Quantification in HIA: why, what, how?
Some real life examples and tensions

Dr Margaret Douglas
Public Health Consultant
NHS Lothian
Why quantify?

- HIA of Manchester Airport 2nd runway, 1994

- Impacts:
  - air quality
  - noise
  - employment

- Included literature review and quantification, took 9 months
Manchester airport: impacts

- **Air quality:**
  - Current air pollution from travel to airport and from aircraft
  - 37% of population at risk of respiratory effects of air pollution
  - 66% of journeys to airport by car
  - Unable to estimate predicted increase in air pollution or health impacts of this

- 2 different estimates of mortality impact of employment:
  - Scott Samuel method predicted 50,000 jobs would prevent 75 premature deaths a year
  - Brenner method predicted 50,000 jobs would prevent 1,000 – 3,000 deaths per year

- And presented evidence on noise and health
Manchester airport: outcome

• Recommendations
  – Sound insulation, noise control, night flying
  – Promotion of public transport
  – Recruitment policies
  – Air quality monitoring
• All could have been predicted at outset - so why quantify?

• Went to planning enquiry
• Formal undertaking by Airport authority
• Need for robust evidence
• Gave baseline for evaluation
• Also noted likely health service impact
Which exposed population?

- HIA of proposed Winchburgh urban extension

- Impacts include:
  - Air quality
  - Physical activity
  - Traffic injuries
  - Social capital and mental wellbeing

- Want to apply these to affected populations

- Current population of 2500: good baseline data for profile of demography, deprivation and health
- In-coming population of 7000 people: no data
How much value?

- HIA of 2014 Commonwealth Games
- Many areas of impact including:
  - Transport and physical activity
  - Volunteering
  - Employment
  - Civic pride

- Multi-method HIA
- Included views of affected populations and other stakeholders
- Representative household survey, 1200 respondents
- Bespoke questionnaire, 1600 respondents

- 50% thought Games would have positive impact
Commonwealth Games: respondents’ priorities, selected findings

- Impacts of transport
  - 86% expected positive impact of improved transport system
  - 75% concerned about increased traffic

- How Games can promote health
  - 76% said - by promoting healthy food
  - 34% said - through sports role models

- Games contractors: ‘very important’ responses
  - 72% - employ local people
  - 30% - non-profit

- Motivations for volunteering:
  - 49% to be part of big event
  - 38% for personal development
  - 10% for reimbursement of expenses
  - 10% for recognition

- Thanks to Susie Palmer, GCC and Russell Jones, GCPH
Quantification and prioritisation

- Health impacts of air pollution in Edinburgh

<table>
<thead>
<tr>
<th>Annual impacts</th>
<th>Impacts of current air pollution</th>
<th>Benefit of 10% reduction in traffic pollution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>City</td>
<td>AQMAS</td>
</tr>
<tr>
<td>Deaths brought forward</td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>Emergency respiratory and CV hospital admissions</td>
<td>88</td>
<td>3</td>
</tr>
<tr>
<td>GP visits asthma/ LRS</td>
<td>974</td>
<td>31</td>
</tr>
<tr>
<td>Days lost life expectancy</td>
<td>846249</td>
<td>28304</td>
</tr>
</tbody>
</table>

- Increase in individual life expectancy over 75 years if reduce traffic pollution by 10%
  - 2 days; 9 days in AQMAs
- Concluded that other health benefits of reducing traffic may be more important – so don’t just focus on technology to reduce emissions
  - Thanks to Alison Searl, IOM
Inequalities and quantification

Edinburgh Waterfront and Leith Area Development Framework
Areas in ADF area: baseline SMRs

<table>
<thead>
<tr>
<th></th>
<th>Standardised Mortality Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADF area</td>
<td>120</td>
</tr>
<tr>
<td>Leith</td>
<td>130</td>
</tr>
<tr>
<td>Newhaven</td>
<td>96</td>
</tr>
<tr>
<td>Granton</td>
<td>134</td>
</tr>
</tbody>
</table>

- Brought inequalities onto agenda
- Used to recommend priority areas for regeneration
Some thoughts

- Need to identify ‘WHAT’ and ‘WHO’ before ‘HOW MANY’

- Equity:
  - Don’t lose differences in a single metric
  - Say who will bear the impacts, and their current health status

- Answer the questions that matter
  - To inform choices or recommendations
  - To inform scale of action
  - To make the case