Flash Talk Title: Flexible generic framework for evidence synthesis in health technology assessment
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My task in HTx project

1. How?
2. The practice use

Generic Framework for HTA

NRS

RCT

NMA
NMR

+ Study
+ Design

AD

IPD

Data
Type

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How?

1. Naïve
2. Informative priors from NRS
3. Bias adjustment model 1
4. Bias adjustment model 2
5. A three-level hierarchical model
1. Naive

No acknowledgement of bias
2. Informative priors from NRS

1. Conduct MA/NMA only with NRS
2. Informative priors from NRS

1. Conduct MA/NMA only with NRS

2. Conduct MA/NMA for RCTs with NRS as prior
3. Bias adjustment model 1

Shift RCT and NRS evidence based on their bias ($b$)

How much to shift?
- Low bias RCT – $b_1$
- High bias RCT – $b_2$
- Low bias NRS – $b_3$
- High bias NRS – $b_4$
- Unclear – $b_5$
3. Bias adjustment model 1
4. Bias adjustment model 2

the bias shift (b) can be estimated from study characteristics, e.g. study-year, concealment, blinding ...
4. Bias adjustment model 2

Bias model: \( b = 0.001 \times \text{study}_\text{year} + 0.3 \times \text{blinding} \)

\( b_1 = 0.001 \times 2000 + 0.3 \times 0 = 2 \)  
Study year: 2000  
Blinding: yes

\( b_2 = 0.001 \times 2020 + 0.3 \times 1 = 2.32 \)  
Study year: 2020  
Blinding: No
5. A three-level hierarchical model

In a single analysis

Conduct MA/NMA only RCTs

Conduct MA/NMA only NRS

The Final results
Which method is used in practice?

Zhang et. al. 2019 performed a scoping review on methods used to combine RCT and NRS in NMA. They identified 23 NMAs ...