Regional variation in burden of disease in Australia

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Australian Burden of Disease Study 2011

• Quantified:
  • Fatal and non-fatal impact of 200 diseases and injuries in Australia
  • Contribution of 29 risk factors to this disease burden

• 2 components
  • national and Indigenous

• Subnational estimates
  • state/territory, remoteness, socioeconomic status

• 2003 and 2011 estimates

• Draws on recent advances in global methods, tailored to Australian policy context
Methods summary

**Fatal burden**
- Number of deaths
- Age at death
- Years lost from premature death
- Years of life lost (YLL)

**Non-fatal burden**
- Number of cases (prevalence)
- Duration
- Severity
- Years lived in less than full health
- Years lived with disability (YLD)

**Total burden**
- YLL + YLD = Disability adjusted life year (DALY)
Focus of this presentation

• Results from ABDS 2011 on variation in disease burden across remoteness areas
  • variation in total disease burden, fatal burden and non-fatal burden
  • variation across age groups
  • leading diseases causing burden in each remoteness area

• Estimates for total Australian population in 2011

• Remoteness areas defined based on the 2011 Australian Statistical Geographic Standard
  • Major cities, Inner regional, Outer regional, Remote, Very remote.
Burden ↑ with ↑ remoteness

Figure 1: DALY, YLL and YLD age-standardised rates (per 1,000), by remoteness, 2011
↑ burden with ↑ remoteness more evident in older ages

Figure 2: Age-specific rates of burden (DALY), by age-group and remoteness, 2011
Pattern of ↑ burden with ↑ remoteness holds for most disease groups

Figure 3: DALY age-standardised rates, by remoteness for selected disease groups, 2011
Regional variation in burden from leading specific diseases

Figure 4: Age-standardised DALY rate (per 1,000 people) of the top 10 diseases, by remoteness, 2011
### Top 10 diseases causing burden in each remoteness area

<table>
<thead>
<tr>
<th>Rank</th>
<th>Major City</th>
<th>Inner Regional</th>
<th>Outer Regional</th>
<th>Remote</th>
<th>Very Remote</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Coronary heart disease</td>
<td>Coronary heart disease</td>
<td>Coronary heart disease</td>
<td>Coronary heart disease</td>
<td>Coronary heart disease</td>
<td>Coronary heart disease</td>
</tr>
<tr>
<td>2nd</td>
<td>Other musculoskeletal (4.2%, 7.7)</td>
<td>Other musculoskeletal (4.2%, 8.7)</td>
<td>COPD (3.9%, 7.5)</td>
<td>Suicide/self-inflicted injuries (4.6%, 11.3)</td>
<td>Suicide/self-inflicted injuries (6.4%, 14.7)</td>
<td>Other musculoskeletal (4.1%, 7.8)</td>
</tr>
<tr>
<td>3rd</td>
<td>Back pain and problems (3.7%, 6.7)</td>
<td>COPD (3.9%, 7.1)</td>
<td>Lung cancer (3.9%, 7.2)</td>
<td>Asthma (3.4%, 8.1)</td>
<td>Diabetes (3.7%, 12.7)</td>
<td>Back pain and problems (3.6%, 7.1)</td>
</tr>
<tr>
<td>4th</td>
<td>Anxiety disorders (3.6%, 6.8)</td>
<td>Back pain and problems (3.9%, 8.7)</td>
<td>Other musculoskeletal (3.4%, 6.7)</td>
<td>Other musculoskeletal (3.4%, 8.0)</td>
<td>RTI/motor vehicle occupant (3.1%, 7.3)</td>
<td>COPD (3.6%, 6.5)</td>
</tr>
<tr>
<td>5th</td>
<td>Dementia (3.5%, 5.8)</td>
<td>Lung cancer (3.8%, 6.9)</td>
<td>Back pain and problems (3.2%, 6.8)</td>
<td>Lung cancer (3.3%, 7.8)</td>
<td>Other musculoskeletal (3.0%, 10.1)</td>
<td>Lung cancer (3.4%, 6.3)</td>
</tr>
<tr>
<td>6th</td>
<td>COPD (3.4%, 6.1)</td>
<td>Dementia (3.4%, 5.8)</td>
<td>Stroke (2.9%, 5.7)</td>
<td>RTI/motor vehicle occupant (3.2%, 7.7)</td>
<td>Chronic kidney disease (2.9%, 11.5)</td>
<td>Dementia (3.4%, 5.7)</td>
</tr>
<tr>
<td>7th</td>
<td>Lung cancer (3.3%, 5.9)</td>
<td>Stroke (3.1%, 5.6)</td>
<td>Suicide/self-inflicted injuries (2.9%, 6.9)</td>
<td>Back pain and problems (3.1%, 7.2)</td>
<td>Back pain and problems (2.7%, 8.2)</td>
<td>Anxiety disorders (3.1%, 6.4)</td>
</tr>
<tr>
<td>8th</td>
<td>Depressive disorders (3.2%, 6.1)</td>
<td>Anxiety disorders (2.5%, 6.0)</td>
<td>Dementia (2.8%, 5.3)</td>
<td>Diabetes (3.0%, 7.6)</td>
<td>Lung cancer (2.7%, 9.2)</td>
<td>Stroke (3.0%, 5.4)</td>
</tr>
<tr>
<td>9th</td>
<td>Stroke (3.1%, 5.4)</td>
<td>Suicide/self-inflicted injuries (2.3%, 5.9)</td>
<td>Diabetes (2.5%, 4.8)</td>
<td>COPD (2.9%, 7.5)</td>
<td>COPD (2.6%, 10.5)</td>
<td>Depressive disorders (2.8%, 5.9)</td>
</tr>
<tr>
<td>10th</td>
<td>Asthma (2.4%, 4.6)</td>
<td>Depressive disorders (2.3%, 5.5)</td>
<td>Asthma (2.3%, 5.3)</td>
<td>Rheumatoid arthritis (2.2%, 5.0)</td>
<td>Asthma (2.8%, 7.3)</td>
<td>Suicide/self-inflicted injuries (2.5%, 6.1)</td>
</tr>
</tbody>
</table>
Summary of results

• Burden increases with increasing remoteness
• This pattern is more evident in older ages.
• This pattern also continues for most disease groups, notably CVD, kidney & urinary diseases, endocrine disorders and injuries.
• However, the gradient of the inequality in disease burden across remoteness areas varied by disease. This suggests that:
  • regional patterns may be masked in the national data
  • the variations reflect a complex interaction between demographic, socioeconomic and environmental factors.
Conclusion

• Burden of disease studies provide an important resource for research, and to inform health policy and health service planning
  • Highlight which diseases are causing the greatest health inequalities and the areas where there are the most potential for health gains

• Results from ABDS 2011 suggest that large health gains may be achieved by reducing excess burden in remote and very remote areas

• Appears to be driven by:
  • Higher overall fatal burden (premature deaths)
  • Higher burden from CHD, suicide, COPD, lung cancer

• Opportunities exist to further use and extend these estimates
  • e.g. burden at local levels; costs of disease burden; deeper analysis of specific diseases or risk factors
Where to find out more?

Reports published from the ABDS 2011 can be found on the AIHW website:

Contact us via email (data and information requests):
burdenofdisease@aihw.gov.au

Acknowledgements

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