Report on SEES subgroup methods of working and recommendations

For discussion at the COT meeting March 2018

Membership: Anna Hansell (Chair), Diane Benford, Derek Bodey, Alan Boobis, Lily Buckley, Janet Cade, Britta Gadeberg, David Lovell, Neil Pearce, Julian Peto, Frances Pollitt, Claire Potter, Lesley Rushton, Heather Walton

The Synthesising Epidemiology Evidence Subgroup (SEES) of the Committee on Toxicity of chemicals in foods, consumer products and the environment (COT) and Committee on Carcinogenicity (COC) was set up in 2015 to review and document current practice, given recent international and national development of methods by which evidence is synthesised. It also aimed to support COT and COC in following the code of practice for UK scientific advisory committees (Government Office for Science, 2011[1]), addressing in particular that committees "should aim at having a transparent and structured framework to examine, debate and explain the nature of the risk" (paragraph 82). These include transparency of methods in reporting, Interests (and conflicts of interests) declared and that uncertainty in the findings is expressed.

Methods of working

The subgroup was chosen to represent epidemiological, toxicological and secretariat expertise from COT and COC, with a representative from the Committee of the Medical Effects of Air Pollution (COMEAP). Members brought also experience from other bodies including Committee on Medicines, European Food Safety Authority (EFSA), the World Health Organization (WHO) and workshop discussions at conferences e.g. at International Society for Environmental Epidemiology annual conferences. The subgroup met on three occasions in 2015 and 2016 to scope the issue, review past practice and make recommendations including for any future work needed, with a review of document in February 2017. It was agreed that the output would be a short summary/overview document with an overview of current approaches. The agreed aims and terms of reference of the group are below. The agendas, minutes and membership list are available at http://cot.food.gov.uk/cotwg/cot-coc-epi-sub-group .

The guidance document will be formally reviewed by Members of the COT and COC and amended as necessary before adoption. The Committee on Mutagenicity (a sister committee of the COT and COC), and the Committee on the Medical Effects of Air Pollutants (COMEAP) will be kept informed of the progress of the guidance document and invited to comment at a later stage.

[1] Government Office for Science (2011) 'Code of Practice for Scientific Advisory Committees' London, UK Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/278498/11-1382-code-of-practice-scientific-advisory-committees.pdf

Aims & Objectives

Aim: To review the approaches to synthesising epidemiological evidence that are used by COT and COC in chemical risk assessments and to make recommendations for COT/COC guidance.
Objectives:

- To review recent use of epidemiological evidence in committee statements and reports
- To provide an overview of initiatives and guidance of other groups of relevance to this topic
- To develop guidance improve transparency of reporting and evaluation by COT and COC of epidemiological evidence, taking into account the complexity and diversity of risk assessments conducted by COT and COC and the urgency of the work.

Terms of reference

- To provide guidance that can be used by expert advisory committees for synthesis of epidemiological evidence, for example for:
    - Interpreting systematic reviews involving epidemiological studies
    - Conduct of reviews and systematic reviews of epidemiological studies
    - Synthesis of evidence not involving systematic reviews
- To review recent practice by expert advisory committees for synthesis of epidemiological evidence, with a focus on systematic reviews
- To identify key points of current best practice methodologies used in systematic review and meta-analysis
- To identify and make recommendations for areas requiring further work

Overview of guidance document

This document starts with an introduction and key concepts and review of past COC/COT work involving synthesis of epidemiological evidence. Key structured guidance systems to conduct synthesis, which epidemiologists serving scientific advisory committees might be expected to be aware of are discussed. Particular elements of systematic review are then considered including scoring systems, assessment of bias, quantitative synthesis, expressing uncertainty in the findings, assessment of conflicts of interest and combination with toxicological evidence. Finally, guidance is provided for scoping, limited literature review, evaluating existing systematic review, conducting a systematic review and conducting quantitative synthesis, reporting.

Some familiarity with epidemiological study design and terms was assumed throughout. A COC guidance document is planned which could cover more basic explanation of terms and concepts and/or be combined with the SEES document.

SEES subgroup recommendations

Methods for synthesis of epidemiological evidence for risk assessment and policy

- Best practice guidance is incorporated in section 6 of the main Report of the SEES and should be considered for adoption by Committees
- The SEES does not recommend funding development of a new UK-specific system to synthesise epidemiological evidence, given the current availability of a number of systems to evaluate evidence ongoing international-based work such as that within the Cochrane collaboration.
- A standing item should be included on horizon scanning papers to check on developments in systems and guidelines for epidemiological evidence synthesis such as in the Cochrane collaboration and the RISK21 integrated evaluation strategy.
- A designated individual representing government advisory committees should have continued contact with international methodological initiatives (e.g. the Cochrane collaboration policy group, RISK21 group) and that resources are made available for this, including attendance at key meetings.

Assisting public transparency

- Past reviews should be continue to be made readily accessible to committees, preferably on committee websites, with particular attention paid during website migration.
- Publication of reviews in a peer-review journal or other accessibility should be encouraged.
- Committees should also consider discussion with an appropriate journal re overview reporting of committee work.
- If significant delays are experienced in journal publication, a summary of the review should be available for publishing on the relevant Committee website.
- Potential conflicts of interests (COIs) need to be checked regularly and committee website listings need to be kept up to date. (This is currently standard practice and no changes are proposed.)

Training

- Committee secretariat should (continue to) receive training in epidemiological methods including systematic review
- A one day workshop on synthesis of epidemiological and toxicological evidence should be considered.

Further work

- The committee recommends further work on combining epidemiological and toxicological evidence and understanding of cross-design synthesis studies.