

Systematic Reviews and Evidence Synthesis

Module outline

A systematic review is a review of literature that adopts explicit and standardised methods for the qualitative and quantitative synthesis of evidence to minimise potential biases and improve the trustworthiness of its findings. The methodology has been widely adopted, e.g. by the Cochrane Collaboration, for summarising best available evidence to support health care decision-making (including health technology assessment) and to guide future research. The main aims of the module are to provide students with an understanding of contemporaneous methods used in systematic reviewing and evidence synthesis and the rationale behind these methods, and to equip students with the fundamental skills required to carry out a systematic review relating to a range of health care related questions (for example, effectiveness, diagnostic accuracy and qualitative research questions). This module covers the key methodological stages of undertaking a systematic review, namely how to (i) formulate a structured review question, (ii) search for most relevant and reliable literature, (iii) critically appraise and assess the risk of bias of different types of studies (e.g. randomised controlled trials, observational studies), (iv) synthesise the identified evidence either qualitatively or by meta-analysis, and (v) present the findings. Through a combination of lectures, practical exercises and hands-on computer sessions, this module takes students through the journey of planning and conducting a systematic review.

There will also be opportunities to undertake work in small groups throughout the module, culminating in an assessed group presentation on the last day of the module. This is an opportunity to apply concepts learned during the two weeks, and will enable students to revise and extend their knowledge and skills.

Module Outcomes

By the end of the module you should be able to:

- Describe the key steps in undertaking a systematic review and evidence synthesis
- Demonstrate an understanding of the rationale behind the steps and methods for undertaking a systematic review
- Formulate a clear research question and systematically search relevant repositories of evidence
- Understand the similarities and differences in the approaches to synthesising different types of evidence (e.g. clinical effectiveness, diagnostic test accuracy, qualitative evidence)
- Understand how to undertake a meta-analysis of a group of clinical trials and related analyses such as indirect and mixed treatment comparisons
- Critically appraise different types of evidence using suitable tools
- Use appropriate software to carry out meta-analysis and interpret the results
- Understand the importance and the process of developing a plan for carrying out a systematic review

Credits

20 credits

Module Attendance Required

2 block weeks of teaching

Module Dates

2014-15

8 - 12 December 2014 and 12 - 16 January 2015

Assessment

A group presentation based on group work undertaken during the module (15%), and one written examination of 2-hour duration (85%)

Module Coordinators

David Moore ([/staff/profiles/haps/PublicHealthEpidemiologyBiostatistics/moore-david.aspx](http://staff/profiles/haps/PublicHealthEpidemiologyBiostatistics/moore-david.aspx)) and **Ms Janine Dretzke** ([/staff/profiles/haps/PublicHealthEpidemiologyBiostatistics/dretzke-janine.aspx](http://staff/profiles/haps/PublicHealthEpidemiologyBiostatistics/dretzke-janine.aspx))

Stand Alone Course

This module can be taken as a standalone course. In the past, course participants have included people working in HTA organisations, health care or the pharmaceutical industry, and Masters and PhD students who intend to undertake a systematic review.

To apply, please contact the Programme Coordinator on 0121 414 7577 or at mph@contacts.bham.ac.uk (<mailto:mph@contacts.bham.ac.uk>). All applications must be received a minimum of one month before the start date of the module. For further information on fees and entry requirements, please contact the Programme Coordinator. The module can be taken as assessed or non assessed.

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(<http://www.birmingham.ac.uk/news/latest/2013/09/20-sep-Birmingham-announced-as-University-of-the-Year.aspx>)

Course fact file

Type of Course: Continuing professional development, module

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