

Work Performed by the US Cochrane Center in the Development and Management of CENTRAL

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1. Background

The US Cochrane Center (USCC) is critically involved in developing and maintaining CENTRAL through its role as the coordinating and processing center for the Cochrane Collaboration's hand and electronic searching activities. USCC staff members oversee the organization of Cochrane entities' hand and electronic searching activities and process the citations to reports of controlled trials identified by these searching activities into a format suitable for publication on *The Cochrane Library*. USCC staff also directly performs electronic searching at the USCC offices. Through USCC's collaboration with the US National Library of Medicine (NLM), the Center is able to ensure that 'hand search results' included in MEDLINE are quality checked by USCC staff, and submitted for 'retagging' in MEDLINE with the appropriate MEDLINE Publication Type code (i.e., RANDOMIZED CONTROLLED TRIAL or CONTROLLED CLINICAL TRIAL). These 'retagged' MEDLINE records are subsequently downloaded into CENTRAL and provide an accessible and informative basis for searching, as they are indexed and include abstracts. This benefits reviewers, coordinators and others within the Cochrane Collaboration who search CENTRAL to identify trial reports, as well as those outside the Collaboration.

2. USCC's overall coordination of the Collaboration's hand search activities

2.1 Assisting Trials Search Coordinators (TSCs) through maintenance of the TSCs E-mail discussion list and production of training workshops

The USCC plays an important role in assisting Trials Search Coordinators (TSCs), both by maintaining a TSCs E-mail discussion list, and by conducting training workshops. Through the TSCs E-mail discussion list, TSCs can post questions or announcements on a wide range of topics and through this medium newer TSCs can learn from more knowledgeable and experienced TSCs. Recent list postings have included information on searching CENTRAL, importing references in and out of CENTRAL, searching MEDLINE, developing and maintaining a Specialized Register, using bibliographic database software (e.g., ProCite, Reference Manager) effectively, and medical informatics conferences registration and programs.

Starting in May 1999, USCC staff began contacting each Cochrane entity to confirm that each entity that searches journals or transfers results of journal searches for CENTRAL is represented on the TSCs E-mail discussion list. Contacted entities were asked to provide the name of only one person, if possible the entity's TSC, as the individual to be subscribed to the list. Membership has been largely restricted to TSCs to minimize traffic flow on the list. However, in cases where an entity lacks a TSC, a Review Group Coordinator or other Group member such as a convenor may be subscribed to the list, and act as the Group's TSC representative.

USCC staff also participate in TSC training by conducting multiple workshops geared towards TSCs. At all Cochrane Colloquia representatives of the USCC lead workshops for hand searchers. USCC staff devotes many hours each week responding to questions from TSCs. Most questions relate to the development of Specialized Registers and hand search results databases,

and/or the transfer of these databases to the USCC.

2.2 Maintenance of the Master List of Journals Being Searched database

Overall coordination of the Cochrane Collaboration's hand search of the world's medical literature is managed by the USCC, which requires that Cochrane TSCs prospectively register all potential hand searches on the Master List of Journals Being Searched. A TSC who plans to organize the hand search of a healthcare journal must first submit to the USCC a completed Journal Hand Search Registration Form (available at www.cochrane.org/necc/frame.htm) for each journal to be searched. This Form requests bibliographic information about the journal, search information (e.g., which years will be searched), and contact information of the Trials Search Coordinator. The USCC staff must verify that the journal listed on the Journal Hand Search Registration Form has not already been registered by another Trials Search Coordinator, and must also confirm that the journal bibliographic information listed on the Form is correct. The verified information is then entered onto the Master List of Journals Being Searched database. This database, which is updated almost daily at the USCC, enables search progress to be recorded and monitored for each journal title and also serves to prevent any duplication of effort that might otherwise arise from journals being searched by more than one Group or individual. The Master List of Journals Being Searched database currently contains registered searches of over 1,700 journals and journal supplements. The USCC is in the process of updating the Master List database to accommodate registration of searches of conference proceedings.

Other tasks related to the USCC's coordination of Cochrane hand searching activities include: transferring responsibility for the organization of a search from one Cochrane Group to another (upon request); updating the years for which a journal search has been completed; and updating the journal bibliographic information as needed (e.g., ensuring that the most current name of the journal is listed in the Master List database). In addition, each year a Master List Update mailing is sent to all registered searchers. The purpose of the mailing is to seek updated information regarding journals being searched, years completed, and contact information for all searches registered on the Master List.

The Master List may be accessed at the USCC website (<http://www.cochrane.us>) and can be searched interactively or downloaded as Excel files that are updated monthly.

3. Processing Specialized Registers for CENTRAL

Specialized Registers are submitted quarterly as electronic files to the USCC for processing and inclusion in CENTRAL. These files are processed to conform to the standards and format specified by the CCAG, and subsequently submitted to the CENTRAL publisher for inclusion in *The Cochrane Library*. The following steps comprise this process.

- C Specialized Registers are submitted quarterly as electronic files to the USCC.
- C A Submission Form accompanies all Specialized Registers. If no Submission Form is received, submitters are asked to complete a Form and are directed to Appendix 3 of

- the *Guide for Submission of Specialized Registers to CENTRAL* found on the USCC website (www.cochrane.us).
- C Electronic files are submitted in a variety of formats (ProCite, EndNote, Reference Manager, or ASCII text file); those that are not already in ProCite are imported into a ProCite database for further processing.
 - C The number of records in each file is verified by comparing the ProCite file contents with the number of records listed on the Submission Form.
 - C The number of workforms, templates within the Specialized Register created to organize various groupings of citations (e.g., journal articles, conference proceedings), is checked against the number of workform Submission Forms submitted to the USCC.
 - C The contents of each workform are reviewed to ensure that the fields approved by the CCAG are included, correctly completed, and are otherwise suitable for publication in *The Cochrane Library*. Questions regarding the content of a particular field or citation are relayed to the submitter by USCC staff and the two work together to correct any problems.
 - C A Specialized Register code is added to each record. This coding allows entities to search *The Cochrane Library* and recreate their Specialized Registers.
 - C For each processed workform, an output style is created, which tags and exports the citation information stipulated by the CCAG for inclusion in CENTRAL.
 - C Workform files are exported as one ASCII text file and named with the Specialized Register code (SR-code) of the entity submitting.
 - C A log is maintained at USCC which provides the processing details for each Specialized Register submitted. It includes notes on the files received and processing difficulties encountered.
 - C USCC staff contacts submitters individually to discuss ways to expedite processing of that entity's Specialized Register when problems are encountered.

The USCC staff repeats above steps for each Specialized Register received.

If only new and modified records are being submitted, the USCC staff follows the instructions above, and in addition:

- Merges electronically previously submitted records with new and modified records.
- Performs quality control procedures at the USCC:
 1. Verifies the number of records in the merged file by comparing the total numbers in the register in the previous submission file plus those in the newly submitted one, which contains only new and modified records.
 2. Checks for possible duplicates, and delete them, when applicable.
 3. After submitting registers to the CENTRAL publisher, or their contractor, as appropriate (referred to herein as “the Publisher”), USCC receives their feedback which includes total numbers to be published, and these are being checked against the numbers processed at the USCC.
 4. Checks numbers published on the Cochrane Library, for every entity submitting only new and modified records quarterly.

RGCs/TSCs are encouraged to perform similar quality checks to ensure all submitted records were published.

Transfer of the exported ASCII text files created by the USCC staff to “the Publisher” involves the following steps:

- C Files are submitted to “the Publisher” each quarter (every three months) for publication in CENTRAL. Transfer to “the Publisher” involves uploading all of the ASCII files to “the Publisher’s” FTP site.
- C An E-mail is sent to the contact person at “the Publisher’s”, notifying him that the Specialized Registers are processed and have been posted to “the Publisher’s” FTP.
- C A log sheet detailing Specialized Registers submitted and the number of records in each Specialized Register is sent with the E-mail notification that the processed files are available on the USCC FTP site.

4. Processing hand search results for CENTRAL

TSCs coordinate page-by-page hand search of the world’s medical literature for reports of randomized controlled trials and controlled clinical trials. All identified trial reports are compiled in an electronic bibliographic database of citations that is forwarded to the USCC for inclusion in CENTRAL. Processing the hand search results files submitted by Cochrane entities includes the following steps:

- Log submission of all packages received, recording the following preliminary information: the name and Cochrane entity of the person submitting the file, the date submitted, the method of transfer, and the availability or absence of a Submission Form and an

electronic database of citations.

- Check electronic files to ascertain bibliographic software used (e.g., ProCite, Reference Manager).
- Import electronic files submitted into a ProCite database if they were not submitted in ProCite format, and confirm that all essential fields in the original file have transferred correctly to the ProCite database.
- Convert each submitted file into a standardized format, in which all fields contain similar field contents. For cases in which a single submission contains multiple files, the multiple files must be combined into one file.
- Ensure that the contents of the original file, as indicated on the sender's Submission Form, (e.g., number of citations, number of RCTs, number of CCTs), corresponds to the contents of the electronic database submitted. Resolve any discrepancies by contacting the individual who submitted the file.
- Download from MEDLINE all indexed records that have been hand entered or incompletely downloaded by the sender so that these records may be used for the MEDLINE Retagging Project.
- Add to all standardized files an internal code that indicates the entity that submitted the record. This code is an abbreviation of the name of the entity followed by the submission number assigned in chronological order (e.g., UKCC282) and is stored in field 12 of the ProCite journal long form workform.
- Copy all standardized submitted files into a single large ProCite database. Any duplicates within this merged database are deleted, and the earlier citation submitted is retained. Complete log sheet.
- Merge database containing hand search results submissions from the previous quarter with database containing all other hand search results submitted since September 1998.
- Export as a text file the single standardized ProCite database that combines all hand search results using an export style, tags, and file name that have been agreed upon by the CCAG.
- Post exported text file on "the Publisher's" FTP site, and send an E-mail to "the Publisher" to notify them that the file is ready for their retrieval.
- Complete a log sheet that indicates the submission packages received by USCC that were included within each merged file, as well as the date of transfer and method of transfer of each merged file to "the Publisher".

- Make all logs completed available through the TSCs E-mail discussion list.

5. The role of the MEDLINE Retagging Project in developing CENTRAL

The quality of CENTRAL depends on a user-friendly indexing system and the presence of report abstracts. Both of these features are available in CENTRAL because, where possible, citations are downloaded from MEDLINE. That is, all citations to reports of controlled trials that are indexed as Publication Type RANDOMIZED CONTROLLED TRIAL or CONTROLLED CLINICAL TRIAL in the NLM's MEDLINE database are downloaded directly to CENTRAL. Reports of controlled trials in MEDLINE are indexed using two mechanisms: (1) indexers at NLM index all citations in MEDLINE, including controlled trials, and (2) Cochrane collaborators contribute the controlled trials they have identified and these are sent to NLM by the USCC for 'retagging' as RANDOMIZED CONTROLLED TRIAL (Publication Type) or CONTROLLED CLINICAL TRIAL (Publication Type).

5.1 MEDLINE retagging process

5.1.1 Retagging hand search results

All MEDLINE-included hand search results processed for CENTRAL are also processed for MEDLINE retagging and eventually assigned a RANDOMIZED CONTROLLED TRIAL or CONTROLLED CLINICAL TRIAL Publication Type code in MEDLINE. In the future, the CCAG may also develop plans for using records contained within Review Groups' Specialized Registers for the MEDLINE Retagging Project.

A sample of each Group of citations submitted to the USCC is quality checked to ensure that the corresponding reports adhere to the Cochrane trial eligibility criteria. The citations to the reports that pass the quality check are forwarded to the NLM for the MEDLINE Retagging Project. After they have been 'retagged' by the NLM, these MEDLINE citations may be downloaded from MEDLINE and used as core building blocks for the development of CENTRAL.

5.1.2 Retagging results of electronic searches

The UKCC and USCC coordinate an electronic search of MEDLINE that further ensures that all controlled trials on MEDLINE are tagged with either the RANDOMIZED CONTROLLED TRIAL or CONTROLLED CLINICAL TRIAL Publication Type code in MEDLINE. Through the efforts of the New England Cochrane Center (1966-1984; 1998-2000) and the UKCC (1985-1993; 1994-1997), a comprehensive search of MEDLINE 1966-2000 has now been completed. The USCC plans to search MEDLINE prospectively in the future.

Results retrieved from electronic searches of MEDLINE are downloaded into ProCite databases, separated as to the phase of the search. The full MEDLINE citations are exported from these ProCite databases in the form of textual 'scan sheets.' On these scan sheets, all instances of the words PLACEBO, RANDOM and BLIND are bolded and capitalized to assist

the trained search teams who work at the USCC to review and classify the citations as RCT, CCT or neither. Once the citations on the 'scan sheets' have been assigned a classification code by the search teams, these classification codes are entered into the ProCite databases. Those citations coded as RCTs or CCTs are forwarded, together with all citations identified through hand searches, to "the Publisher so that they can be included in the next quarterly release of *The Cochrane Library*. These citations are also forwarded, once yearly, to the NLM for retagging in accordance with NLM guidelines.

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