Systematic Literature Reviews Can Help With Regulatory Requirements and Internal Planning for Future Projects

Contributed by:
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Systematic literature reviews are a frequent component of work that CTI does for our clients. By definition, a systematic literature review uses clearly defined and reproducible methods to identify, select, and critically appraise relevant research, and to collect and analyze data from the studies that are included in the review. In other words, the relevant published literature to meet a specific need is identified and then a comprehensive review is done, using a structured procedure which follows best practices established by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and Meta-analysis of Observational Studies in Epidemiology (MOOSE) guidelines.1,2,3

Every systematic review starts with an objective, which, along with the methods, search strategy and plan for data extraction are specified in a literature review protocol. By developing the objective and the protocol with the client, we make sure that we understand the client’s need and customize the review so that it meets that need.

Systematic literature reviews are done for a wide variety of purposes that support work on a medication or device at any stage, from development to post market surveillance. Our team of experts at CTI complete more than fifty of these reviews annually to assist sponsors with fulfilling regulatory requirements, providing information for future development activities, and prioritizing programs internally. For reviews that CTI conducts, the most common purposes are described below:

Meta-analysis
Meta-analysis uses statistical methods to combine results from several studies to obtain a more reliable estimate of the effect measure and thus increase statistical power. This is done by calculating a weighted average of a common study result (e.g., odds ratio, p-value, etc) with weights related to the sample sizes of the individual studies. Meta-analytic methods can also be used to identify patterns among study results and any sources of disagreement. A systematic review of the published literature is a necessary first step of any meta-analysis. The review identifies, based on objective criteria e.g., study quality whether studies can be pooled before proceeding with a meta-analysis.

Cost-effectiveness analysis
Cost-effectiveness analyses are a commonly used method of weighing the benefit and cost of a novel intervention. A properly conducted systematic literature review can be used to identify the needed parameter values for a cost-effective analysis. This method is often a requirement of Health Technology Assessment bodies conducting a review of a novel treatment intervention. The systematic review ensures that the parameter estimates are not biased, and include all available data.

Clinical and economic outcomes
Systematic literature reviews can provide valuable insight into current treatment practices and product utilization for a disease
Information on clinical and economic outcomes can also be collected, allowing unmet medical needs and potential areas for improved efficacy to be identified and documented. An accurate understanding of the existing clinical situation allows companies to proceed with product development based on information, rather than guesses or assumptions.

**Safety reviews**

Systematic literature reviews are mandatory for safety submissions to regulatory agencies. During drug development, Development Safety Update Reports (DSURs) containing information about all published literature with any safety information are required annually. After approval, systematic literature reviews are then required for Periodic Safety Update Reports (PSURs). Companies that market medical devices in Europe are required to submit Clinical Expert Reports with systematic safety literature reviews every other year.

**Rare diseases**

When companies are developing treatments for rare diseases, systematic literature reviews can be a key element of that effort. Thorough reviews of the literature are fundamental to establish what is known about the prevalence, natural history, current standard of care, clinical endpoints and unmet medical need for a rare disease. Once completed, the literature review can serve as the basis for drug development planning, clinical study design, and important regulatory submissions, such as the Pre-IND meeting briefing package and orphan designation request.

Systematic literature reviews for all of these purposes are a regular part of the work that CTI consultants undertake for our clients. CTI experts would be happy to discuss how a literature review could help with your drug or device program - in development or on the market.


For more information:
www.ctifacts.com
513.598.9290

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**Upcoming Meeting Spotlight:**

**American Society for Clinical Pharmacology and Therapeutics Annual Meeting**

New Orleans, LA
March 3 - 7, 2015

ASCPT 2015
ANNUAL MEETING
MARCH 3-7, 2015 • HYATT REGENCY
NEW ORLEANS, LA

Stop by and visit us at Booth #318 throughout the meeting!

To schedule a meeting with us while we're here, please click here.

**CTI is Presenting a DIA Webinar:**

**Pricing, Economic, Reimbursement, Market Share (PERMS) Strategy: An Interactive Holistic Approach in Rare Diseases**

March 5, 2015 - 11:00a - 12:30p EST

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Cryptogenic Strokes and Recurrence rates in Relation to CHADS2 and CHADS2-VASC Risk Scores
   Poster based on a MarketScan analysis was recently presented at the International Stroke Conference in Nashville

Outcomes in Kidney Transplant Recipients From Older Living Donors
   Englund, Brian R.; Schechter, Matthew A.; Irish, William D.; Ravindra, Kadiyala V.; Vikraman, Deepak S.; Sanoff, Scott L.; Ellis, Matthew J.; Sudan, Debra L.; Patel, Uptal D.
   http://journals.lww.com/transplantjournal/Abstract/2015/02150/Outcomes_in_Kidney_Transplant_Recipients_From19.aspx

Switching from Multiple Daily Injections to CSII Pump Therapy: Insulin Expenditures in Type 2 Diabetes
   Guy David, PhD; Max Gill, MBA; Candace Gunnarsson, EdD; Jeff Shafiroff, PhD; and Steven Edelman, MD

Systemic Opioid Elimination After Implantation of an Intrathecal Drug Delivery System Significantly Reduced Health-Care Expenditures
   John A. Hatchway MD, David Caraway MD, PhD, Guy David PhD, Candace Gunnarsson EdD, MA, Jennifer Hinnenhal MPH, Amanda R. Ernst MBA and Michael Saulino MD, PhD

CTI received word that 2 abstracts were accepted and will present 2 posters at Heart Rhythm Society Meeting in May 2015.

Upcoming Meetings We Will be Attending
   American Society for Clinical Pharmacology and Therapeutics Annual Meeting
      New Orleans, LA - March 3 - 7

   Alliance for Regenerative Medicine 5th Annual Advanced Therapies Summit
      Paris, France - March 12

New Additions & Promotions at CTI
   Lucas Holcomb joins as Accountant
   Karin Köhler-Hansner, PhD joins as CRA Manager Europe
   Chelsea Rump joins as Clinical Research Assistant

Join our Team!!
   We’re looking for individuals to fill these positions:
   Clinical Research Associate
      (US, Germany, France, Australia, Brazil)
   Director, Health Outcomes
      Research (Cincinnati, OH)
   Manager, Proposal Development
**Systematic Literature Reviews**

When companies are developing treatments for rare diseases, the experts would be happy to discuss how a literature review could help with your drug or device program – in development or on the market.

Systematic literature reviews for all of these purposes are a regular requirement for important regulatory submissions, such as the Pre-IND meeting with regulatory agencies. Companies must be able to document the prevalence, natural history, current standard of care, clinical endpoints and unmet medical need for a therapy. Systematic reviews are a crucial part of the regulatory documentation for determining whether new products meet the gold standard of care established by the current standard of care.

An accurate understanding of the existing clinical literature is necessary for developing a strategy for research and development, including the design of new clinical trials. Systematic reviews of the published literature can be used to identify potential areas for improved efficacy to be identified and incorporate into new drug development programs internally.

To schedule a meeting with us at one of these, please [click here](#).

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<th>Event</th>
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<td>Study of Liver Diseases Industry Colloquium - Novel Targets and Therapies in Liver Disease Research Triangle Park, NC</td>
<td>March 20 - 21</td>
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<td>Click here for more information and to apply!</td>
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<td>Alliance for Regenerative Medicine 3rd Annual Regen Med Investor Day New York City, NY</td>
<td>March 25</td>
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**Promotions at CTI**

Chelsea Rump joins as Clinical Research Associate (US, Germany, France, Australia, Canada) and Lucas Holcomb joins as Accountant (Chicago, IL) for reviews that CTI conducts, the most recent one being for Delivery System Significantly Reduced Health-Care Expenditures-in-Type-2-Diabetes.

**New Additions & Consulting Services**

John A. Hatheway MD, David Caraway MD, PhD, Guy David PhD, Candace Petrow, MPH, Candace Petrow, MPH, and Narciso A. Laibinis, MD, PhD, join the CTI team.

**American Society for Clinical Pharmacology and Therapeutics (ASCP) and the 3rd Annual Regen Med Alliance for Regenerative Therapies Summit**

To schedule a meeting with us while we’re here, please [click here](#).

**Advanced Therapies Summit**

To schedule a meeting with us at Paris, France - March 12, please [click here](#).

**Clinical Expert Reports**

Clinical Expert Reports with systematic safety literature reviews are now available. Companies required for Periodic Safety Update Reports (PSURs). Companies are required to publish literature with any safety information are required to submit PSURs. CTI can help with your drug or device program – in development or on the market. CTI's methodology is often a requirement of Health Technology Assessment Analyses: The PRISMA Statement. CTI is proud to support the American Heart Association - Go Red Day. The goal is to raise awareness of the importance of heart health and to prevent heart attacks and stroke each year. National Wear Red Day with Go Red For Women on February 28th.

**Research Assistant**

Kathryn Wekselman, PhD, RN - Senior Director, Regulatory and Scientific Affairs.

**Planning for Future Projects**

For reviews that CTI conducts, the most recent one being Delivery System Significantly Reduced Health-Care Expenditures-in-Type-2-Diabetes.