Cochrane Statistical Methods Training Course

4 – 5th March 2010, Cardiff, UK

Minutes and actions from the session:

"Statistical contribution to CRGs"

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This session began with a brief overview by Georgia Salanti of the survey of CRG statisticians which took place in June 2009. This was followed by discussion on each of the following topics: "How far should we go with refereeing?", "Common statistical issues in refereeing", "Help/advice/training needs of CRG statisticians", and "How to give feedback to review authors". This session was attended by approximately 37 attendees.

1. Results of survey to CRG statisticians

Georgia Salanti presented results from the survey of CRG statisticians which aimed to assess the statistical issues commonly encountered and to identify areas where the statisticians would value more discussion, training, and research. The survey was carried out in June 2009. From data in Archie and personal communication it appears that 75 statisticians provide support to 43 of the 52 CRGs. All 75 statisticians were approached to take part in the survey; only 19 replied (25%). The survey asked about statistical approaches used as well issues related to the reviewing process. Key points from the latter follow:

- Process of reviewing:
    - The median time spent per week reviewing was 6.5 hours (range 1 – 20).
    - 4 check the data either in a sample or sometimes.
    - 9 don't check the data unless they are a co-author.

    - Recompensing occurs through different means: 4 are paid, 7 reported being co-authors/collaborations, 6 receive funding to attend events (such as the Colloquia).

- Strategies suggested to attract statisticians:
    - Payment of their time.
    - Payment for Colloquia and courses.
    - Co-authoring.
    - Editorial board membership.
    - Convince them that it is important.
    - Capture them young.
    - Being valued by their CRGs.

2. How far should we go with refereeing?

Key points from the discussion on how far we should go with refereeing were:

1. There is variation between CRGs regarding requirements of statistical support for reviews. Some CRGs require the review team to include a statistician. For one of these CRGs, at the title registration stage, they will request to see the included statistician's CV. If the review team is not able to involve a statistician, the title will not be registered. Other CRGs require that the review team has access to statistical support (4 CRGs).
2. Discussion took place on the issue of whether there should be more standard text in protocols. There was concern from a couple of statisticians regarding this suggestion. They felt that it was better for the review authors to attempt to write the text since when this occurs, it is likely to be more evident if the authors do not understand the methods. If problems in understanding are not detected at the protocol stage, then this may result in much greater problems at the review stage.
3. There was some disagreement about statisticians' role in the peer review process. One felt that statisticians need to negotiate with

CRGs about their peer review role, to ensure that it is limited to peer review. We don't currently have clarity of the role of statistical peer reviewers. Another felt that it is the responsibility of the CRG to train reviews. One did not agree with this view and felt that this type of view needed to change. It was stated that statisticians do not have time to go back to the trial papers, except in the case of CRGs which receive specific funding for this task.

4. Some of the CRGs represented at the meeting had multiple statistical editors, and some received funding for statistical support.

5. The question was posed as to whether it should be a requirement that review teams have a methodologist/statistician. Title registration forms which do not have a methodologist/statistician could be turned down. Although it is difficult to assess whether someone is a real methodologist/statistician without a CV.

3. Common statistical issues in refereeing

Key points from the discussion on common statistical issues in refereeing were:

1. Missing papers: it was felt that papers missed in the search strategy were the responsibility of the trial search co-ordinator, not the statistician.

2. Concern was raised over the results of recent empirical research which has estimated that 7% of trials included in Cochrane reviews had outcome data fully reported in the publication, but this was not included in the Cochrane reviews (Kirkham JJ, Dwan KM, Altman DG, Gamble C, Dodd S, Smyth R, Williamson PR: The impact of outcome reporting bias in randomised controlled trials on a cohort of systematic reviews. BMJ 2010, 340:c365). It was suggested that this may be a problem of training where reviewers are often taught that sample sizes, means, and SDs are required for entering data into RevMan. It was suggested that it might be useful for statistical reviewers at the protocol stage to ask review authors to state in the protocol that they will extract data from CIs, p-values, etc.

3. There was discussion about whether it would be useful for the SMG to collect checklists used by statisticians in CRGs to assess protocols and reviews. There was general agreement that this would be useful with the aim of creating a general checklist for statisticians. This could form part of the training materials for statisticians, which would be made available on the SMG website.

4. Some other issues raised included: (i) when a meta-analysis has only two trials, for example, it is common for review authors to state "results from the meta-analysis indicated …", when it would be better to state "results from two studies indicated …", (ii) review authors commonly vote count in abstracts, (iii) reviews should not use quality scores, and (iv) because of concerns of multiple testing, it was suggested that the number of outcomes per review should be reduced.

5. Another issue which was raised was the problem of the time between when the protocol is published and the review is completed. During this time, the Collaboration may have adopted major methodology changes. Some review authors are not prepared to adopt these changes; they will only do what they have specified in their protocol, even although this may be outdated.

Action: Send an email to the SMG list asking for checklists used to assess protocols and reviews. Ask for a group of volunteers to review the checklists and create combined checklist. Once this is finalised it should be posted on the SMG and shared with training teams.

4. Help / advice / training needs of CRG statisticians

Key points from the discussion on help/advice/training needs were:

1. There was some discussion over the network of CRG statisticians which will be set up by the SMG. This network will include one or more persons with an interest in statistics within each of the CRGs. The purpose of which is to allow easy communication between the CRG statisticians and groups such as HAG and MARS. It was suggested that the SMG list may currently fulfil the role of the CRG network if the

membership covers those in CRGs with an interest in statistics. However, it was suggested that it may be better to have a separate network since the purpose of the CRG network and the SMG list are different. For example, there are many on the SMG list who do not have a role of providing direct editorial support to CRGs.

2. The question was asked as to whether it was mandatory for each CRG to have a statistician. Currently there is no formal agreement, but there are current discussions taking place regarding this in the Collaboration.
3. Some discussion took place about whether we need a formal mentoring process. One statistician responded that a successful approach for him has been to bring along new colleagues in his educational institution; not necessarily through the Collaboration.
4. A set of exemplar reviews and protocols are being created/collected as an additional resource to the Handbook for review authors.
5. It was also suggested that it would be helpful to have a webpage for statisticians which contained details of major changes to statistical advice in revised versions of the Handbook.

5. How to give feedback to review authors

Key points from the discussion on providing feedback to review authors were:

1. The question was posed as to whether we should be able to reject protocols/reviews. One stated that we should be able to state that the protocol/review is not publishable. Another stated that it is difficult to provide constructive feedback when the review is so poor. One review group has a screening process where the managing editor completes a checklist for the review, and if it passes the checklist, the review is then peer reviewed by the group's statistician.
2. Some discussion took place about re-review. Approximately 6 of the statisticians indicated that they re-reviewed reviews. Some felt that all those involved in the editorial process of a review needed to be satisfied that appropriate changes were made. It was suggested that

when there are disagreements about changes to be made, it is the editor's role to make final decisions. For diagnostic test accuracy reviews, the reviews are signed off by the CRG and the DTA editorial group. It was suggested that it would be good if this type of process also occurred for Cochrane reviews of interventions, where the review should be signed off by a statistician.

6. AOB

It was generally felt that a meeting such as this provided a good support forum for statisticians within the Collaboration.