Finding Good Therapy Studies

Pyramid of Evidence

- RCT
- Cohort
- c-c
- X-sect, etc…

Must evaluate for threats to validity
Number Needed To Treat (NNT)

- Inverse of the Absolute Risk Reduction
  - $\text{NNT} = \frac{1}{\text{ARR}}$

- $\text{ARR} = \text{Control Event Rate} - \text{Experimental Event Rate (CER-EER)}$
  - Absolute difference between untreated and treated
Streptokinase/ASA in Acute MI

- No Tx 5-wk mortality from acute MI 13.5%
- Tx mortality 8%
- $\text{ARR} = 0.135 - 0.08 = 0.055$
- $\text{NNT} = \frac{1}{0.055} = 18$ patients
- Need to treat 18 patients to prevent one death
Some NNTs

<table>
<thead>
<tr>
<th>Condition or disorder</th>
<th>Intervention</th>
<th>Events being prevented</th>
<th>Event Rates</th>
<th>Duration of follow-up</th>
<th>NNT to prevent one additional event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes (T2DM)⁴</td>
<td>Intensive insulin regimens</td>
<td>Diabetic neuropathy</td>
<td>Control Event Rate CER: 0.096, Experimental Event Rate EER: 0.028</td>
<td>6.5 years</td>
<td>15</td>
</tr>
<tr>
<td>Diabetes (NCDM)⁵</td>
<td>Intensive insulin regimens</td>
<td>Worse diabetic retinopathy, Nephropathy</td>
<td>Control Event Rate CER: 0.38, Experimental Event Rate EER: 0.13</td>
<td>6 years</td>
<td>4</td>
</tr>
<tr>
<td>Acute myocardial infarction⁶</td>
<td>Steptrokinase and Aspirin</td>
<td>Death of 5 weeks, Death at 2 years</td>
<td>Control Event Rate CER: 0.134, Experimental Event Rate EER: 0.081</td>
<td>3 weeks</td>
<td>19</td>
</tr>
<tr>
<td>Diabetes blood pressure 115–129 mm Hg⁷</td>
<td>Antihypertensive drugs</td>
<td>Death, stroke or myocardial infarction</td>
<td>Control Event Rate CER: 0.128, Experimental Event Rate EER: 0.0137</td>
<td>2 years</td>
<td>24</td>
</tr>
<tr>
<td>Diabetes blood pressure 90–109 mm Hg⁷</td>
<td>Antihypertensive drugs</td>
<td>Death, stroke or myocardial infarction</td>
<td>Control Event Rate CER: 0.045, Experimental Event Rate EER: 0.0467</td>
<td>3 years</td>
<td>3</td>
</tr>
<tr>
<td>Independent elderly people⁸,⁹</td>
<td>Comprehensive geriatric home assessment</td>
<td>Long-term nursing home admission</td>
<td>Control Event Rate CER: 0.10, Experimental Event Rate EER: 0.04</td>
<td>5.0 years</td>
<td>128</td>
</tr>
</tbody>
</table>

To find more examples, and to nominate additions to the database of NNTs, refer to this textbook’s Web Page at: http://www.jb.le.ac.uk/¹

⁵ Lancet 1996;341:445–53.
⁹ BMJ 1996;197.
Critically Appraised Topics

- Case Presentation
- Clinical Question
- Study / Search Criteria
- Search Results
- Evaluating The Evidence
- The Clinical Bottom Line