The Burden of Chronic diseases: Contribution to Closing the Gap

CCAP Chronic Conditions Forum
NEW Agency for Clinical Innovations

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Fadwa Al-Yaman
Indigenous and Children’s Group
Australian Institute of Health and Welfare
Outline

• The context matters: population, geography
• What does existing data tell us about health outcomes?
• What does the burden of disease analysis add?
• What are the determinants of the health gap?
• Where to focus efforts to improve health outcomes and close the gap and
# Indigenous population 2017

<table>
<thead>
<tr>
<th>State</th>
<th>Indigenous population</th>
<th>% of Australian Indigenous population</th>
<th>Total population</th>
<th>Indigenous population as % of total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>234,699</td>
<td>30.8</td>
<td>7,795,072</td>
<td>3.0</td>
</tr>
<tr>
<td>Victoria</td>
<td>55,073</td>
<td>7.2</td>
<td>6,146,277</td>
<td>0.9</td>
</tr>
<tr>
<td>Queensland</td>
<td>218,448</td>
<td>28.7</td>
<td>5,059,620</td>
<td>4.3</td>
</tr>
<tr>
<td>South Australia</td>
<td>42,406</td>
<td>5.6</td>
<td>1,744,656</td>
<td>2.4</td>
</tr>
<tr>
<td>Western Australia</td>
<td>99,697</td>
<td>13.1</td>
<td>2,835,948</td>
<td>3.5</td>
</tr>
<tr>
<td>Tasmania</td>
<td>27,682</td>
<td>3.6</td>
<td>525,336</td>
<td>5.3</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>75,692</td>
<td>9.9</td>
<td>257,368</td>
<td>29.4</td>
</tr>
<tr>
<td>Australian Capital Territory</td>
<td>7,310</td>
<td>1.0</td>
<td>413,633</td>
<td>1.8</td>
</tr>
<tr>
<td><strong>Australia</strong></td>
<td><strong>761,300</strong></td>
<td><strong>100.0</strong></td>
<td><strong>24,781,121</strong></td>
<td><strong>3.1</strong></td>
</tr>
</tbody>
</table>
Indigenous population by geography

Australia:
- Major cities: 35%
- Inner regional: 23%
- Outer regional: 22%
- Remote: 7%
- Very remote: 13%

NSW:
- Major cities: 45%
- Inner regional: 34%
- Outer regional: 17%
- Remote: 3%
- Very remote: 2%
Existing data – what does it tell us about Indigenous health?
Health outcomes: life expectancy is improving – Australia and NSW

| Life expectancy at birth | Indigenous | | Non-Indigenous | | Difference (years) |
|--------------------------|------------|------------------|------------------|------------------|
|                          | Males      | Females          | Males            | Females          | Males            | Females          |
| **2005–2007**            |            |                  |                  |                  |                  |                  |
| NSW                      | 68.3       | 74.0             | 78.8             | 82.6             | 10.5             | 8.6              |
| Australia                | 67.5       | 73.1             | 78.9             | 82.6             | 11.4             | 9.6              |
| **2010–2012**            |            |                  |                  |                  |                  |                  |
| NSW                      | 70.5       | 74.6             | 79.8             | 83.1             | 9.3              | 8.5              |
| Australia                | 69.1       | 73.7             | 79.7             | 83.1             | 10.6             | 9.5              |
Overall mortality rates are declining slowly in Indigenous and non-Indigenous populations but the gap remains the same.
Indigenous Mortality
From cardiovascular declining
From cancer increasing
Chronic diseases are the leading causes of death nationally and in NSW

### Australia

<table>
<thead>
<tr>
<th>Category</th>
<th>Indigenous (%)</th>
<th>Non-Indigenous (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indigenous (%)</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>Non-Indigenous (%)</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Circulatory diseases</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Endocrine disorders (incl. diabetes)</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Respiratory diseases</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>22</td>
<td>21</td>
</tr>
</tbody>
</table>

### NSW

<table>
<thead>
<tr>
<th>Category</th>
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<th>Non-Indigenous (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indigenous (%)</td>
<td>25</td>
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</tr>
<tr>
<td>Non-Indigenous (%)</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>Circulatory diseases</td>
<td>13</td>
<td>5</td>
</tr>
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<tr>
<td>Respiratory diseases</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
<td>22</td>
</tr>
</tbody>
</table>
What about risk factors linked to chronic diseases?

- Inadequate daily vegetable intake
  - Indigenous: 95
  - Non-Indigenous: 93

- Overweight/obese
  - Indigenous: 63
  - Non-Indigenous: 72

- Sedentary/low exercise
  - Indigenous: 63
  - Non-Indigenous: 58

- Inadequate daily fruit intake
  - Indigenous: 52
  - Non-Indigenous: 57

- Single occasion risky alcohol consumption
  - Indigenous: 45
  - Non-Indigenous: 52

- Current daily smoker
  - Indigenous: 19
  - Non-Indigenous: 20

- Lifetime risky alcohol consumption
  - Indigenous: 42
  - Non-Indigenous: 16
Current data and methods of assessing population health

- Health surveys – prevalence of diseases and risk factors
- Problems managed by GP (surveys or admin data)
- Hospitalisations (administrative data)
- Mortality (administrative data)

These give different measures about prevalence of health conditions, use of services and dying from different conditions
The impacts can’t be combined or ranked
The burden of Disease
What does burden of disease add? One measure that captures information from many sources

**Impact of diseases (in years lost)**
- more than number of deaths
- and more than prevalence or incidence of disease

**Comparability**
- across fatal/non-fatal
- across diseases

**Links main risk factors to disease burden**
Total Indigenous burden by age and sex

- Total of 190,227 years lost due to premature death or living with illness (DALY) for Indigenous Australians
- Number of DALY highest in young children and middle age groups
- DALY rates generally increase with age
- Males experience higher rates than females in all age groups
Total causes of the burden

Mental health, injuries, cardiovascular, cancer, respiratory = 64% of total Burden from chronic diseases
Mental health leading cause for both sexes
Injuries (including self-harm) greater cause for males than for females
Contribution of disease groups to Indigenous non-fatal burden

- Together, mental/substance use disorders, musculoskeletal conditions and respiratory diseases caused around two-thirds (65%) of the non-fatal burden.
- Mental & substance use disorders by far the largest contributor for both sexes.
Contribution of disease groups to Indigenous fatal burden

Injuries, cardiovascular diseases, cancer and infant & congenital conditions = 75% of burden
The burden of disease for Indigenous Australians was 2.3 times the rate of non-Indigenous Australians. The gap varies by age.
Disease groups contributing to the gap

- DALY rate in Indigenous Australians 2.3 times that in non-Indigenous Australians.
  - Indigenous fatal burden 2.7 times that for non-Indigenous Australians
  - Indigenous non-fatal burden 2.0 times that for non-Indigenous Australians
- Chronic diseases were responsible for more than two-thirds (70%) of the gap.
Causes of the Gap change with age
Contribution of leading risk factors to gap

Top five: tobacco smoking, obesity, alcohol, physical inactivity, high blood pressure.
Determinants of the health gap

Some estimates from the literature:

- SES disadvantage: one-third to one-half (Booth and Carroll, 2005)
- Risk factors: 49% (Vos et al 2007)
- Health system: 27% (Capewell et al. 2010)
- Significant interactions within and between 3 domains must be accounted for
- Other gaps not explained (culture and identity)
Social and economic indicators

<table>
<thead>
<tr>
<th></th>
<th>Indigenous</th>
<th>Non-Indigenous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>61.5%</td>
<td>76%</td>
</tr>
<tr>
<td>Employed</td>
<td>48.4</td>
<td>72.6</td>
</tr>
<tr>
<td>Median weekly income</td>
<td>$402</td>
<td>$751</td>
</tr>
<tr>
<td>Home owners</td>
<td>30.3</td>
<td>71.8</td>
</tr>
</tbody>
</table>
Where are the primary health care services?

Indigenous-specific primary health care services

GP services

SA2
All primary health services (PHS) and Indigenous-specific primary health services by remoteness area

**Australia**

<table>
<thead>
<tr>
<th></th>
<th>All PHCS</th>
<th>Indigenous specific ISPHCS</th>
<th>% of All PHS that are Indigenous specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major cities</td>
<td>5,352</td>
<td>38</td>
<td>0.7%</td>
</tr>
<tr>
<td>Inner regional</td>
<td>1,381</td>
<td>58</td>
<td>4.2%</td>
</tr>
<tr>
<td>Outer regional</td>
<td>744</td>
<td>64</td>
<td>8.6%</td>
</tr>
<tr>
<td>Remote</td>
<td>160</td>
<td>51</td>
<td>31.9%</td>
</tr>
<tr>
<td>Very remote</td>
<td>157</td>
<td>112</td>
<td>71.3%</td>
</tr>
<tr>
<td>Total</td>
<td>7,794</td>
<td>323</td>
<td>4.1%</td>
</tr>
</tbody>
</table>
Areas with poor access to health services

40 SA2s with:

- 0% of Indigenous people within 1 h of nearest ISPHCS and...
- Poor access to GP services in general relative to need
- 8 in Qld, 2 NSW, 1 in WA
Areas with poor access

- Indigenous-specific primary health care services
- GP services

SA2
- Aboriginal and Torres Strait Islander populations below 600 [3]
- Aboriginal and Torres Strait Islander populations above 600 [2]
Health service access issues

- Gaps in the availability of services within driving distance (1 hour drive)
- 30% reported not accessing health care when needed reasons include treated badly, care not affordable, no transport
- Lower procedure rates in hospitals (62% vs 81%)
- Discharge from hospital 7 times the non-Indigenous rate
Where to focus efforts to improve health outcomes?

Policy initiatives need to address all factors contributing to the health gap (Social determinants, Risk factors and access to services)

Use local level data to identify areas of need

Allow realistic time frames to achieve outcomes
Impact of policy initiatives

Policy initiatives

MEDICAL SERVICES

HEALTH PROMOTION

EDUCATION & EMPLOYMENT

DECREASE IN RISK FACTORS

IMPROVED TREATMENT

Improved health outcomes
Local level data shows where to concentrate efforts

- High level national data masks variation in health outcomes at the local level
- Variations in health outcomes locally are driven by characteristics of people, places and availability of services
- Local level data (eg SA1-4,PHN) can show both where things are working well and where more effort is needed
Current smokers by Indigenous Regions - NSW
Obesity by Indigenous Regions - NSW
Indigenous health checks by PHN

Proportion of Indigenous Australians who had a health assessment

- 3.2–7.5
- 7.6–15.6
- 15.7–21.6
- 21.7–27.4
- 27.5–34.9
Indigenous health checks by PHN

Western NSW
Northern Queensland
Brisbane North (Qld)
Darling Downs & West Moreton (Qld)
Brisbane South (Qld)
Gold Coast (Qld)
Central Queensland & Sunshine Coast
Perth North (WA)
Country SA
Northern Territory
Australian Capital Territory
Murrumbidgee (NSW)
Country WA
North Coast (NSW)
Western Queensland
Murray (Vic, NSW)
Hunter New England & Central Coast (NSW)
Grampians & Barwon South West (Vic)
South Eastern NSW
South Western Sydney (NSW)
North Western Melbourne (Vic)
Perth South (WA)
Nepean Blue Mountains (NSW)
Gippsland (Vic)
Adelaide (SA)
Western Sydney (NSW)
Tasmania
Central & Eastern Sydney (NSW)
South Eastern Melbourne (Vic)
Eastern Melbourne (Vic)
Northern Sydney (NSW)
Realistic time frames

From policy announcement to observable change in health outcomes

- Policy announced
- Program implemented
- Reduction in risks
- Reduction in disease rates
- Reduction in mortality

Observable increase in health outcomes
Summary

• Sustained efforts are needed to improve health outcomes and close the gap

• Health initiatives alone are unlikely to close the gap

• Social and cultural determinants are critical

• In the long term reduction of risky behaviour (especially smoking) will be more cost effective than treatment

• But in the short term we need to do both