



Trusted evidence.
Informed decisions.
Better health.

Methods Projects

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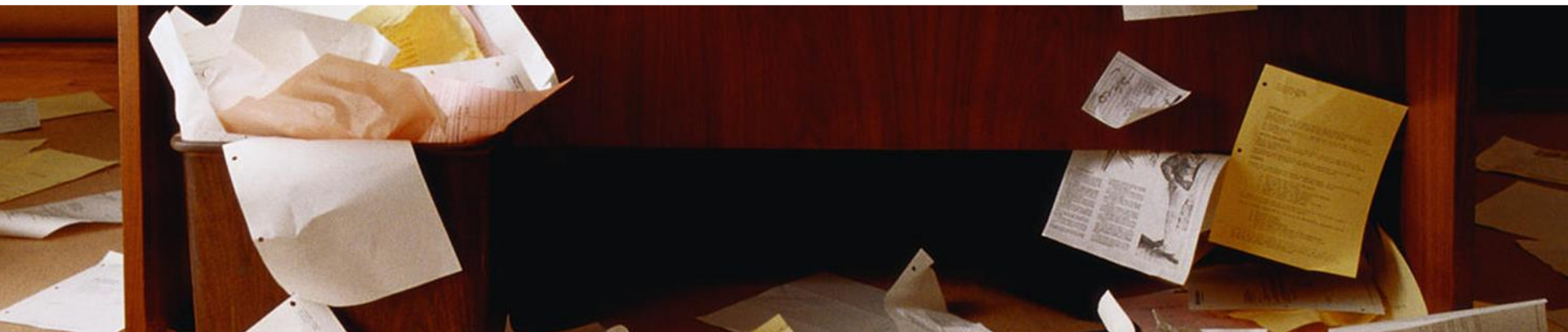
Disclosures

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I have no actual or potential conflicts of interest in relation to this presentation.



Information overload



Systematic Reviews



- High methodological standards
- Most reliable & valid support for health policy decision-making and guideline development
- Often do **not** meet **time-sensitive needs** of decision-makers

Pragmatic alternative: Rapid Reviews



- Produced in **shorter time frame**
- **Simplify certain methodological aspects** of systematic reviews (diverse approaches)
- Potential trade-off = greater **uncertainty** about the correctness of results
- Could potentially lead to an **increased risk of making incorrect decisions or recommendations**

2 methods projects

Project 1: Aim

To determine the **level of risk** of getting an incorrect answer that guideline developers and health policy decision-makers are **willing to accept** in exchange for an evidence-synthesis that can be provided and used faster than a full systematic review.



Methods

- **International Web-based survey*** in English, German, Spanish
- **Anonymous**
- Conducted between **April to July 2016**
- **Nonrandom purposive sample of decision-makers and guideline developers**

* LimeSurvey 2.0 (www.limesurvey.org)

Answering the survey

- **3 scenarios** (clinical treatment, clinical prevention, public health)
- Participants had to **quantify the maximum risk of getting an incorrect answer** that they are willing to accept in exchange for a rapid synthesis for each of the three scenarios
- **Hypothetical Assumption:** SR provides 100% certainty would take 18 months to be completed. A rapid review could be finished within 3 months but carries a risk of providing an incorrect answer.

| Scenario | Medical field | Description |
|-------------------|-----------------------------------|--|
| Scenario 1 | Clinical Treatment | A new drug has the potential to heal a chronic infectious disease (prevalence 3%) for which no cure has been available to date. The drug is extremely expensive (US\$ 84,000 per course of treatment, approximately US\$ 50,000 per quality-adjusted life year gained), and it does not work for all genotypes of the infectious agent. Furthermore, it can lead to serious side effects in rare cases. |
| Scenario 2 | Public Health Intervention | A new vaccination has the potential to prevent a particular type of cancer (incidence 9.9/100,000 per year), but no long-term studies showing the effectiveness are available to date. Preliminary data on the reduction of infection rates of the cancer-causing virus are promising. Interest groups are pushing heavily for health officials to recommend the vaccine and for insurance plans to cover the costs. The costs of a population-wide vaccination campaign would be substantial (US\$ 43,600 per quality-adjusted life year gained). |
| Scenario 3 | Clinical Prevention | A drug class has been widely prescribed for the primary and secondary prevention of cardiovascular disease. The number needed to treat to prevent one cardiovascular event is 71 (over 10 years at a cost of €35,000 per quality-adjusted life year gained). Several new drugs within this class have been approved recently. They are heavily marketed by the industry but, despite higher costs, whether they have any therapeutic benefit compared with that from older drugs remains unclear. |

Sample (n= 334)

Type of evidence-user:

- Decision-maker: 147 (44%)
- GL-developer: 144 (43%)
- Other: 43 (13%)

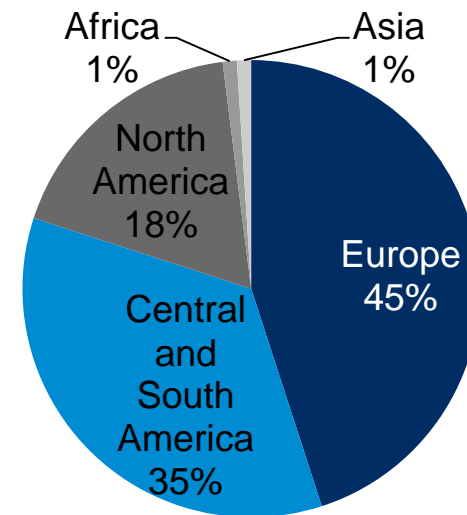
Age:

- < 30 years: 5%
- 31-40 years: 23%
- 41-50 years: 28%
- 51-60 years: 34%
- > 60 years: 10%

Sex:

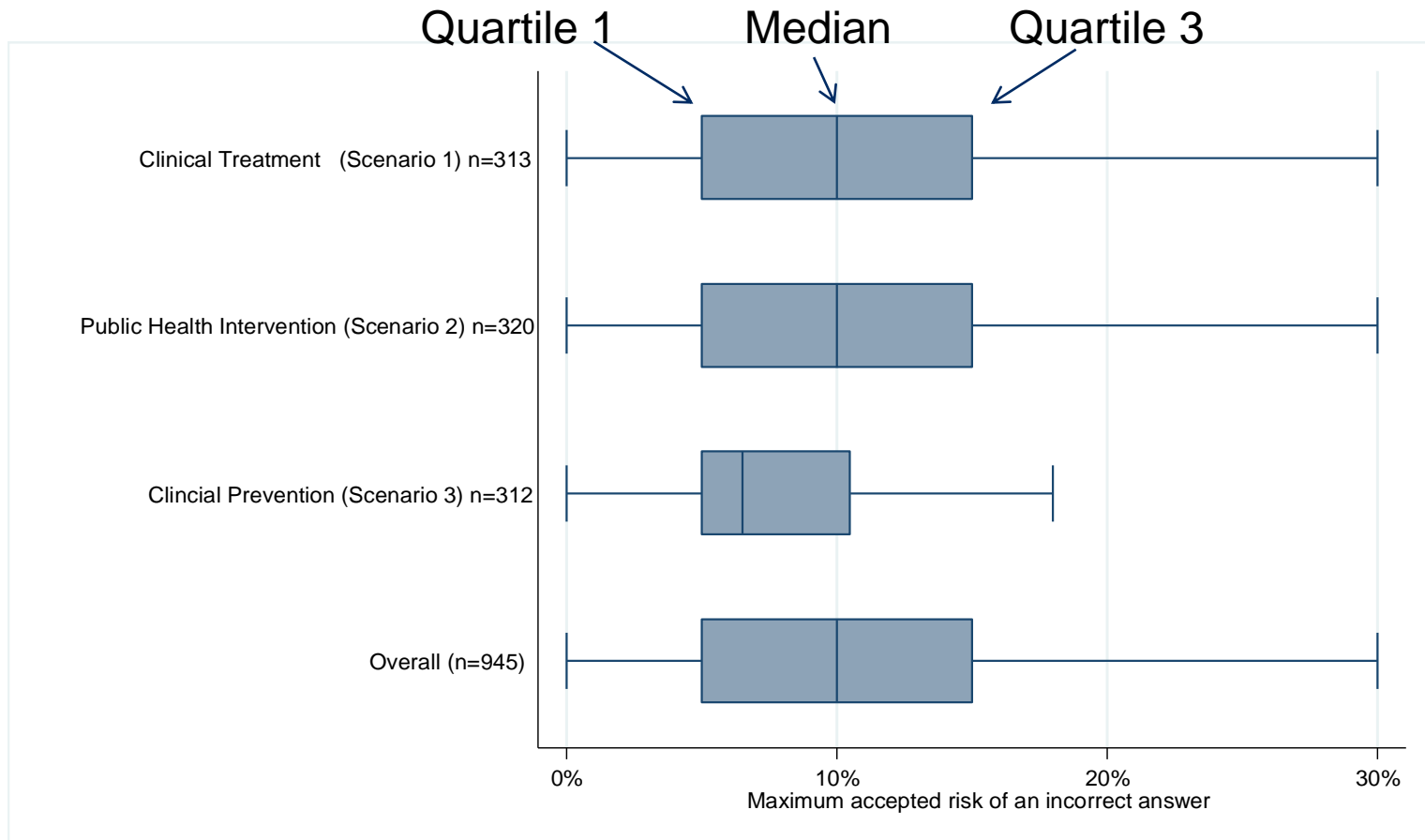
52% female, 48% male

Residence by continent:



Results

Accepted risk of getting an incorrect answer for each clinical scenario;
median



Project 2: Aim

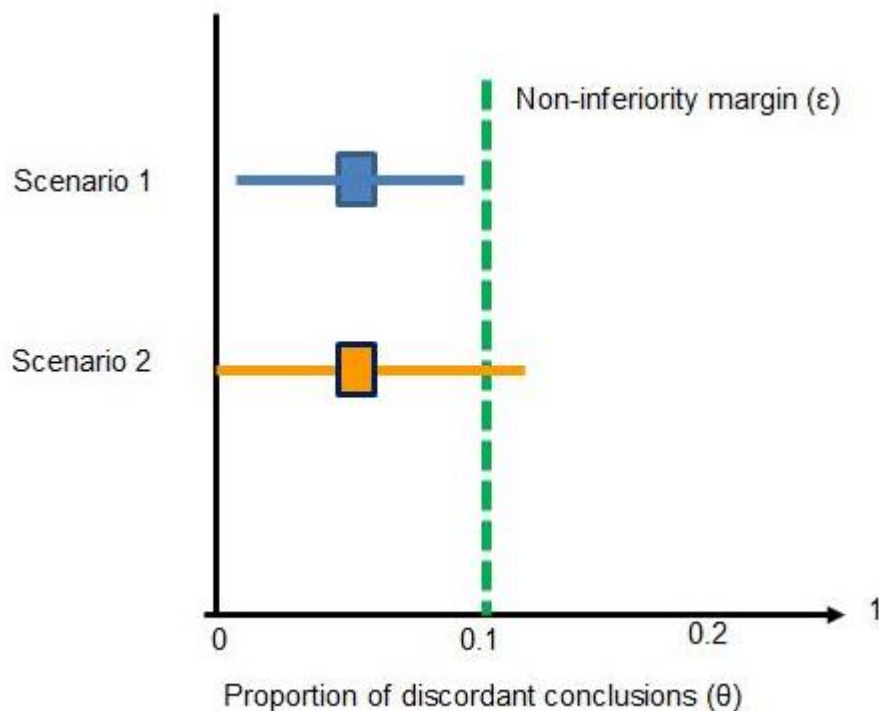
Do bodies of evidence that are based on abbreviated literature searches lead to different conclusions about benefits and harms of interventions compared with bodies of evidence that are based on comprehensive, systematic literature searches?



Methods

- **Non-inferiority** and **meta-epidemiologic** design
- **Reference standard:** Systematic search of a Cochrane review
- **Abbreviated Searches:** Various abbreviated search approaches based on original search strategy (e.g. MEDLINE only, MEDLINE plus CENTRAL, with or without manual searches of reference lists)
- **Primary outcome:** Proportion of discordant conclusions

Two different possible results of a non-inferiority study comparing abbreviated searches with systematic searches



Sample size

| Non-inferiority margin | Required sample size |
|------------------------|----------------------|
| 2% | 516 |
| 3% | 313 |
| 5% | 139 |
| 7% | 86 |
| 10% | 60 |
| 12% | 50 |
| 15% | 30 |

All calculations are based on a significance level of 0.025 and a power of 0.9.

Cochrane Reviews as the Gold Standard

- Random selection of Cochrane reviews that were able to draw conclusions
 1. Summary-of-findings table
 2. Meta-analyses can be recalculated
 3. Search strategy provides enough detail to be replicated
 4. Review focuses on selected clinical topics or any public health topic

Methods

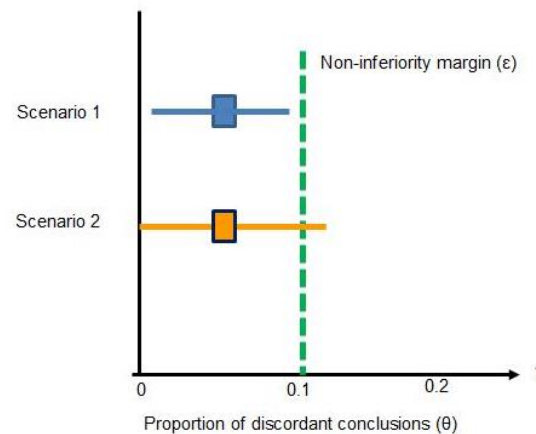
- We will run various abbreviated search strategies
- Cross-check whether these searches missed any studies included in the Cochrane review
- If abbreviated searches could not detect all studies, we will **revise the main summary of findings table**
- **Contact review authors** whether new estimates would **change conclusions** of their report.

Change in Conclusions?

1. The body of evidence based on an abbreviated search would lead to the **same conclusion** (concordant conclusion).
2. The body of evidence based on an abbreviated search would lead to a **different conclusion** (discordant conclusion).
 - conclusion less definitive, but maintained the direction
 - can no longer draw a conclusion
 - changed the direction of the conclusion and less definitive
 - changed the direction of the conclusion, and state the newly derived conclusion in absolute terms

Methods

- Determine the **proportion of discordant conclusions for each abbreviated search approach** & assess whether the lower limit of the confidence interval crosses the **non-inferiority margin**.



Meta-epidemiologic Study

- Focus on the **primary outcome for efficacy and harm** of each included Cochrane report
- Only include **dichotomous** outcomes
- **Ratios of odds ratios**

Discussion

STUDY

Publication 1(main)

Publication 2

Publication 3

Publication 4

Discussion

- When should we consider a study with multiple publications as detected?
 1. When all publications were detected?
 2. When the main publication was detected?
 3. When the detected publications include the relevant data?

Thank you!

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