CAsToR Briefing

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The Center for the Assessment of Tobacco Regulations (CAsToR) aims to provide evidence-based and expert-informed modeling of the behavioral and public health impacts of FDA tobacco rules or other regulatory actions, focusing on Impact Analysis, Behavior and Health Effects as Scientific Domains.

FAQs: Addressing common misconceptions about systematic evidence reviews of tobacco control interventions.

This brief addresses common questions and corrects misconceptions about the research methods used in systematic reviews, with a focus on standards used in Cochrane reviews on tobacco and nicotine.

We address the following FAQs:

- What are Cochrane systematic reviews?
- How do you assess intervention effectiveness?
- Why do you include tobacco industry-funded studies?
- How do you address conflicts of interest?
- How do you decide if studies and results are reliable?
- What's the advantage of a "living" review?
- Why do you disseminate inconclusive findings?

What are Cochrane systematic reviews?

Cochrane is a global, independent network of researchers, professionals, providers, patients, and other health stakeholders. It is recognized for evidence reviews that are independent from commercial and conflicted funding.

Public health relies on evidence reviews to summarize current findings, answer research inquiries, and assess the potential of interventions. Researchers who conduct systematic reviews summarize and evaluate evidence using well-documented, transparent, and reproducible methods.

Cochrane reviews synthesize studies to provide an overall picture of the existing empirical evidence. Where available, they often focus on randomized-controlled trials (RCT), which are considered the "gold standard" for assessing interventions.

How do systematic reviews examine the effectiveness of an intervention?

Effectiveness, like success, depends on the defined goals of the intervention. For smoking cessation, we're interested in interventions that have any effect on long-term abstinence from smoking. Absolute smoking cessation rates are often low. However, given the risks from smoking, even treatments with low cessation success chances can lead to improvements of population health if many people use them.

To compare the effectiveness of cessation interventions, systematic reviews ideally use direct comparisons across similar populations with similar intervention designs. It's inaccurate to compare absolute numbers across different systematic reviews, given differences in the review criteria, populations, and research protocols.

Why do we include tobacco industry-funded studies in evidence reviews?

Systematic reviews bring together all available evidence on a topic. Historically, the tobacco industry hid evidence about the health harms of cigarettes that, if shared earlier, would have been in the public interest.

Today, there are requirements for industries to report study results. However, industry-funded studies may be designed to be misleading. Rather than exclude them from reviews, it is important for experts to scrutinize them for three reasons:

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1. **Including industry-funded studies allows for greater transparency about the existing evidence base**, and allows public health researchers to better assess industry claims.
2. **The tobacco industry may be the first to research novel tobacco products.** We can highlight the source of funding and the need for independent research so that additional evidence arises from outside the tobacco industry.
3. **Including industry-funded studies allows us to check how they affect our conclusions.** Cochrane reviews assess the reliability and robustness of findings. Robustness checks test whether a study's conclusions change depending on the evidence included. We include/remove industry-funded studies to test what effect this has on the findings and conclusions. This is reported in the reviews.

How do you address conflicts of interest?

We take conflicts of interest very seriously as they harm the value and usefulness of our research. Cochrane has strict guidelines about who can author a review. If a review author is also an author on a study that is potentially eligible for inclusion in the review, that author cannot make decisions about study inclusion, extract data from their studies, or assess risk of bias for their studies. Review authors are also required to declare their funding sources on publications, research presentations, and public appearances. **Cochrane reviewers do not accept funding from tobacco or non-pharmaceutical nicotine industries.**

How do we decide if the studies and results are reliable?

For each study, we assess "risk of bias" by looking at the study design. We ask questions like, "Were groups picked at random, and if so, how? Did people in trials know which groups they were in? How were outcomes measured? How many people dropped out?" For each question, we determine if the risk of bias was low, high, or unclear. We use this judgement to assess how robust our results are by removing studies at high risk of bias in secondary analyses.

For the body of evidence, we use a system called GRADE to assess how confident we are in the main findings. GRADE is used by guideline developers and journals worldwide. The evidence contributing to key outcomes from our comparisons are assessed based on risk of bias, imprecision, indirectness, inconsistency, and publication bias.

What is the advantage of a "living" systematic review?

Scientific research is cumulative and constantly updated. New studies may incorporate advanced methodologies and technological developments, or they can apply to different or expanded populations. Researchers may also conduct replication studies to test whether prior results can be reproduced or generalized.

While standard systematic reviews provide a "snapshot" of the evidence at a point in time, living reviews are updated continuously, incorporating the most recent studies.

Why do we disseminate research findings even when the results are inconclusive?

Reviews of existing empirical evidence can inform policy and legal decisions. Dissemination of inconclusive, null, or unexpected findings provides valuable information about gaps in our knowledge, cueing researchers to design new investigations. Sharing these findings also helps to avoid unwarranted claims about the evidence

Research dissemination and public communication efforts are particularly important in the area of tobacco control, where addressing misunderstandings and misinformation about products and their different health risks and potential benefits can have important consequences for individual and population health.