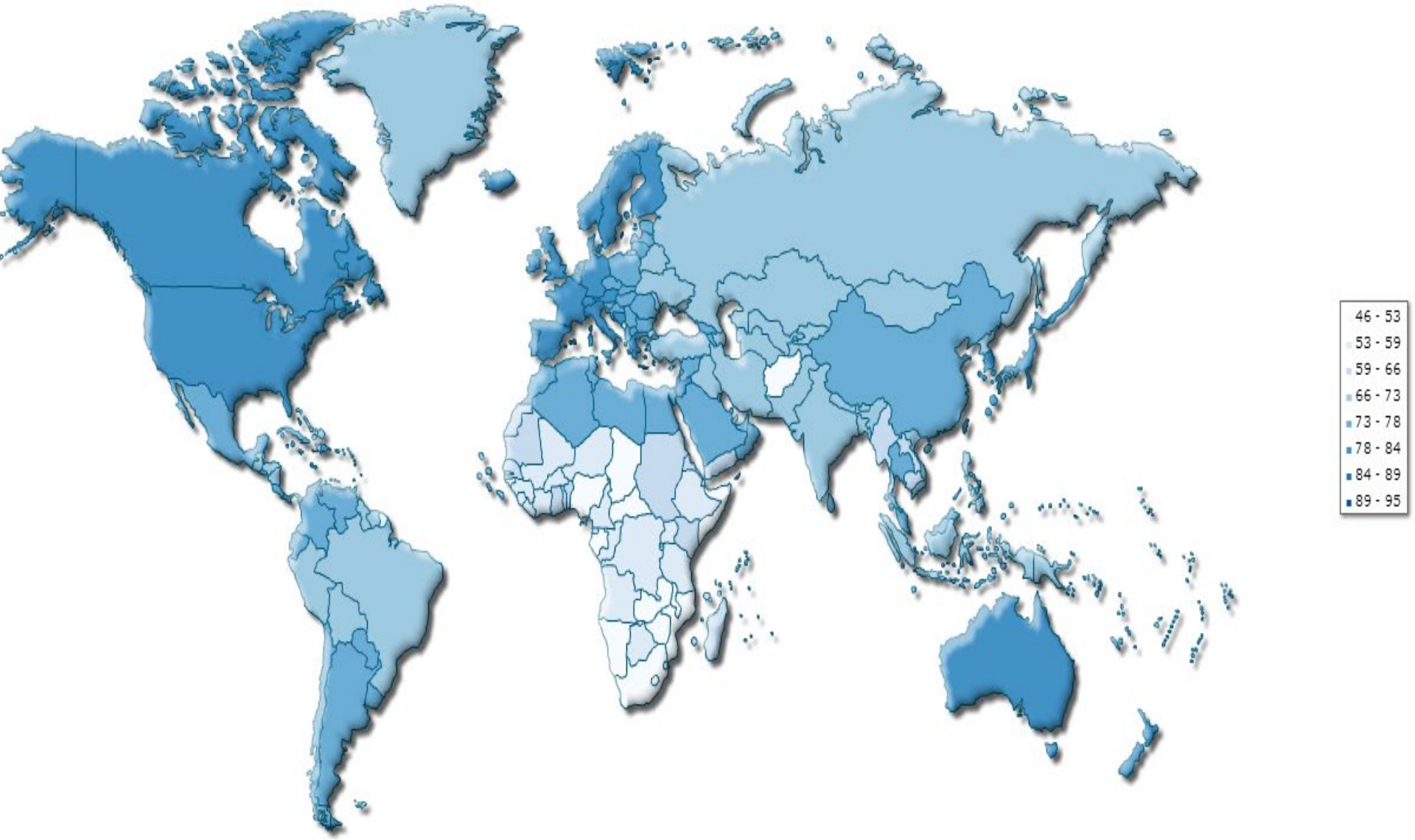
- Expectation of life (life expectancy) is the average number of years of life still to be lived by those who reach a given age. For example:

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)

http://www.aihw.gov.au/deaths/life-expectancy/

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

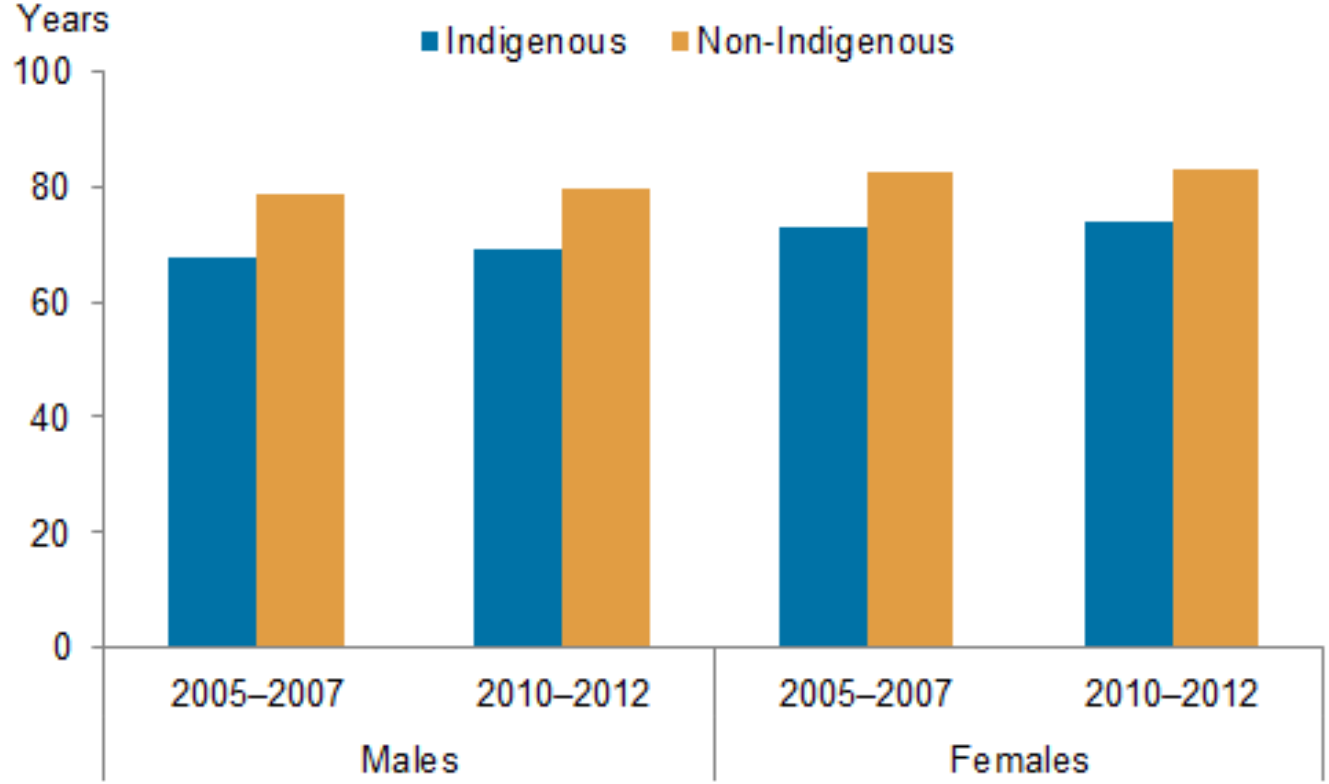
	1885	2012	Difference in age at death
At birth	(= die at 47)	(= die at 80)	33 years
At age 45	(= die at 68)	(= die at 82)	14 years
At age 65	(= die at 76)	(= die at 84)	8 years

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.

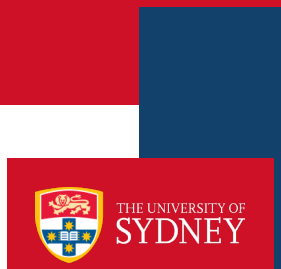
Life expectancy - indigenous vs non-indigenous

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



Measures of health

Death certificates

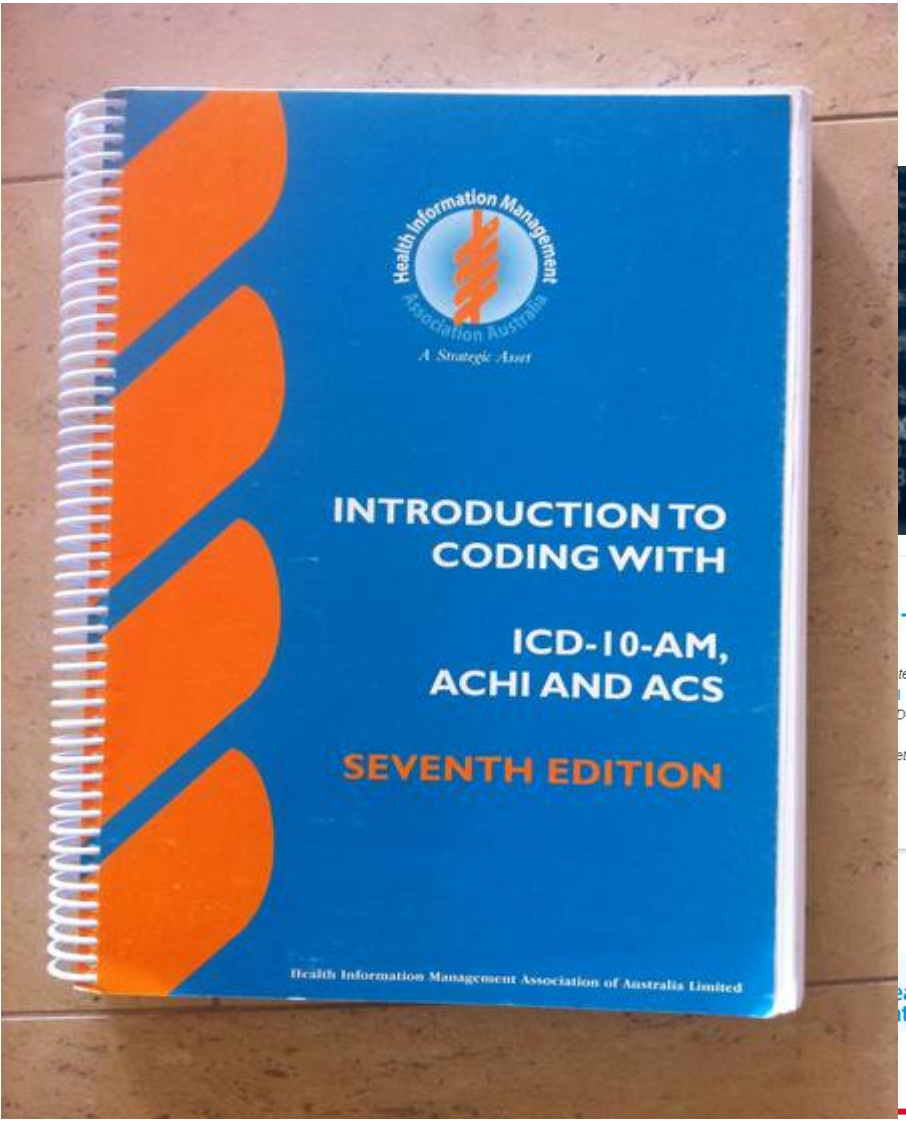


International Medical Certificate of Causes of Death		
Part I	**Cause of death**	**Approximate interval between onset and death**
*Disease or condition dierctly leading to death**	(a)	.....
	due to (or as a consequence of)	.....
Antecedent causes Morbid conditions, if any, giving rise to the above cause, 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.	.....	.....
	.....	.....

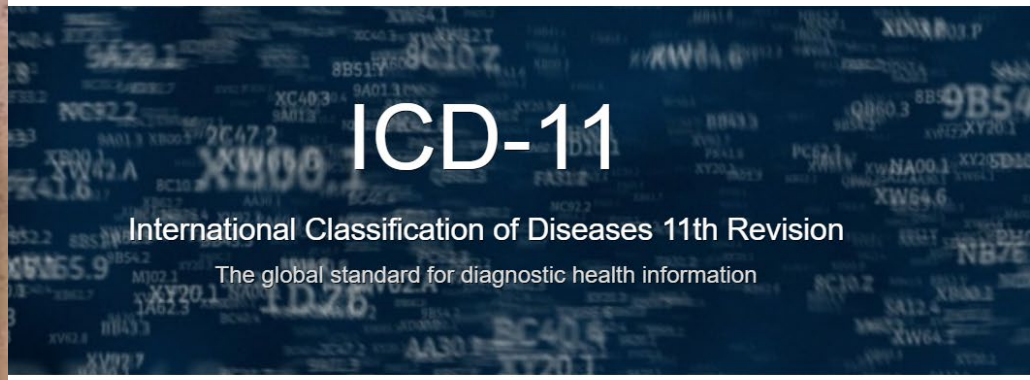
Cause of death

- 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?

ICD-10…… ICD-11!



https://icd.who.int/



-11

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ICD Home Page
ICD-11 Reference Guide
About ICD-11
ICD Video

Older versions
ICD-10 Browser

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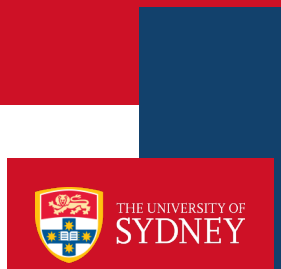
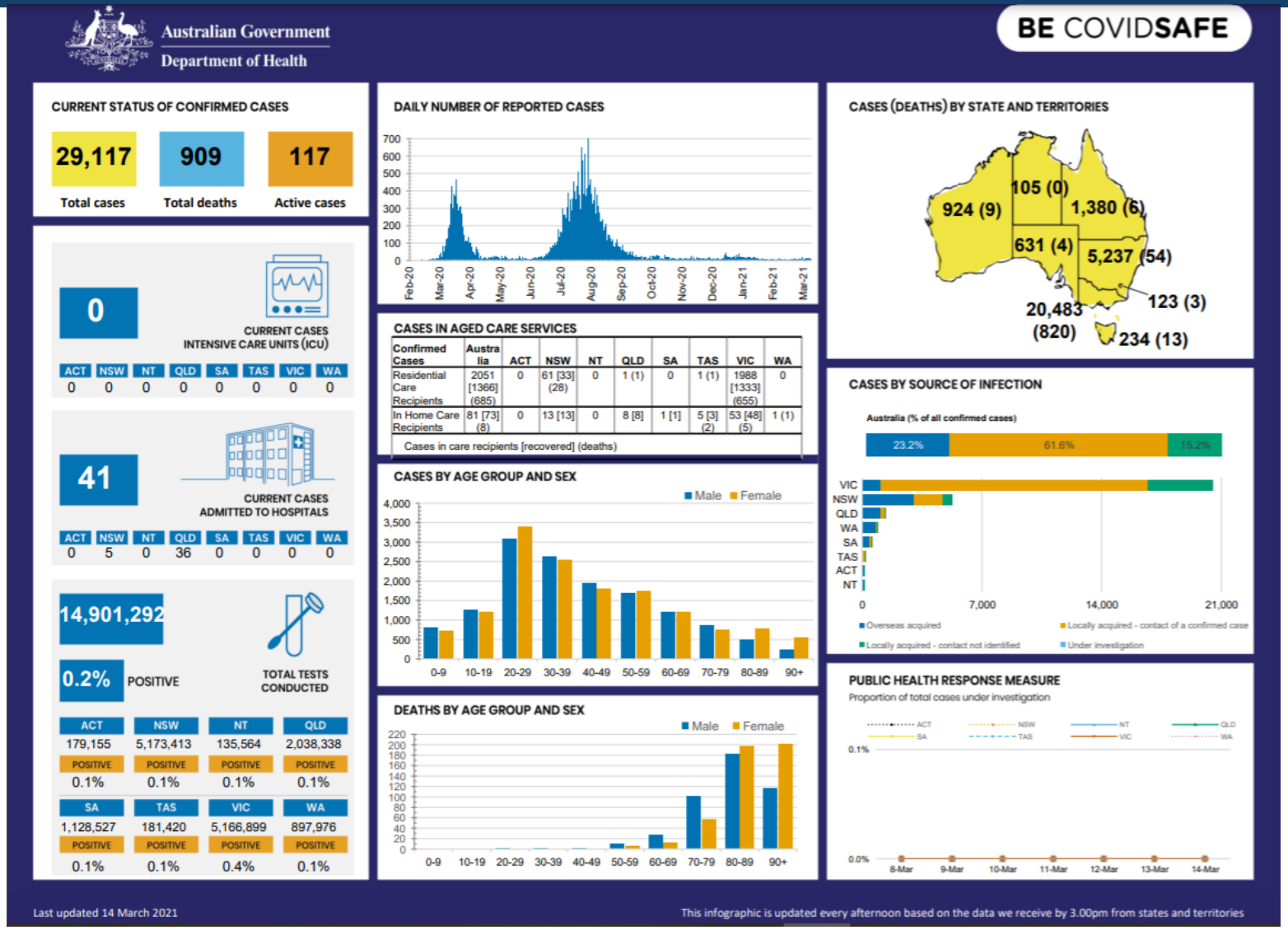
Sources of population health data



Sources of population health data

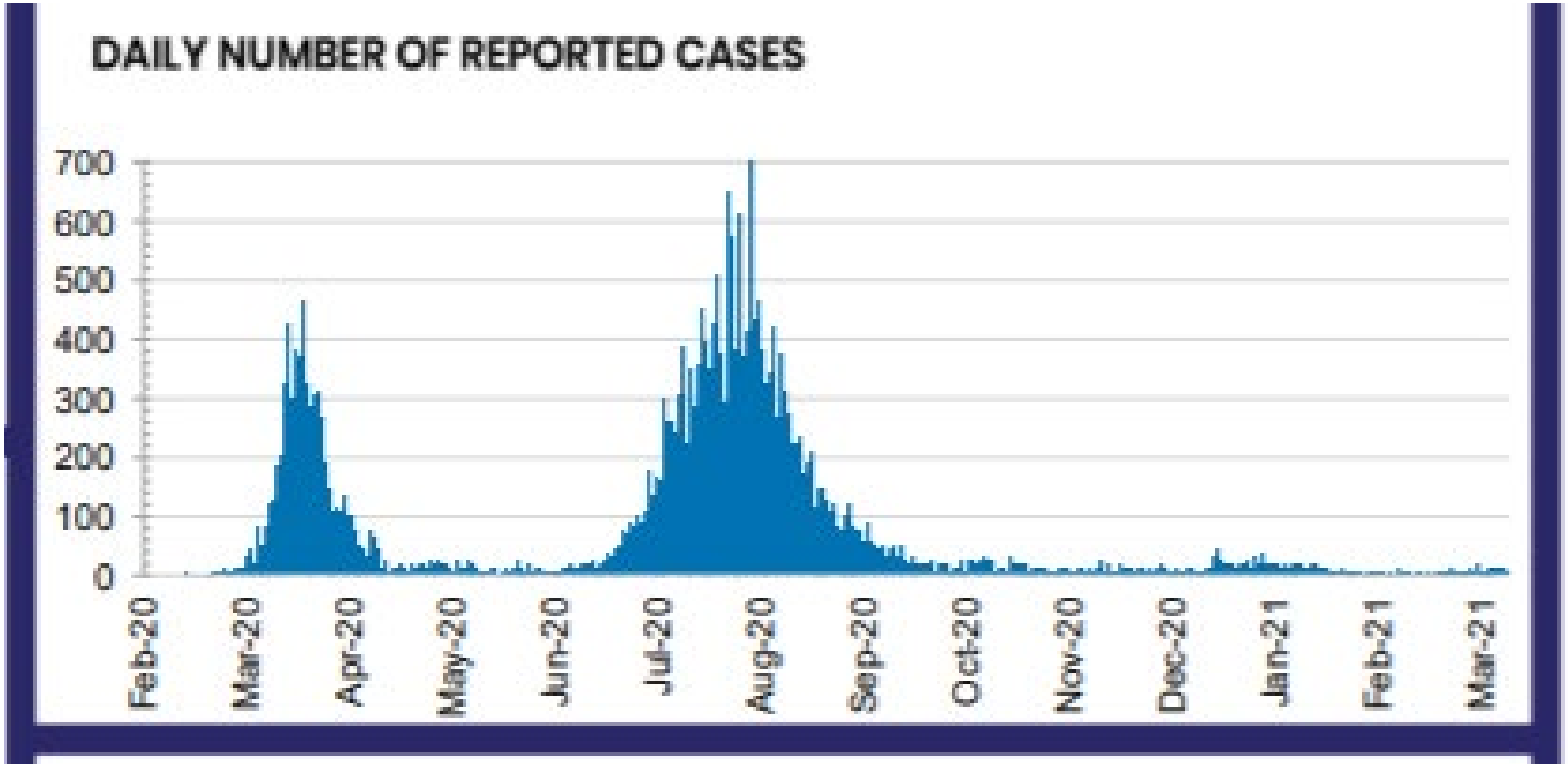
- AIHW
- ABS
- Cancer registries
- Hospital discharges
- Emergency department presentations
- General practitioner presentations
- Notifiable disease registries
- GBD
- WHO
- Surveillance systems
- Death certificates
- Death registries
- Coroners' files
- Sentinel event systems
- Clinical laboratory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

COVID-19 status in Australia – 14 March 2021



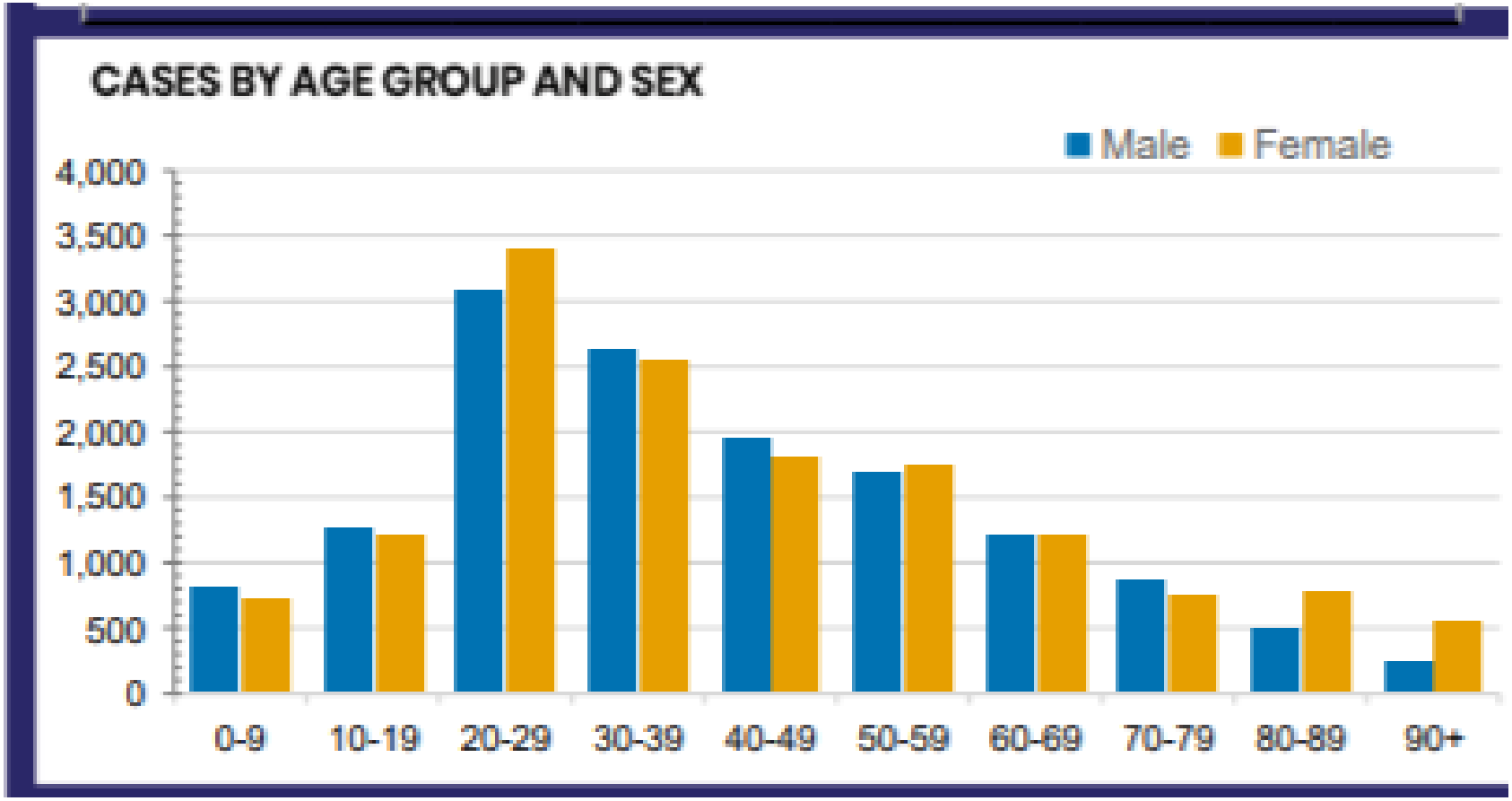
Source: Department of Health: https://www.health.gov.au/sites/default/files/documents/2021/03/coronavirus-covid-19-at-a-glance-14-march-2021_0.pdf

COVID-19 status in Australia – 14 March 2021



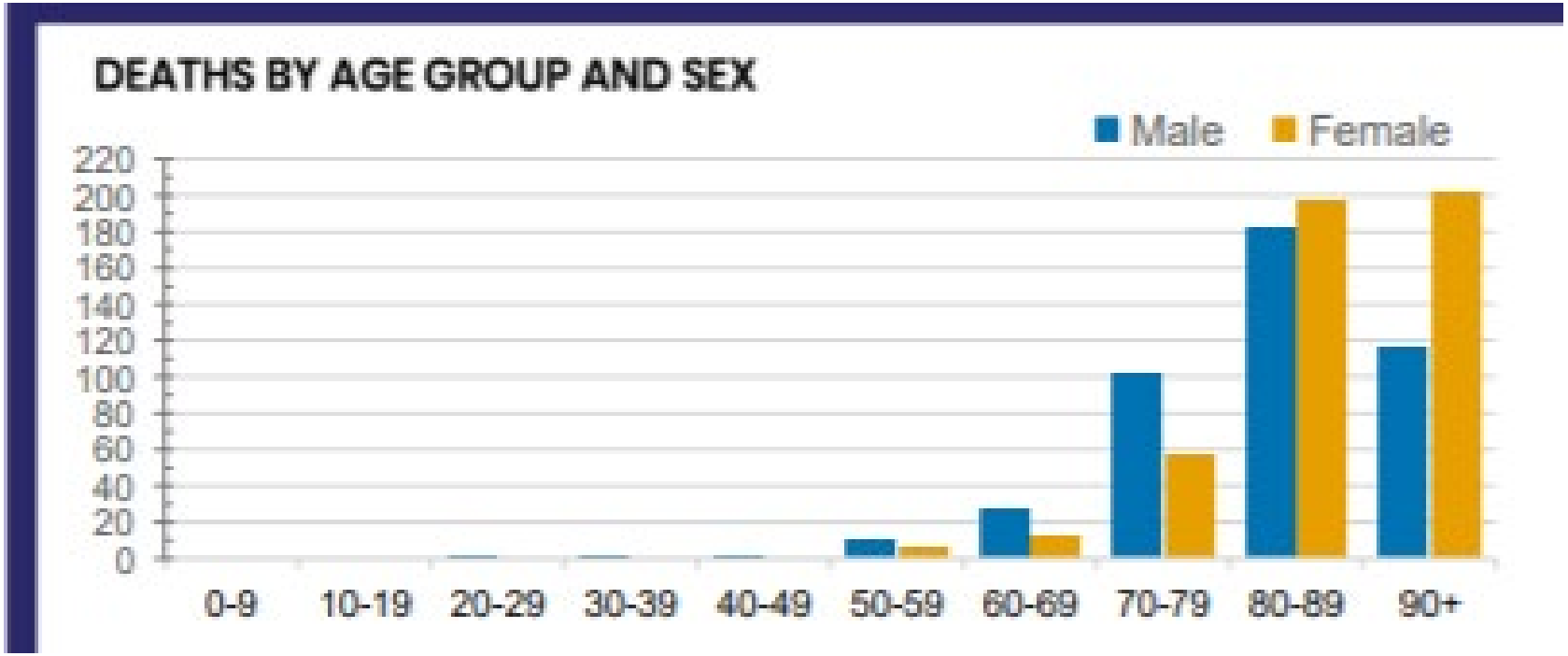
Source: Department of Health: https://www.health.gov.au/sites/default/files/documents/2021/03/coronavirus-covid-19-at-a-glance-14-march-2021_0.pdf

COVID-19 status in Australia – 11 February 2021



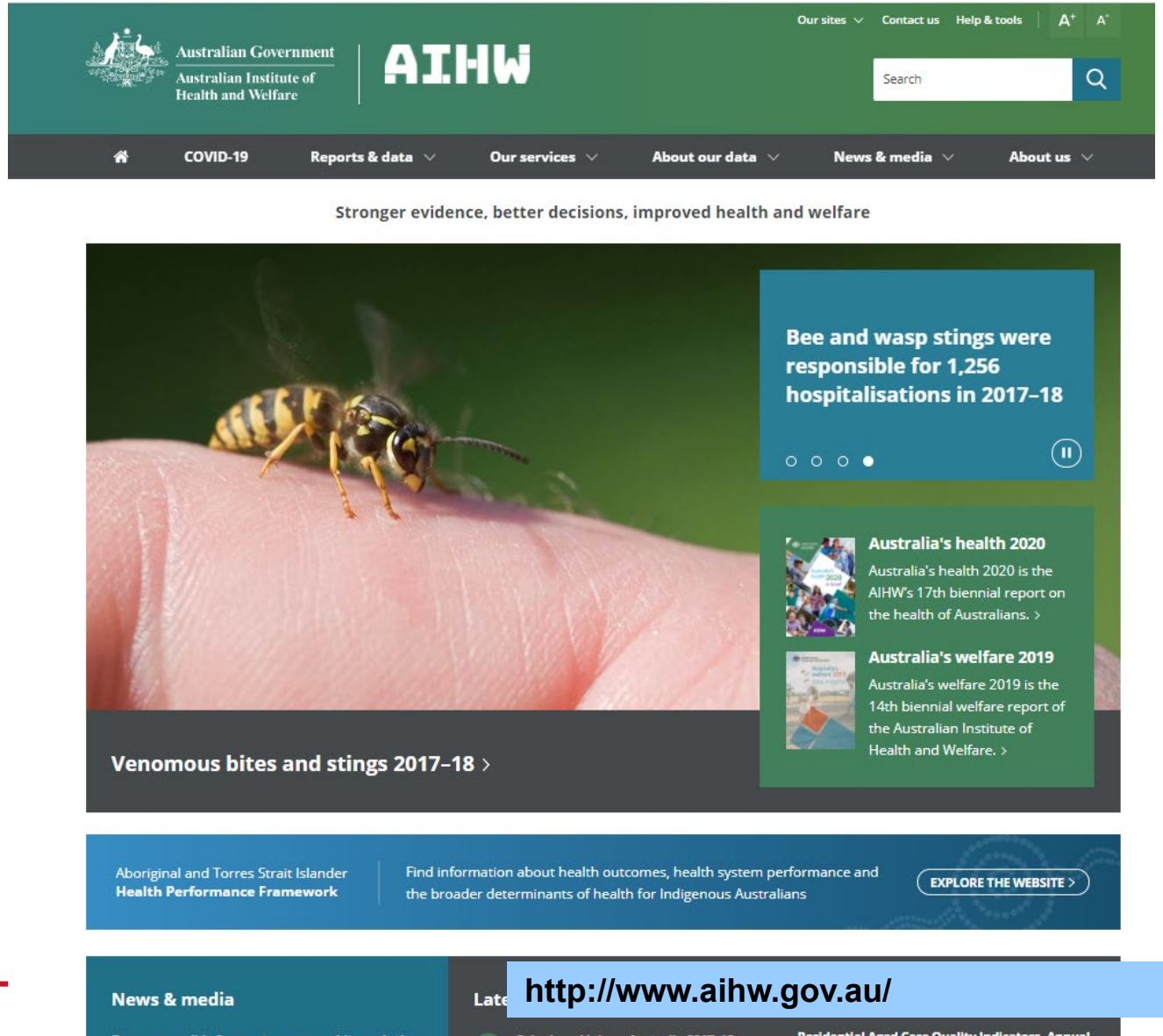
Source: Department of Health: https://www.health.gov.au/sites/default/files/documents/2021/03/coronavirus-covid-19-at-a-glance-14-march-2021_0.pdf

COVID-19 status in Australia – 11 February 2021



Source: Department of Health: https://www.health.gov.au/sites/default/files/documents/2021/03/coronavirus-covid-19-at-a-glance-14-march-2021_0.pdf

Australian Institute of Health and Welfare



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

Australian Bureau of Statistics

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

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

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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

Global Health Observatory (GHO)

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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.

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GHO THEMES

Millennium Development Goals (MDGs)

Key points

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- GBD Results continued
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- Measures of health
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