Knowledge Synthesis Process Management

Develop methods that can be used to evaluate progress to and through the research synthesis process

Description:

One of the major tasks in the translation of research to practice and ultimately to health impacts is the synthesis of results generated through research as reflected in publications of individual studies into knowledge that can be used by biomedical practitioners and the public as a whole. In the past twenty years we have seen the rise of a number of mechanisms for accomplishing such work, including meta-analyses, research syntheses and the development of clinical practice guidelines. Increasingly the NIH recognizes that these synthetic methods are a critical phase of the translational process. Since a major purpose of the translational research endeavor is to speed the movement of discoveries to practice, the role that is played by synthesis methods, and the time that it takes for them to accomplish them, is a critical barrier to effective translation. The purpose of this pilot study is to develop methods that can be used to evaluate progress to and through the research synthesis process. The initial pilot will concentrate on the most developed of the three methods, meta-analysis, and will work with the oldest and best known of the meta-analysis developers, The Cochrane Collaboration. Each "Cochrane Report" involves a comprehensive review by a panel of experts of the research related to a specifically defined medical intervention. The review includes a statistical analysis that aggregates treatment effect sizes across similar studies and attempts to estimate general effectiveness. This pilot will investigate the feasibility of estimating time to inclusion of publications in such meta-analyses. Each Cochrane Report includes a bibliography of the studies that were included in the meta-analysis (as well as of the ones that were considered and excluded). This pilot will look at the time (in years) from the date of each publication to the publication of the meta-analysis for a systematic sample of Cochrane Reports in a variety of topical areas. For each report we examine the distribution of durations and will calculate the mean, median and standard deviations. A major purpose of this pilot will be to explore different methods for pulling data from the reports and to estimate the time and cost of doing so. This pilot study will provide preliminary estimates of the average time to inclusion in a meta-analysis and will act as a foundation for subsequent research in this critically important topic for translational research, including potential studies of research syntheses and guideline development, and the incorporation of bibliometric and network analytic methods for assessing the evolution of research into the synthesis phase of translation.

Project Team

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Action Items

- Use the Cochrane Reviews for the pilot. http://www.cochrane.org/reviews/clibintro.htm
- Comparative Effectiveness Reviews from AHRQ - assess these for their potential use, possibly use the ones already produced for comparison with Cochrane.
- Role of Cochrane Central Trials Database in this process (and how the database 'grows').
- Develop an understanding of how the reviews are created, and what variability might exist between reviews. http://www.cochrane.org/rev revisestruc.htm
- Literature Review - Systematic Reviews, Comparative Effectiveness Research/Reviews, and Cochrane Collaboration.
- Create the outline of the research protocol.
- Determine criteria for inclusion of a particular review, and citation elements to retrieve.
- Select a sample of reviews. Difference of initial reviews to re-reviews.
- Extract the publication lists from each review (work with Cochrane to get these data?), potential for ISI to extract publications
- Create a clean dataset that includes the time (in years) from the date of each publication to the date of publication of the review.
- Consider including other temporal dimensions (date submitted, etc.) for analysis.
- Compile and post dataset in Access database.
- Produce descriptive statistics for the dataset (mean, median and standard deviations for the time from publication to review)
- Explore alternate methods for extracting the publication data from the reviews, e.g. possibilities for automation, working with the vendor.
- Complete the protocol.
- Produce estimates for the time and cost of each method.

AS POSSIBLE
• Explore ways of describing research in various Cochrane subjects in general (are there periods of more or less research that might affect the citation analysis of the Reviews?).
• Explore possibility of extracting more data from other databases, e.g. ISI and PubMed.

Project-specific resources

Description & Assessment of Various Systematic Reviews - Draft 1


Examples of research protocols for CTSC studies:

IRB Metrics Protocol

CTSA Contracts Pilot Study Protocol

Some examples of major sources/databases of meta-analyses, syntheses, and guidelines (see also ideas from the 1/26/09 meeting):

- The Cochrane Collaboration (meta-analyses and syntheses)
- The Community Guide (meta-analyses and syntheses)
- Guide to Clinical Preventive Services (meta-analyses and syntheses)
- Cancer Control PLANET (meta-analyses and syntheses)
- The National Guideline Clearinghouse (guidelines)

Introduction to the Cochrane Library (useful powerpoint for understanding and manipulating the Cochrane Library; Also has information about other types of reviews)

Internal Project Documents

Draft Protocol as of July 15, 2009

Knowledge Synthesis Process Management Project Literature Review

Literature Review Summary Presentation

Ashley’s Literature Review References (short list)

Ashley’s Concluding Internship Notes