Get every one in the picture

Writing skills/ report presentation —

Report Writing for Vital Statistics

Data analysis and Report writing workshop for Civil registration and vital statistics data.

UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

◆ Our ultimate aim is to ensure that the data is used as evidence to inform policy and planning decisions.

◆ Why data is not used

The policy making process (adapted from Lippeveld, Sauerborn and Bodart 2000)
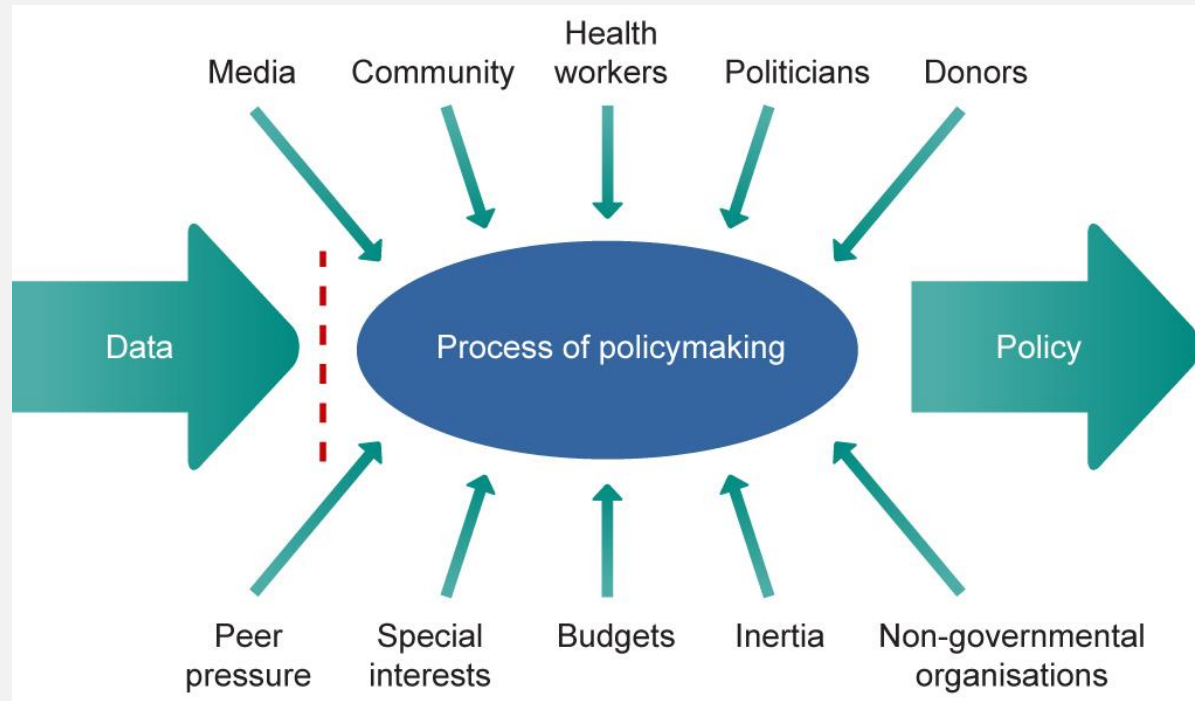
Linking data to planning processes

- Integrate CRVS data into formal planning

- CRVS-related measures as a goal, strategy or target within relevant sections of a plan.

- Identify which indicators and measures can be addressed by data from a CRVS system

- **One of the most important aspects of effective communication is to develop a dissemination schedule and plan your communications around when data is needed.**

- **Linking National Statistics Development Strategies (NSDSs) to CRVS**

How do I select key themes?

- "To complete a **vital statistics** report that illustrates **current levels** and **trends over time**, and that can be used for **planning and policy** review purposes"
  - Vital statistics: births, deaths and cause-of-death
  - Current levels
  - Trends over time
  - Helpful in planning and policy

Important elements

- **WHO** we are talking about
- **WHAT** does the data say
- **WHERE** does the information apply
- **WHEN** was this
- **HOW** do we know

Analysing and describing

- Why analyse?
  - To show relationships, patterns and trends
  - To compare your information with other groups or countries
  - To indicate changes (in frequency, duration or timing)
  - To highlight any potential issues or areas for further investigation
  - To help decision makers with planning and policy decisions

Age distribution of reported deaths - 2011
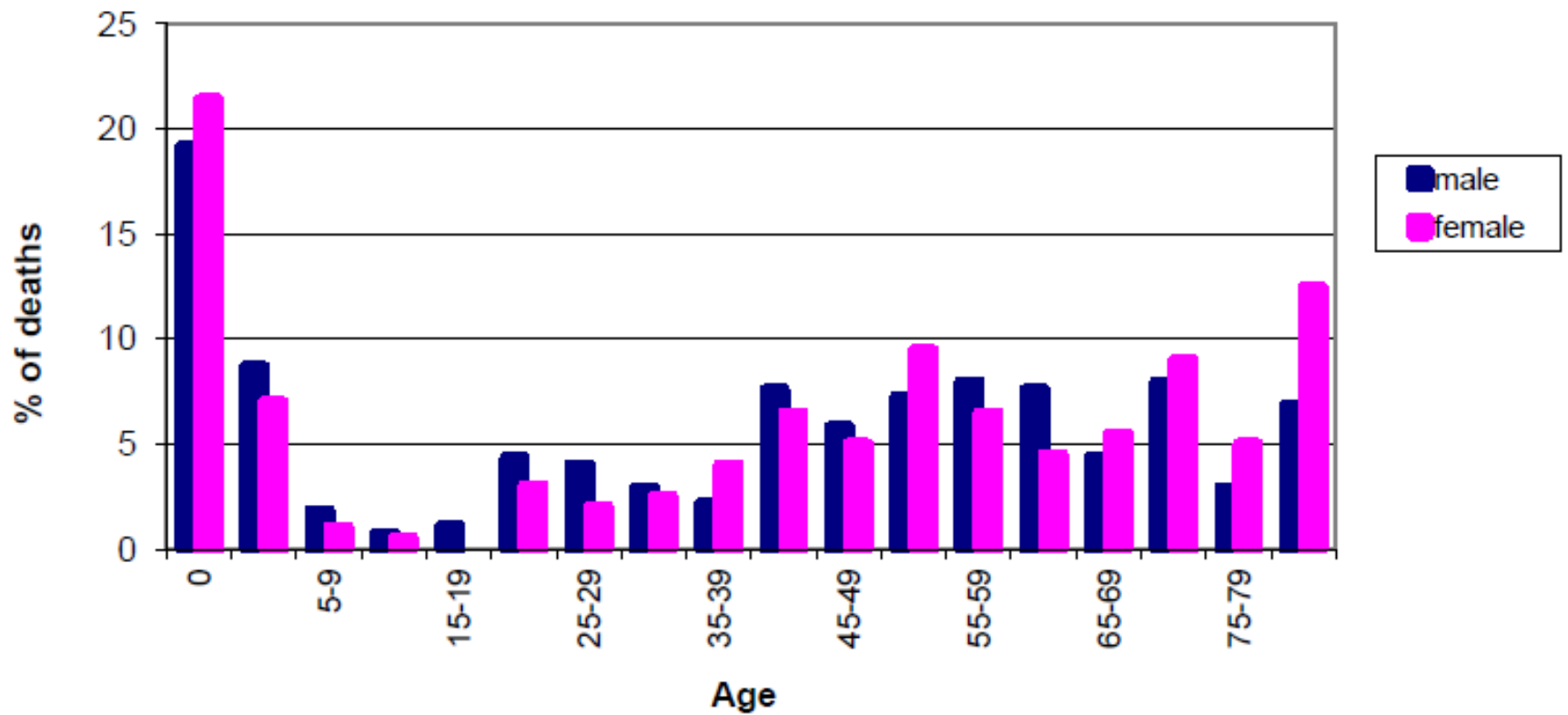
Steps in analysis: Step 1

- **Identify the issues or questions you need information about, clarify your objectives and think about expectations**
  - Understand the issue you are investigating
  - Understand the social, economic and environmental factors that might affect your data
  - Think about how your analysis might be used – what do decision-makers want?

Steps in analysis: Step 2

⬡ **Undertake your analysis**

 ⬡ Graphical analysis

   ⬡ Instant picture of the distributions and patterns

   ⬡ Identify relationships

 ⬡ Summary statistics

   ⬡ Averages

   ⬡ Variability or spread of data

   ⬡ Changes over time

   ⬡ Comparisons with groups, countries, etc

 ⬡ Written comments and interpretation

Steps in analysis: Step 3

- **Assess the results against objectives and expectations**
- Draw some conclusions on what the data is saying
- Think about the issue in context
- Things to consider:
  - What are the main results or conclusions?
  - What other interpretations could there be?
  - Can the results be supported statistically?
  - Do the conclusions make sense?
  - Do the results differ from expectations?

How many females died from breast cancer in 2007?

In 2007, breast cancer was the second most common cause of cancer deaths of females, with 2,680 females dying from the disease (Table 3.1). This means that on average, 7 females in Australia died from breast cancer every day in 2007.

The age-standardised mortality rate for breast cancer was 22 per 100,000. Moreover, deaths from breast cancer accounted for 16% of deaths from cancer in females and for 4% of deaths from any cause in females.

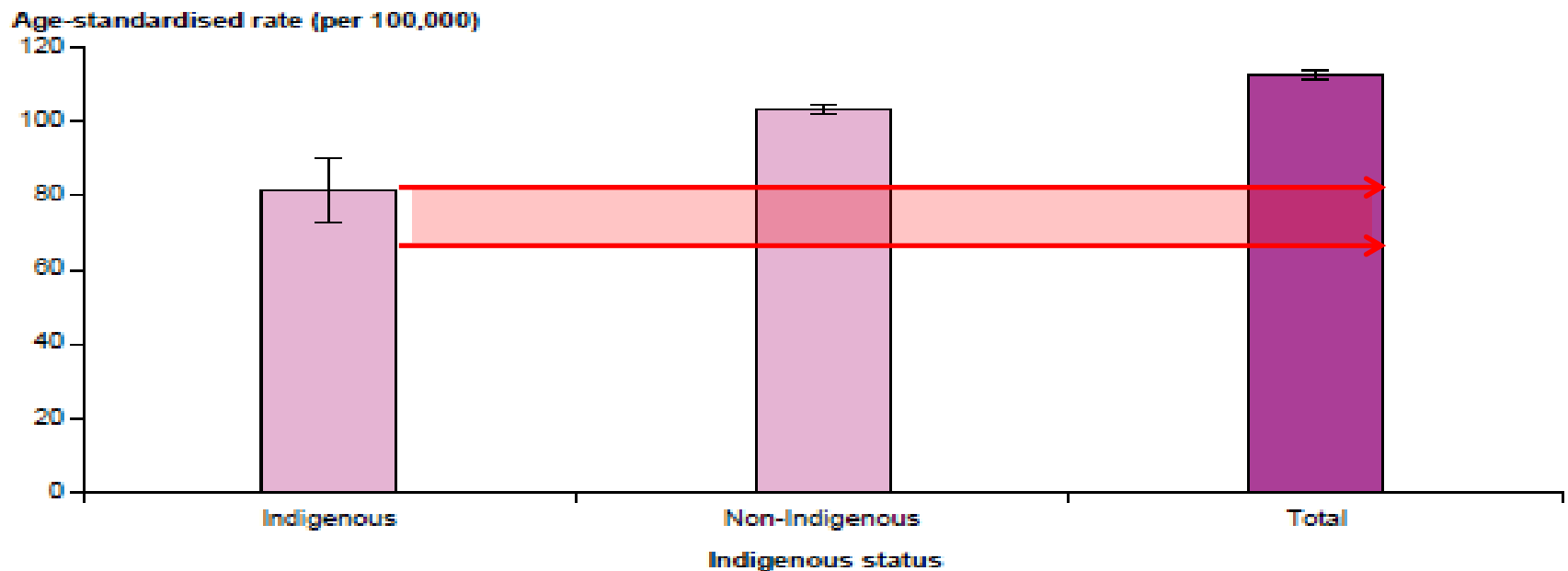**Table 3.1: The five most common types of cancer death, females, Australia, 2007**

Cancer type (ICD-10 codes)	Number of deaths	Percentage of all cancer deaths in females	Percentage of all deaths in females	Age-standardised rate[a]	95% confidence interval
Lung (C33–C34)	2,911	16.8	4.3	24.0	23.1–24.9
Breast (C50)	2,680	15.5	4.0	22.1	21.2–22.9
Bowel (C18–C20)	1,856	10.7	2.8	14.6	13.9–15.3
Total lymphoid cancers (C81–C85, C88, C90, C91)	1,129	6.5	1.7	8.8	8.3–9.3
Unknown primary site (C77–C80)	1,097	6.3	1.6	8.5	8.0–9.1
All cancers[b]	17,322	100.0	25.7	139.1	137.0–141.2

(a)   Standardised to the Australian population as at 30 June 2001 and expressed per 100,000 females.

(b)   Includes cancers coded in ICD-10 as C00–C97, D45, D46, D47.1 and D47.3.

Source: AIHW National Mortality Database.

Figure 2.7 shows that Aboriginal and Torres Strait Islander were significantly less likely to be diagnosed with breast cancer than their non-Indigenous counterparts (81 and 103 per 100,000, respectively). This difference may be explained, at least in part, by the fact that Aboriginal and Torres Strait Islander females are less likely than non-Indigenous females to have a screening mammogram through BreastScreen Australia to detect asymptomatic lesions (as discussed in Chapter 7).
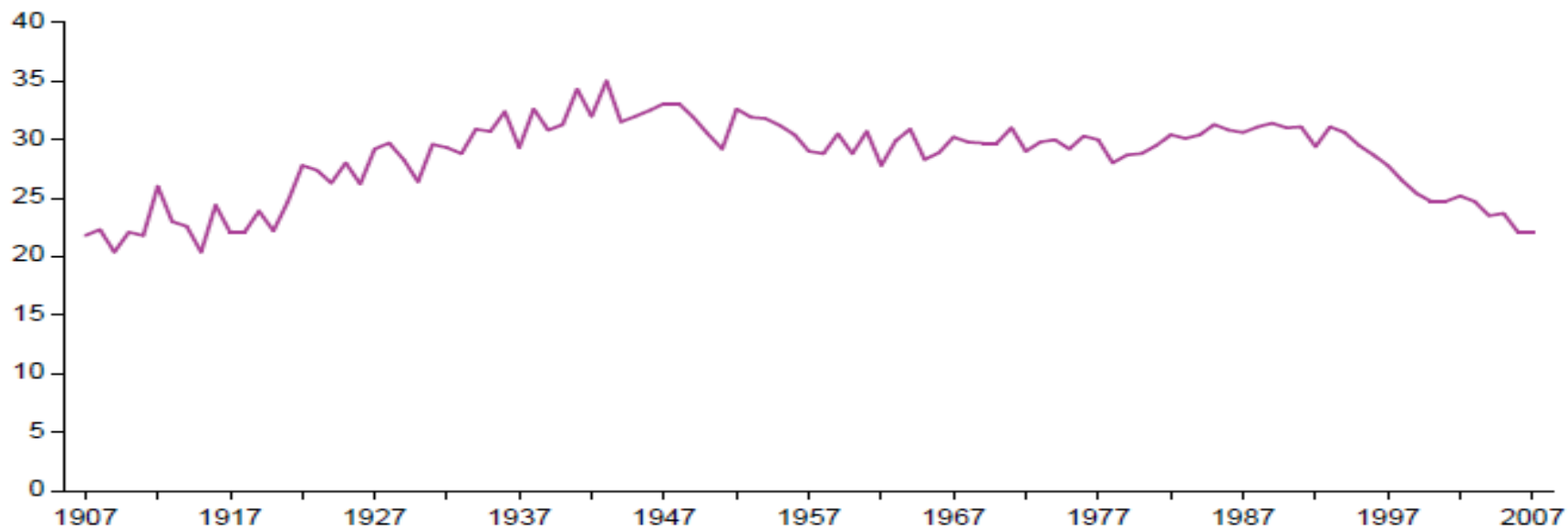
Figure 2.7: Incidence of breast cancer, by Aboriginal and Torres Strait Islander status, females, New South Wales, Queensland, Western Australia and the Northern Territory, 2004–2008

Age-standardised rate (per 100,000)

Figure 3.2: Mortality from breast cancer, by year of death registration, females, Australia, 1907 to 2007

Numerous year-to-year fluctuations in the mortality rate for females due to breast cancer are seen in the data. Nonetheless, the overall pattern indicates that mortality rates from breast cancer for females increased steadily during the first half of the 20th century, after which there was a decline in the middle of the century. This was followed by a general levelling of
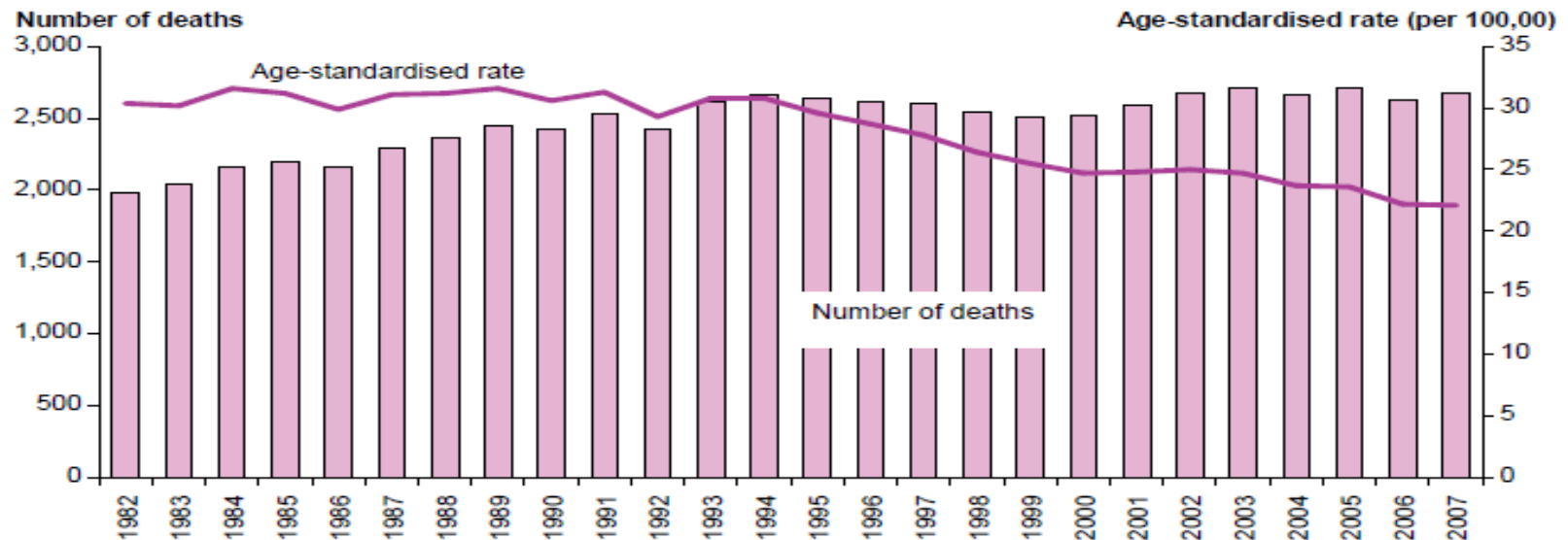
Notes

1. The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 100,000 females.

2. The data for this figure are shown in Appendix Table D3.3.

Source: AIHW National Mortality Database.

Figure 3.3: Mortality from breast cancer, females, Australia, 1982 to 2007

This pattern of decrease in age-standardised mortality rates of females from breast cancer in recent decades is also observed in data from a number of other Westernised countries including Canada (CCSSCCS 2011), New Zealand (NZ Ministry of Health 2011), the United Kingdom (Cancer Reseach UK 2012) and the USA (ACS 2012). This decline is believed to be

due mainly to increased availability and quality of screening mammography (and the related increase in diagnoses at an earlier stage), as well as improved treatment (ACS 2012; CCS & NCIC 2007; IARC 2008).

General tips on writing

- Put your most important data first
  - In *CURRENT YEAR*, the rate was higher than *PREVIOUS YEARS*
  - The rate in *MY COUNTRY* is lower than the *OTHER COUNTRIES*
- One topic per paragraph
- Keep it simple
  - Avoid using too many acronyms or jargon
- Be careful about over-analysing the data

Steps in analysis: Step 4

- **Review the objectives and start your analysis cycle again (if needed)**
- If there are still questions unanswered, you may need to begin the data analysis cycle again
- This might include a literature review of:
  - Other publications (MDG Reports, Annual Reports)
  - Other data sources (census, surveys)

Activity

- Select one graph or table that has something interesting in it – write one paragraph that analyses the data
- Present back to the group
- Put the text into your WORD document!!!

Structuring our reports

Document writing: step 1

- Understand the report
  - Purpose
  - Scope
  - Recommendations
  - Audience
- "To complete a vital statistics report that illustrates current levels and trends over time, and that can be used for planning and policy review purposes"

Document writing: step 2

- Research

- Data analysis

- Literature review
  - other sources of information,
  - other reports, etc

Document writing: step 3

- Organising the information
- Write as you go
  - Don't have to remember as much at the end
  - Breaks up the writing
- Paragraphs
  - Basic building block of good writing
  - One idea to one paragraph

Document writing: step 4

- Develop a rough draft
  - Go back through the paragraphs and refine
  - Some of your analysis may have changed as more data has been analysed

Document writing: step 5

- Final draft
  - Review
  - Consult
  - Make changes
  - Finalise

General tips on writing

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  - In *CURRENT YEAR*, the rate was higher than *PREVIOUS YEARS*
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- One topic per paragraph
- Keep it simple
  - Avoid using too many acronyms or jargon
- Be careful about over-analysing the data

Structuring your report

Beginning
- Foreword, acknowledgements
- Abbreviations, symbols, acronyms, methods
- Summary

Body
- Introduction
- Analysis and results

Ending
- Conclusions – main points
- Recommendations

References
- Reference tables
- Statistical notes, more methods
- Source documents (i.e. Census, surveys)

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Beginning

Provides background and context

- ⬡ 'Sets the scene'

⬡ Foreword and acknowledgements

- ⬡ If needed

⬡ Technical topics

- ⬡ Acronyms, abbreviations, symbols
- ⬡ Methods
- ⬡ Data sources used

⬡ Summary of main findings

Data sources

A key data source for this report was the Australian Cancer Database (ACD). This contains information on all new cases of primary, invasive cancer (excluding basal cell and squamous cell carcinoma of the skin) diagnosed in Australia since 1982. Data are collected by state and territory cancer registries from a number of sources and are supplied annually to the AIHW. The AIHW is responsible for the compilation of the ACD through the National Cancer Statistics Clearing House, a collaboration with the Australasian Association of Cancer Registries (AACR).

Another key data source was the National Mortality Database (NMD). This is a national collection of information for all deaths in Australia from 1964 to 2007 and is maintained by the AIHW. Information on the characteristics and causes of death of the deceased is provided by the Registrars of Births, Deaths and Marriages and coded nationally by the ABS. Unless stated otherwise, death information in this report relates to the year of death, except for the most recent year (namely, 2007) where year of registration is used. Previous investigation has shown that, due to a lag in processing of deaths, year of death information for the latest available year generally underestimates the true number of deaths, whereas the number of deaths registered in that year is closer to the true value.

Several other data sources—including the National Death Index, the National Hospital Morbidity Database, BreastScreen Australia data, the Disease Expenditure Database and the 2008 GLOBOCAN database—have also been used to present a broad picture of in Australia.

Beginning

Methods

Box 1.3: Why do some statistics in this report appear old?

While this report is published in 2012, the statistics in the main chapters refer to 2010 or earlier. The reason is that whether data are collected recently or not, it often takes a year or more before the data are fully processed and released to the AIHW. Also, once the AIHW receives the data, some time is needed to load, clean and analyse them before release.

Why are rolling averages or time periods used, and not single year data?
Explain here about random variation in small populations, the need to average...
Could include an example (i.e. Graph with annual data and averages)

Beginning

Executive summary

Clarifies scope of the report and shows main findings

- Brief overview of the report

- Allows the reader to quickly understand the report contents

- Persuade the reader to keep reading

- Provides concise, complete, specific and self-sufficient information

Beginning

How to write a summary

1. Purpose/aim of the report
   - Why vital statistics are important
   - About this report: first one, etc
2. Methods or analytical process
   - Data sources
3. Results
   - Key findings related to births, deaths and cause of death
4. Recommendations
   - Policy implications

Beginning

Graphics, bullet points and headings

Beginning

Structuring your report

Beginning	• Foreword, acknowledgements • Abbreviations, symbols, acronyms, methods • Summary
Body	• Introduction • Analysis and results
Ending	• Conclusions – main points • Recommendations
References	• Reference tables • Statistical notes, more methods • Source documents (i.e. Census, surveys)

Introduction

Explains why the analysis was done and gives essential background information

- Builds on information outlined in beginning
1. Why vital statistics are important
   - Applications of vital statistics
2. About this report
   - What it covers
   - Why it is important
3. About the country
   - Population size and location
   - Key health concerns
   - Data reporting across the country

Body

Analysis - results

Main text

- 'Core' of the report
- Describes how the analysis was done
- Gives the results
- Interprets the results

- Births
- Deaths
- Cause-of-death

Use the headings in the workbook examples and template provided

Body

Structuring your report

Beginning
- Foreword, acknowledgements
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- Summary

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- Conclusions – main points
- Recommendations

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- Source documents (i.e. Census, surveys)

Conclusions

Describes what the analysis has shown

- Meaning of the results
- What has been highlighted
- Any recommendations for action
- Similar to the executive summary
- With more information

Ending

Structuring your report

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Referencing

- **You reference to show the sources you have used**
  - Shows you have researched
  - Lets people check the original source
- Two main types
  - Author-date (Harvard)
  - Numbered (Vancouver)

References

Source

Table 2.1: The five most commonly diagnosed cancers[a], females, Australia, 2008

Cancer type (ICD-10 codes)	Number of cases	Percentage of all cancer cases in females	Age-standardised rate[b]	95% confidence interval
Breast (C50)	13,567	28.2	115.4	113.5–117.4
Bowel (C18–C20)	6,375	13.2	51.5	50.2–52.8
Melanoma of skin (C43)	4,581	9.5	39.3	38.1–40.4
Lung (C33–C34)	3,944	8.2	32.2	31.2–33.2
Lymphoid cancers[c]	3,181	6.6	26.4	25.5–27.3
All cancers[d]	48,180	100	400.5	396.9–404.1

(a) Excluding basal and squamous cell carcinomas of the skin (see Box 2.1).

(b) Standardised to the Australian population as at 30 June 2001 and expressed per 100,000 females.

(c) Lymphoid cancers (ICD-10 codes of C81–C85, C88, C90 and C91) are cancers that start in lymphocytes of the immune system. The most common types are lymphomas, lymphoid leukaemia and myeloma.

(d) Includes cancers coded in ICD-10 as C00–C97, D45, D46, D47.1 and D47.3 with the exception of those C44 codes which indicate a basal or squamous cell carcinoma of the skin.

Source: AIHW Australian Cancer Database 2008.

Source: AIHW Australian Cancer Database 2008.

Reference tables

Table 126. **Marriages and Divorces—Number and Rate by State: 1990 to 2007**

[2,443.5 represents 2,443,500. By place of occurence. See Appendix III]

State	Marriages [1]						Divorces [3]					
	Number (1,000)			Rate per 1,000 population			Number (1,000)			Rate per 1,000 population [2]		
	1990	2000	2007	1990	2000	2007	1990	2000	2007	1990	2000	2007
U.S. [4]	2,443.5	2,329.0	2,204.6	9.8	8.3	7.3	1,182.0	(NA)	(NA)	4.7	4.1	3.6
Alabama	43.1	45.0	42.4	10.6	10.3	9.2	25.3	23.5	19.8	6.1	5.4	4.3
Alaska	5.7	5.6	5.8	10.2	8.9	8.4	2.9	2.7	3.0	5.5	4.4	4.3
Arizona [5]	35.8	38.7	39.5	10.0	7.9	6.2	25.1	21.6	24.5	6.9	4.4	3.9
Arkansas	36.0	41.1	33.7	15.3	16.0	11.9	16.8	17.9	16.8	6.9	6.9	5.9
California	237.1	196.9	225.8	7.9	5.9	6.2	128.0	(NA)	(NA)	4.3	(NA)	(NA)
Colorado	32.4	35.6	29.2	9.8	8.6	6.0	18.4	(NA)	21.2	5.5	(NA)	4.4
Connecticut	26.0	19.4	17.3	7.9	5.9	4.9	10.3	6.5	10.7	3.2	2.0	3.1
Delaware	5.6	5.1	4.7	8.4	6.7	5.5	3.0	3.2	3.9	4.4	4.2	4.5
District of Columbia	5.0	2.8	2.1	8.2	5.4	3.6	2.7	1.5	1.0	4.5	3.0	1.6
Florida	141.8	141.9	157.6	10.9	9.3	8.6	81.7	81.9	86.4	6.3	5.3	4.7
Georgia	66.8	56.0	64.0	10.3	7.1	6.7	35.7	30.7	(NA)	5.5	3.9	(NA)
Hawaii	18.3	25.0	27.3	16.4	21.2	21.3	5.2	4.6	(NA)	4.6	3.9	(NA)
Idaho	14.1	14.0	15.4	13.9	11.0	10.3	6.6	6.9	7.4	6.5	5.4	4.9
Illinois	100.6	85.5	75.3	8.8	7.0	5.9	44.3	39.1	32.5	3.8	3.2	2.6
Indiana	53.2	54.5	51.2	9.6	5.8	8.1	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Iowa	24.9	20.3	20.1	9.0	7.0	6.7	11.1	9.4	7.8	3.9	3.3	2.6
Kansas	22.7	22.2	18.6	9.2	8.3	6.7	12.6	10.6	9.2	5.0	4.0	3.3
Kentucky	49.8	39.7	33.6	13.5	10.0	7.9	21.8	21.6	19.7	5.8	5.4	4.6
Louisiana	40.4	40.5	32.8	9.6	9.3	7.6	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Maine	11.9	10.5	10.1	9.7	8.3	7.7	5.3	5.8	5.9	4.3	4.6	4.5
Maryland	46.3	40.0	35.5	9.7	7.7	6.3	16.1	17.0	17.4	3.4	3.3	3.1
Massachusetts	47.7	37.0	38.4	7.9	6.0	6.0	16.8	18.6	14.5	2.8	3.0	2.2
Michigan	76.1	66.4	59.1	8.2	6.7	5.9	40.2	39.4	35.5	4.3	4.0	3.5
Minnesota	33.7	33.4	29.8	7.7	6.9	5.7	15.4	14.8	(NA)	3.5	3.1	(NA)
Mississippi	24.3	19.7	15.7	9.4	7.1	5.4	14.4	14.4	14.2	5.5	5.2	4.9
Missouri	49.1	43.7	39.4	9.6	7.9	6.7	26.4	26.5	22.4	5.1	4.8	3.8
Montana	6.9	6.6	7.1	8.6	7.4	7.4	4.1	2.1	3.6	5.1	2.4	3.7
Nebraska	12.6	13.0	12.4	8.0	7.8	7.0	6.5	6.4	5.5	4.0	3.8	3.1
Nevada	120.6	144.3	126.4	99.0	76.7	49.3	13.3	18.1	16.6	11.4	9.6	6.5
New Hampshire	10.5	11.6	9.4	9.5	9.5	7.1	5.3	7.1	5.1	4.7	5.8	3.9
New Jersey	58.7	50.4	45.4	7.6	6.1	5.2	23.6	25.6	25.7	3.0	3.1	3.0
New Mexico [5]	13.3	14.5	11.2	8.8	8.3	5.7	7.7	9.2	8.4	4.9	5.3	4.3
New York [4]	164.8	162.0	130.6	8.6	8.9	6.8	57.9	62.8	55.9	3.2	3.4	2.9
North Carolina	51.9	65.6	68.1	7.8	8.5	7.5	34.0	36.9	37.4	5.1	4.8	4.1
North Dakota	4.8	4.6	4.2	7.6	7.3	6.6	2.3	2.0	1.5	3.6	3.2	2.4
Ohio	98.1	88.5	70.9	9.0	7.9	6.2	51.0	49.3	37.9	4.7	4.4	3.3
Oklahoma	33.2	15.6	26.2	10.6	4.6	7.3	24.9	12.4	18.8	7.7	3.7	5.2
Oregon	25.3	26.0	29.4	8.9	7.8	7.8	15.9	16.7	14.8	5.5	5.0	4.0
Pennsylvania	84.9	73.2	71.1	7.1	6.1	5.7	40.1	37.9	35.3	3.3	3.2	2.8
Rhode Island	8.1	8.0	6.8	8.1	8.0	6.4	3.8	3.1	3.0	3.7	3.1	2.8
South Carolina	55.8	42.7	31.4	15.9	10.9	7.1	16.1	14.4	14.4	4.5	3.7	3.3
South Dakota	7.7	7.1	6.2	11.1	9.6	7.7	2.6	2.7	2.4	3.7	3.6	3.1
Tennessee	68.0	88.2	65.6	13.0	15.9	10.6	32.3	33.8	29.9	6.5	6.1	4.9
Texas	178.6	196.4	179.9	10.5	9.6	7.5	94.0	85.2	79.5	5.5	4.2	3.3
Utah	19.4	24.1	22.6	11.2	11.1	8.6	8.8	9.7	8.9	5.1	4.5	3.4
Vermont	6.1	6.1	5.3	10.9	10.2	8.6	2.6	5.1	2.4	4.5	8.6	3.8
Virginia	71.0	62.4	58.0	11.4	9.0	7.5	27.3	30.2	29.5	4.4	4.3	3.8
Washington	46.6	40.9	41.8	9.5	7.0	6.5	28.8	27.2	28.9	5.9	4.7	4.5
West Virginia	13.0	15.7	13.0	7.2	8.7	7.2	9.7	0.3	9.0	5.3	5.2	5.0
Wisconsin	38.9	36.1	32.2	7.9	6.8	5.8	17.8	17.6	16.1	3.6	3.3	2.9
Wyoming	4.9	4.9	4.8	10.7	10.3	9.3	3.1	2.8	2.9	6.6	5.9	5.5

NA Not available. [1] Data are counts of marriages performed, except as noted. [2] Based on total population residing in area; population enumerated as of April 1 for 1990 and 2000; estimated as of July 1 for all other years. [3] Includes annulments. [4] U.S. total for the number of divorces is an estimate which includes states not reporting. Beginning 2000, divorce rates based solely on the combined counts and populations for reporting states and the District of Columbia. The collection of detailed data of marriages and divorces was suspended in January 1996. [5] Some figures for marriages are marriage licenses issued.

Source: U.S. National Center for Health Statistics, National Vital Statistics Reports (NVSR), *Births, Marriages, Divorces, and Deaths: Provisional Data for 2007,* Vol. 56, No. 21, July 14, 2008 and prior reports.

References

Exercise

- Time to write