Where to Find Evidence

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The current National Institutes of Health (NIH) Roadmap for Medical Research includes 2 major research laboratories (bench and bedside) and 2 translational steps (T1 and T2). Historically, moving new medical discoveries into clinical practice (T2) has been haphazard, occurring largely through continuing medical education programs, pharmaceutical detailing, and guideline development. Proposed expansion of the NIH Roadmap (blue) includes an additional research laboratory (Practice-based Research) and translational step (T3) to improve incorporation of research discoveries into day-to-day clinical care. The research roadmap is a continuum, with overlap between sites of research and translational steps. The figure includes examples of the types of research common in each research laboratory and translational step. This map is not exhaustive; other important types of research that might be included are community-based participatory research, public health research, and health policy analysis.

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“It is surely a great criticism of our profession that we have not organised a critical summary, by specialty or subspecialty, adapted periodically, of all relevant randomised controlled trials.”

- Archie Cochrane 1971
Systematic reviews are a key component of the evidence base for making decisions and choices about health and social care.

Cochrane provides the world’s largest single collection of systematic reviews of the effects of healthcare interventions (6500 full reviews in June 2016).
Other high quality evidence sources:

- NICE
- NHS Evidence
- Centre for Reviews & Dissemination
- NHS EED
- Campbell Collaboration

http://www.thecochranelibrary.com/details/browseReviews/577889/Prevention.html
Cochrane Public Health Group: http://ph.cochrane.org/
Do not do

Waist circumference is not recommended as a routine measure of overweight or obesity but may be used to give additional information on the risk of developing other long-term health problems. Bioimpedance is not recommended as a substitute for BMI as a measure of general adiposity.

A dietary approach to weight loss alone is not recommended in children. It is essential that any dietary recommendations are part of a multicomponent intervention. The coprescribing of orlistat with other drugs aimed at weight reduction is not recommended.

Do not use bioimpedance as a substitute for BMI as a measure of general adiposity.

Do not use unduly restrictive and nutritionally unbalanced diets, because they are ineffective in the long term and can be harmful.

Do not routinely use very-low-calorie diets (800 kcal/day or less) to manage obesity (defined as BMI over 30).

Do not give orlistat to children for obesity unless prescribed by a multidisciplinary team with expertise in: - drug monitoring - psychological support - behavioural interventions - interventions to increase physical activity - interventions to improve diet.

The co-prescribing of orlistat with other drugs aimed at weight reduction is not recommended.
Clicking on the Adult Subpop and u18 Subpop buttons (Image 9) provides additional details on adults and under 18s, including:

- Number of people classified as Increasing and higher risk drinking (as per prevalence above).
- Number of children classified as drinking at over 4 units per week.
- Number of people classified as dependent drinking (above 50 units per week for men and over 35 units per week for women).

Finally, the Overview section provides a summary of the indicators described above for both adults and under 18s. Depending on which subpopulation button is clicked, the relevant population data is highlighted in orange.

Creating custom populations
The custom population function allows you to define the name of your area, and then input the size of the population manually. To create a custom population, click the option (Image 10) to select 'User defined data'.
Some healthcare interventions, no matter how well meaning, do more harm than good.

NICE Savings and Productivity website
www.nice.org.uk/savingsAndProductivity/collection

Journal article
Garner S, Docherty M, Somner J, Sharma T, Choudhury M, Clarke M, Littlejohns P.
Reducing ineffective practice: challenges in identifying low-value health care using Cochrane systematic reviews.
Journal of Health Services Research and Policy 2013;18:6-12
Key Databases

- Cochrane Library [http://www.cochrane.org/](http://www.cochrane.org/)
- Centre for Reviews and Dissemination [http://www.york.ac.uk/inst/crd/](http://www.york.ac.uk/inst/crd/)
- Trip Database [www.tripdatabase.com](http://www.tripdatabase.com)
- NHS Evidence [https://www.evidence.nhs.uk/](https://www.evidence.nhs.uk/)
Local Sources of Information

• Health Information On the Net Northern Ireland
  www.honni.qub.ac.uk

• Local Neighbourhoods http://www.ninis.nisra.gov.uk/

• Institute of Public Health in Ireland
  www.publichealth.ie

• Healthwell www.thehealthwell.info
… and an evidence base for the social sciences as well

“The United States and other modern nations should be ready for an experimental approach to social reform, an approach in which we try out new programs designed to cure specific problems, in which we learn whether or not these programs are effective, and in which we retain, imitate, modify or discard them on the basis of their effectiveness on the multiple imperfect criteria available.”

Donald T. Campbell 1969
... but the dangers of relying on single trials

From: Ritter et al.’s Campbell Review of the effectiveness of volunteer tutoring programmes
The Campbell Collaboration

- The Campbell Collaboration is a voluntary, non-profit, international research network that produces and disseminates systematic reviews of the effects of interventions in the fields of:
  - Education
  - Crime and justice
  - Social welfare
  - International development

- The Campbell Collaboration draws together researchers, policy-makers and practitioners from every continent:
  - Over 800 co-authors of Campbell systematic reviews
  - Over 150 peer reviewers for Campbell
  - Teams of editors, trainers and advisory boards
  - 14 international colloquia organised to date
Examples of Campbell Collaboration Reviews

Education:
• School-based interventions to reduce bullying and victimization
• Interventions to improve academic performance among students by increasing parental involvement
• Volunteer tutoring programmes to improve students’ academic performance

Social Welfare:
• The effectiveness of parenting programmes for improving psychosocial outcomes for teenage parents and their children
• The effects of cognitive-behavioural interventions for preventing youth gang involvement for children and young people
• The effects of interventions to improve the economic self-sufficiency and wellbeing of resettled refugees
Examples of Campbell Collaboration Reviews

Crime and Justice:
• The effects of closed circuit television surveillance on reducing crime
• The effects of motivational interviewing on reducing substance abuse
• The effectiveness of Neighbourhood Watch programmes in preventing crime

International Development:
• The effects of interventions to improve school enrolment of children in developing nations
• The effects of land property rights interventions on investment and agricultural productivity in developing countries
• The effects of interventions to reduce female genital mutilation in African countries
Quick Example: The Campbell “Scared Straight” Review

- Focus on programmes that involve organised visits to prison facilities by juvenile delinquents or children at risk of becoming delinquent.
- Designed to deter participants by giving them an insight into prison life and through interactions with adult inmates.
- 1979 television documentary on “Scared Straight” programme in New Jersey (USA) prison. Provided “evidence” that 16 of the 17 delinquents remained law-abiding for at least three months after attending the programme.
- Considerable media attention, replicated in over 30 jurisdictions nationwide. Similar programmes emerged in other countries (Australia, UK, Norway, Canada).
- 2002, Anthony Petrosino and colleagues published Campbell systematic review, and updated in 2013:
  - 9 randomised trials found (all USA; five unpublished)
  - Meta-analysis found that, on average, these interventions are harmful and actually increase the odds of offending by about 1.7 to 1.
Petrosino et al.'s “Scared Straight” Review

Random Effects Model Results

<table>
<thead>
<tr>
<th>Study name</th>
<th>Odds ratio</th>
<th>Lower limit</th>
<th>Upper limit</th>
<th>Z-Value</th>
<th>p-Value</th>
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<tbody>
<tr>
<td>Finckenauer (1982)</td>
<td>5.454</td>
<td>1.650</td>
<td>18.022</td>
<td>2.781</td>
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<tr>
<td>GERPDC (1979)</td>
<td>1.513</td>
<td>0.607</td>
<td>3.772</td>
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<td>0.374</td>
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<td>Lewis (1983)</td>
<td>2.092</td>
<td>0.860</td>
<td>5.090</td>
<td>1.627</td>
<td>0.104</td>
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<tr>
<td>Michigan DOC (1967)</td>
<td>3.750</td>
<td>1.110</td>
<td>12.669</td>
<td>2.128</td>
<td>0.033</td>
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<td>Orchowsky (1981)</td>
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<td>0.444</td>
<td>2.660</td>
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<td>0.855</td>
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<tr>
<td>Vreeland (1981)</td>
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<td>0.801</td>
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<td>Yarborough (1979)</td>
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<td>1.134</td>
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</tbody>
</table>

Effects of Scared Straight and other similar programs: Meta-analysis of first effect crime outcomes (Random Effects Analysis)
A National Campbell Centre for the UK and Ireland, to be hosted by the Centre for Evidence and Social Innovation at Queen’s (www.qub.ac.uk/cesi) - more information in September.