

Meta-analysis for systematic reviews (2 Days)

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| Duration | 2 days |
| Skill level | Advanced |
| Target Audience | Healthcare professionals, academics, researchers, decision makers and Evidence Synthesis Ireland fellows with experience in the principles of evidence synthesis and who would like to develop or advance their meta-analysis knowledge and skills. |
| Prerequisites | Participants will have a sound understanding and experience of the steps in a systematic review leading up to meta-analysis (e.g., question formulation, search methodology, data extraction and management and risk of bias assessment). |
| Date | June 25 th & 26 th 2019 |
| Venue | AMBG065, Psychology Building, NUI Galway |

Background

Health care policy and practice decisions should be based on a synthesis of the global body of evidence rather than relying on individual studies. Cochrane Ireland and Evidence Synthesis Ireland promote evidence based healthcare policy and practice by supporting high quality, relevant systematic reviews and other synthesised research evidence.

Aim

This workshop provides reviewers with experience in the principles of evidence synthesis with the opportunity to develop or advance their meta-analysis knowledge and skills. It offers an insight into more complex issues in meta-analysis.

Learning outcomes

In this course participants will be enabled to:

- Understand factors influencing decisions when to perform a meta-analysis
- Understand effect measures in continuous and dichotomous data
- Understand fixed and random-effects models for meta-analysis
- Understand subgroup and sensitivity analysis and how to perform and report
- Understand publication bias and how to perform and report
- Understand more complex unit of analysis issues including effects for more than one subgroup, studies that report results for more than one outcome, studies that report results at more than one time-point and multi-arm trials and cluster randomised trials
- Be aware of common mistakes in meta-analysis

Teaching strategies

The workshop will consist of a mixture of short presentations, led by members of Evidence Synthesis Ireland, Cochrane Ireland and Cochrane UK teaching faculty. It includes small group activities and plenary discussions, providing participants with the opportunity to develop and refine their protocol. The number of participants for the course is limited to 25.

Facilitators

Dr Chris Cates (Cochrane UK)

Dr Rebecca Fortescue (Cochrane Airways)

Prof. Declan Devane (Cochrane Ireland/Evidence Synthesis Ireland)

Course content/timetable

| Day 1 | | Faculty |
|-------------|---|---------|
| 08:30-09:00 | Registration and coffee | |
| 09:00 | Welcome, introduction of presenters and outline of presentations | DD |
| 09:15 | What is a meta-analysis and when should it be performed (and when not) (<i>the three PICOS</i>) | RF |
| 10.15 | Effect measures in dichotomous data | CC |
| 10.35 | Practical on effect measures in dichotomous data | ALL |
| 11.00 | Break | |
| 11.20 | Effect measures in continuous data inc SMD | CC |
| 11.40 | Practical on effect measures in continuous data | ALL |
| 12.00: | Fixed and random-effects models | CC |
| 12:30 | Lunch | |
| 13:15 | Exploring and interpreting heterogeneity (inc. subgroup analyses) | DD |
| 14:00 | Practical session on exploring and interpreting heterogeneity | DD |
| 14:45 | Discussion session (on any issues covered) | |
| 15:00 | Putting it together -Really getting to know the Forest Plot better | RF |
| 15:45 | Demonstrating RevMan forest plot options (e.g., display of event/non-event etc) | RF |
| 16.30 | Close | |

| Day 2 | | Faculty |
|-------------|---|---------|
| 08:30-09:00 | Registration and coffee | |
| 09:00 | Welcome back outline of presentations | DD |
| 09:15 | Questions from Day 1 | All |
| 10.15 | Subgroup analyses [inc. how to report SGAs and avoid common pitfalls] | DD |
| 11.00 | Break | |
| 11:15 | Sensitivity analyses (inc. practical) | CC |
| 12.00: | Discussion | |
| 12:45 | Lunch | |
| 13:30 | Publication bias | RF |
| 14:00 | More complex issues 1 [cluster randomised trials, cross-over trials, multi-arm trials) | CC |
| 14:45 | Break | |
| 15:00 | More complex issues 2 [studies that report results at more than one time-point, time-to-event data] | CC |
| 15:45 | Common errors in meta-analyses | DD |

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| 16.30 | Close | |
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