

Arguments for and against the use of systematic reviews in healthcare decision making: *Cui bono?*

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Introduction: Systematic reviews (SRs) are like scientific investigations in themselves, using pre-planned methods and an assembly of original studies that meet their criteria as 'subjects'. They synthesize the results of an assembly of primary investigations using strategies that limit bias and random error. One of the first steps in this type of review is a comprehensive search of all potentially relevant articles with a pre-defined search strategy. A quantitative systematic review summarizes results using a statistical technique called **meta-analysis** (MA) when studies are comparable. This technique allows researchers to combine the results of several studies into a single estimate of their combined result. (Cochrane collaboration, 2010)

Systematic reviews of pharmaceuticals and other interventions are used to inform practice guidelines and public- and private-sector health policy decisions. Arguments for and against the use of systematic reviews in health policy may be related to authors' affiliations, including income sources and ideological backgrounds. For example, when meta-analyses concluded that exposure to second-hand smoke is harmful, the tobacco industry attacked the basic methodology, and funded research to refute the findings.

Objectives

- Describe the basic "pro" and "con" arguments regarding the use of systematic reviews in health policy making
- Identify financial, ideological, organizational and other affiliations of those making the arguments and rebuttals
- Inform public and private sector policymakers about affiliation biases that may fuel the discourse regarding the policy uses of systematic reviews

Methods: We perform a critical review of articles that evaluate the scope, methods, or process of systematic reviews of pharmaceuticals. We determine what arguments are being made, and the affiliations of those making the arguments.

Inclusion Criteria: Articles in peer-reviewed journals (Study, Review, Commentary, Editorial, Letter) that advocate for, caution against, or oppose using systematic reviews or meta-analyses for health policy decision making.

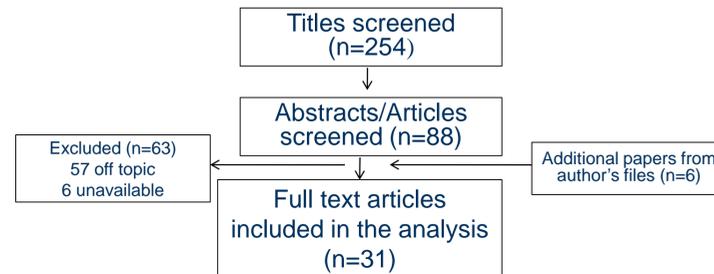
Exclusion Criteria: No policy development focus/views; SRs/MAs of a particular topic; Instructional articles (conduct/assess/use SRs/MAs)

Preliminary Searches using PubMed : 1) Systematic Reviews for Health Policy Decisions; 2) Meta Analysis as topic [Mesh] and Health Policy [Mesh]; 3) Three additional searches not yet analyzed; 4) Papers from authors' files

Data extraction: Article Type; Article Stance (pro/con/neutral); **First/Last Author Affiliations** (employment, membership); **Industry Ties** (Lead/last author industry employment, Lead/last author disclosure of conflict of interest, Disclosure of study/article funding); **Argument description**.

Results:

Records identified through database searching (2 searches)



Article Types	Publication Dates	Argument
Comment	1990-1999	Pro 19
Review/Report	2000-2004	Con 11
Editorial/Letter	2005-2010	Neutral 1
Research Paper		

Arguments in Pro Papers (n=19)

- Methods are good!
 - Transparent, standardized, reduce bias
- Research questions can be targeted to stakeholder interest
- Can provide information about gaps in bodies of research
 - Subpopulations, topic areas
- Cochrane reviews are updated frequently
- Best source of evidence for policy development

Arguments in Con Papers (n=11)

- Methods are bad!
 - Not transparent, not standardized, riddled w/bias
- Research questions are too narrowly focused to be useful
 - No policy context, research questions not relevant
 - Can't do evidence-based evaluation of new drugs because no medical evidence base
- Results are not generalizable
 - Clinical heterogeneity, nonstandard populations
- Reviews quickly go out of date (incl. Cochrane)
- Findings used to cut costs, deny payment for effective therapies, reduce access to treatment

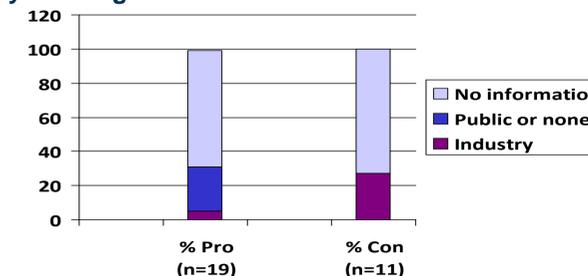
Disclosed Affiliations and Conflicts of Interest:

First/Last Author Affiliation* (employment, memberships):

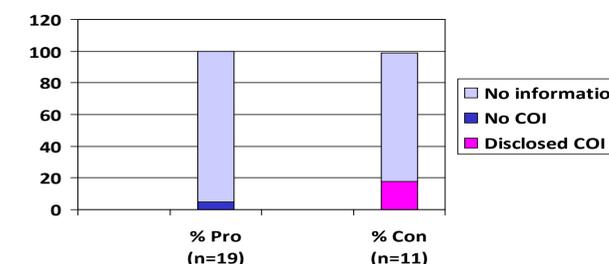
	Pro (19)	Con (11)
Industry	2 (10%)	3 (27%)
University	14 (74%)	6 (55%)
Government/NGO/Nonprofit	8 (42%)	0
Unclear	0	3 (27%)

*Authors may report multiple affiliations; totals >100%

Study Funding:



Authors' Conflicts of Interest:



Summary of Industry Ties:

	Pro (19)	Con (11)
Industry Ties	1 (5%)	6 (55%)
No Industry Ties	1 (5%)	0
No information	17 (89%)	3 (27%)
Unclear	0	2 (18%)

(One neutral paper: university affiliation, no funding/COI information)

Discussion/Conclusions:

Values play a role in health policy and the evidence that informs it. Biases, especially financial conflicts of interest, need to be transparent and taken into account when policy makers evaluate arguments for and against using systematic reviews in health policy and drug coverage decisions. Authors affiliated with governments, nonprofits, and NGOs appear to support. Authors with ties to industry appear to oppose.

However, lack of information about funding and COI hampers identification of affiliation bias in papers on both sides of the arguments. Therefore, we suggest the following:

- Policymakers should consider the source of arguments
- There is a need for more transparency and better disclosure in journals
- Better/more consistent indexing could facilitate the conduct of this type of analysis

Limitations:

- Preliminary results only
- Searches retrieve few relevant papers and many irrelevant papers
- Need to conduct further searches in other databases. Using PubMed MeSH terms from relevant papers yields thousands of mostly irrelevant titles. PubMed may not be the best database for this type of search.

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