The reimbursement influence on practice

Richard Grieve
Professor of Health Economics,
Team for Health Economics, policy and Technology assessment (THETA)
London School of Hygiene and Tropical Medicine
Disclosure

Speaker name: Richard Grieve

- I have the following potential conflicts of interest to report:
  - Receipt of grants/research support
  - Receipt of honoraria and travel support
  - Participation in a company sponsored speakers’ bureau
  - Employment in industry
  - Shareholder in a healthcare company
  - Owner of a healthcare company

- I do not have any potential conflict of interest
What do these countries have in common?

- Canada
- Germany
- UK
- France
- Italy
- Spain
- Sweden
- China
- Taiwan
- Japan
- Australia
- New Zealand
- South Korea
- Brazil
- Argentina
- South Africa

Use costs and effectiveness in central reimbursement decisions
What is a cost-effectiveness study?

**IMPROVE:** ruptured abdominal aortic aneurism (AAA)

Choice:
- Endovascular repair strategy
- Open repair strategy

Requirement of outcomes:
- Outcomes
- Costs

Incremental effectiveness:
- Incremental costs

Require broad measurement of outcome
Outcomes: Quality-Adjusted Life Years (QALYs)

- Quality of life (QOL) and Quantity of life
- Calculate QALY gained from intervention
IMPROVE: 30 day endpoints focus on mortality, short-term costs

- 613 randomised to endovascular strategy vs open repair
- At 30-days similar mortality & costs
- Did not recognise impact of quicker recovery on patient outcomes
By focusing on mortality we might miss something important..
IMPROVE 1 year: cost-effectiveness

- Mortality, cost up to 12 months
- Patient-reported outcomes
- Collected QoL 3, 12 months
- Patient questionnaire (EQ-5D)
### Endovascular strategy vs open repair, 3 month and 1 year QOL for survivors

<table>
<thead>
<tr>
<th></th>
<th>Endovascular strategy Mean</th>
<th>Open Repair Mean</th>
<th>Mean Difference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QOL 3 month</td>
<td>0.76</td>
<td>0.67</td>
<td>0.087 (0.017, 0.158)</td>
</tr>
<tr>
<td>QOL 1 year</td>
<td>0.77</td>
<td>0.71</td>
<td>0.068 (-0.004, 0.140)</td>
</tr>
</tbody>
</table>

QOL on scale anchored at 0 (death) and 1(perfect health)
Gain > 0.03 clinically significant
What is ‘difference in QOL of 0.09’?

<table>
<thead>
<tr>
<th>Health State</th>
<th>Endovascular strategy</th>
<th>Open Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>No problems</td>
<td>Some problems</td>
</tr>
<tr>
<td>Usual activities</td>
<td>No problems</td>
<td>Some problems</td>
</tr>
<tr>
<td>Self Care</td>
<td>No problems</td>
<td>Some problems</td>
</tr>
<tr>
<td>Pain, discomfort</td>
<td>Moderate pain or discomfort</td>
<td></td>
</tr>
<tr>
<td>Anxiety, depression</td>
<td>Moderately anxious or depressed</td>
<td></td>
</tr>
</tbody>
</table>
Endovascular strategy vs open repair, 1 year (n=613)

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<th>Endovascular strategy Mean</th>
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<th>Mean Difference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QALY</td>
<td>0.40</td>
<td>0.35</td>
<td>0.052 (-0.005, 0.108)</td>
</tr>
<tr>
<td>Cost (£)</td>
<td>16394</td>
<td>18723</td>
<td>-2329 (-5489, 922)</td>
</tr>
<tr>
<td>Net benefits (£)</td>
<td></td>
<td></td>
<td>3877 (253, 7408)</td>
</tr>
</tbody>
</table>

Net benefits, combined effect on QALYs and costs
Cost-effectiveness in wider context

- New intervention more costly
  - AAA screening for men
  - EVAR strategy vs open repair for ruptured AAA

- New intervention less QALYs
  - Cementless vs hybrid hip prostheses for osteoarthritis
  - Shorter antiviral regimens for cirrhotic patients with hepatitis C

- New intervention more QALYs

- New intervention less costly
Summary and future

- Reimbursement agencies require evidence on patient benefit
- Endovascular strategy gains in QOL, lower costs
- Future evaluations recognise likely trade-offs
  - New high cost technologies (Branch and fenestrated grafts)
  - AAA Screening programme for women
- Future push to targeted medicine
- Harness big observational data, alongside trials
- Slides and further details on [http://theta.lshtm.ac.uk/](http://theta.lshtm.ac.uk/)