Welcome to the three-day seminar

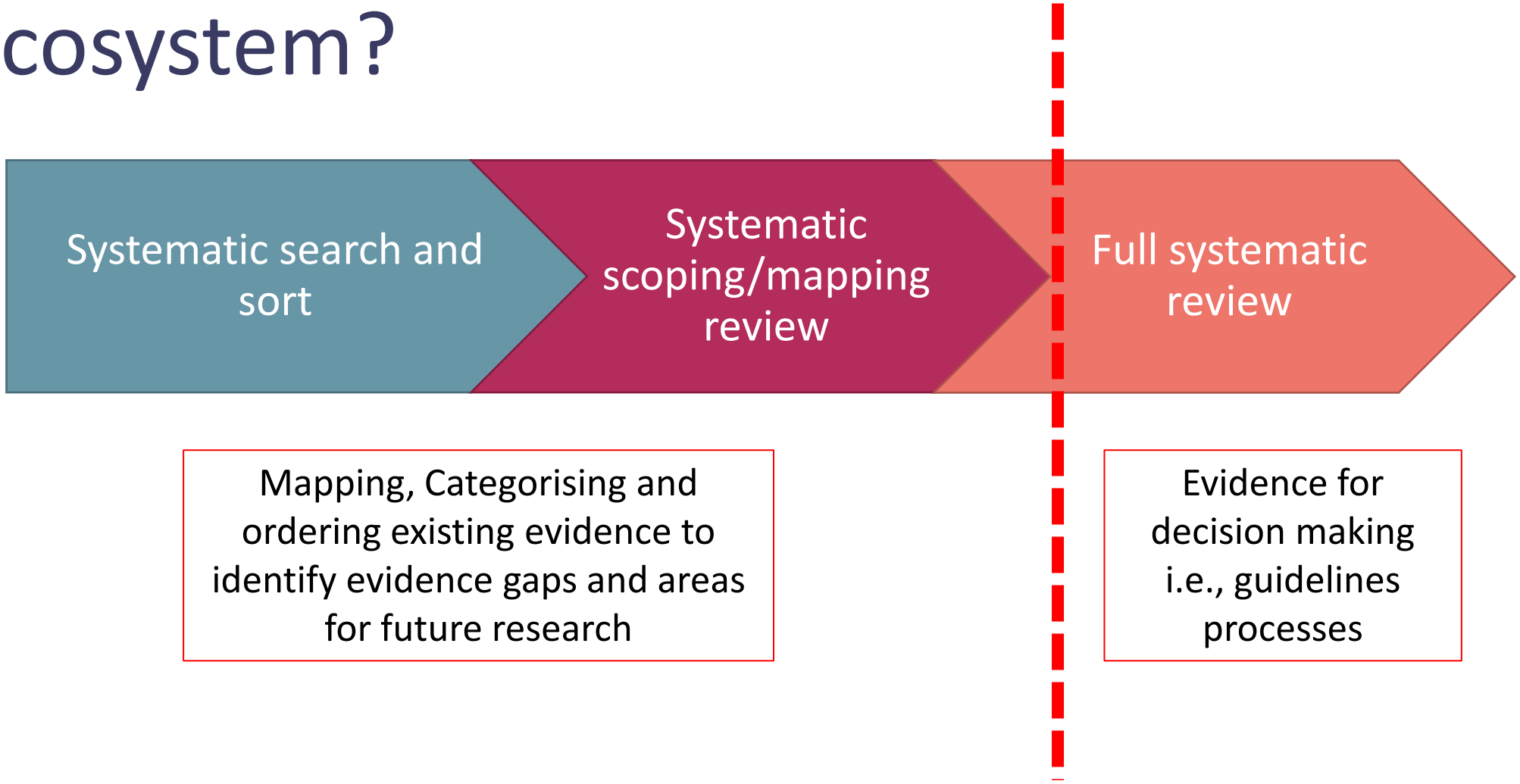
September 26th	September 27th	September 28th
Types of systematic reviews **Synthesis and meta-analysis**	**Selection of articles, screening, and data extraction** **Risk of bias** **Literature search**	**GRADE** **Protocol development and team composition** **Peer review of protocols**
09.00 -12:00 1-Types of systematic reviews and how to frame and ask a specific question (LL, HA)	**09.00 -10.45** 3 &4 Screening, study selection, data extraction, software, and machine learning (LJL, UG, HA) **11:00 – 12.00** Risk of Bias (AF)	**09.00 -10.00** Search follow up (MJ, IK) **10:15-12:00** 6 GRADE and GRADE CERQual (LL, HA)
12.00 -12.30 Lunch	**12.00 -12.30** Lunch	**12.00 -12.30** Lunch
12.30 – 14:45 2-How to decide what data analysis approach to use. Part 1-quantitative and qualitative data (LL, HA) **15:00-16:00** Fine tuning of research questions and selection criteria (HA, LL, LJL, UG)	**12.30 -15.00** Search workshop (MJ, IK) **15:15-16:30 Data synthesis exercises** **5 Group 1:** Quantitative data (LL) **Group 2:** Qualitative data and scoping reviews (HA)	**12.30 -13.00** How to present results (LL, HA) **13.15 – 14.45** Protocol development and team experience and composition (LL) **14:45-15:00** Exam and supervision information (LL) **15:00-16:00** Supervisors available for questions (HA, LL, LJL, UG)

How to frame the question for different types of systematic reviews

Heather Ames and Lillebeth Larun

September 2022

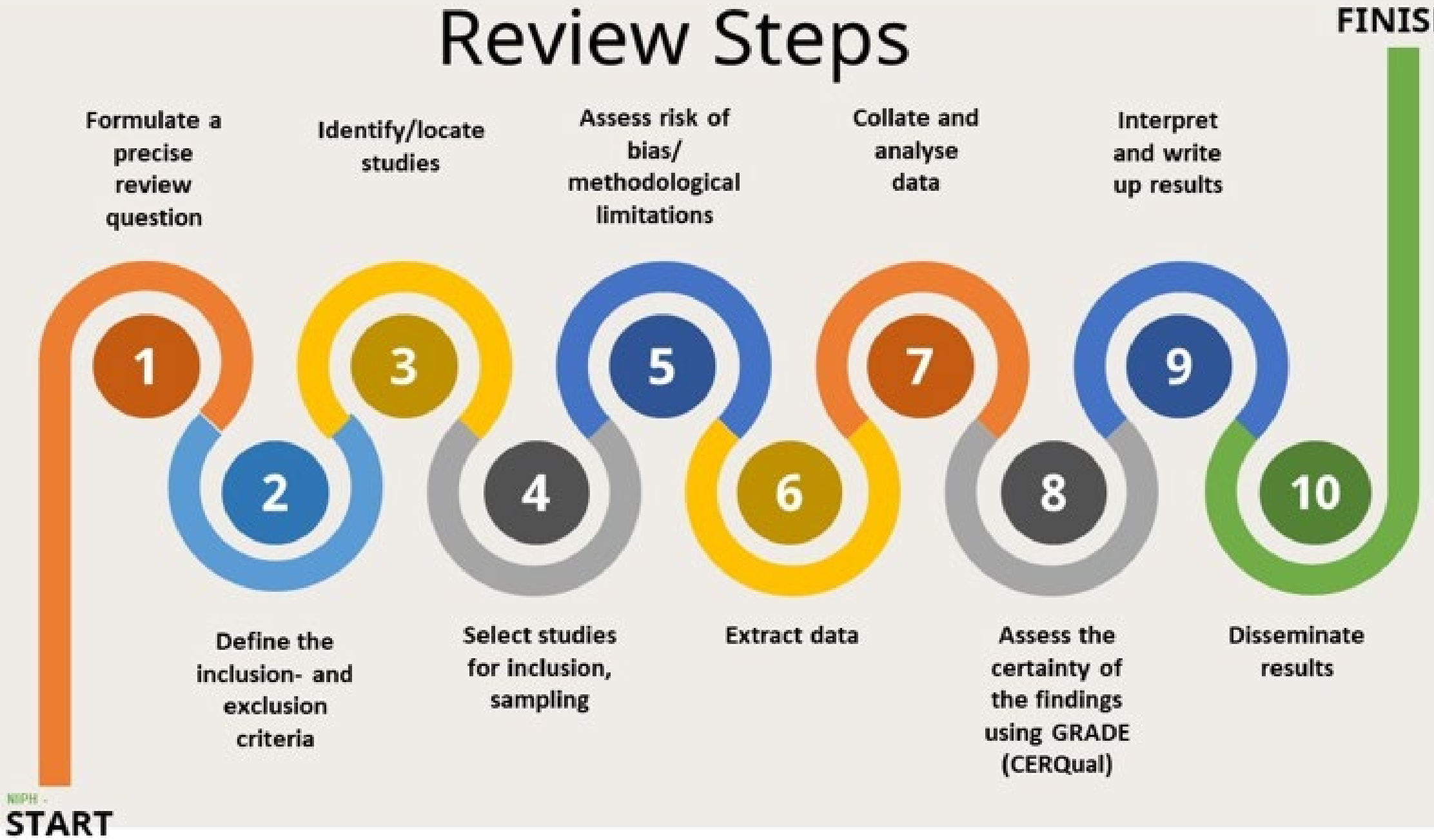
Where do they fit in the evidence ecosystem?



Types of systematic reviews

Systematic review (SR)	Health technology assessment (HTA)	Systematic scoping review	Evidence and gap map
SR of primary studies: • Prevalence • Aetiology • Diagnosis • Effect • Prognosis • Qualitative evidence	**SR +:** • Health economic evaluation • Legal aspects • Ethical aspects	• Identify and describe extent and characteristics in the literature regarding a specific topic • Summarize and communicate research on a specific topic • Identify knowledge gaps and suggest further research • Identify needs for a systematic review on a topic	• Identify knowledge gaps concerning effects of interventions in a thematic area • Tool for research prioritization and strategic research commissioning
Overview of systematic reviews: • One population, several interventions • Several populations, one intervention • One population, one intervention, several outcomes • Several populations and interventions			

Review Steps



Agenda

- Which type of systematic review does your question require?
  - Effect
  - Qualitative
  - Prevalence
  - Aetiology
  - Diagnoses
  - Prognosis
- Framing the question
- Consequences for protocol

Different question use different SR methods

- Same principle as primary research
- Your question determines the methods used to answer it

For example…

How many people have this health condition? (*prevalence*)

Why do some people get this condition while others do not? (*etiology*)

How can we decide if someone has this condition? (*diagnostics*)

What happens to people who have this condition? (*prognosis*)

How do people experience this condition? (*attitudes and experiences (*qualitative))

What can we do to treat or prevent this problem? (*effect of interventions*)

How would you frame these questions?

- **Examining the relationship between Intolerance of Uncertainty and depression during Covid-19 and the effect of worries and demographic characteristics on the relationship: A systematic Review**
- **Assessment of the core elements of antimicrobial stewardship program in hospitals in the African continent**
- Are Positive Youth Development's (PYD) measures psychometrically sound?
- What is the cost-effectiveness of Cognitive Behavioral Therapy (CBT) compared to Acceptance and Commitment Therapy (ACT) in treating depression among ethnic youth living in Canada, UK, or Scandinavia?
- The objective of this systemic review study about the Risk of venous thromboembolism in women taking the combined oral Contraceptive is to estimate venous thrombosis risk associated with COC use compared with non-user.

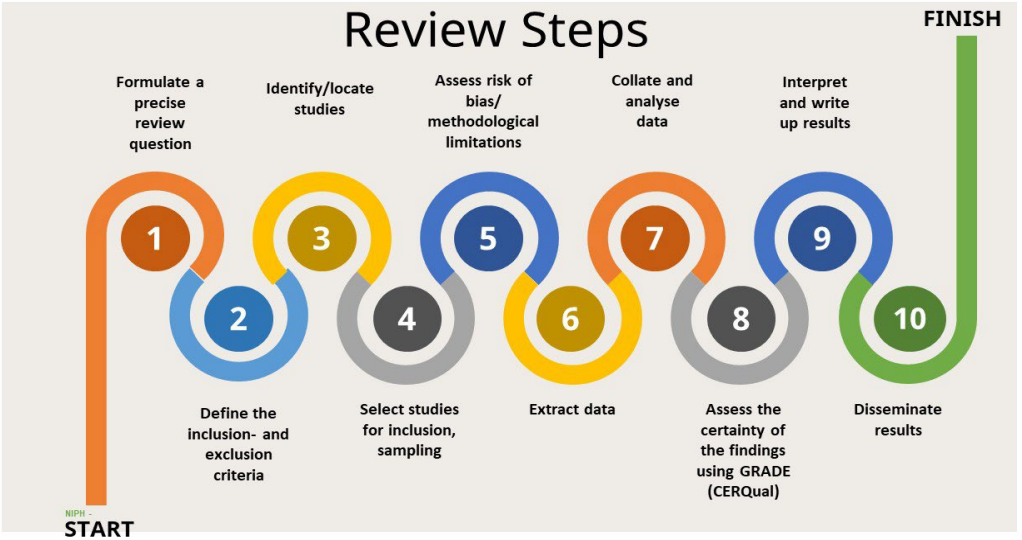
Core questions in health care

Research question	Knowledge	Preferred study design
How many have a problem? (e.g. type 2 diabetes)	Prevalence	Cross-sectional
Why do some have this problem and not others?	Etilogy	Cohort Case-control
How can we decide whether someone has this problem?	Diagnostics	Cross-sectional (with reference standard)
What can we do to prevent or treat this problem?	Effects of interventions	Randomised controlled trials
What is the probable course and outcome of the problem?	Prognosis	Cohort
What hat is it like to have the problem? How is the intervention perceived to work?	Experiences Mechanisms	Qualitative methods

Steps in conducting a systematic review

1. Formulate a precise review question
2. Define the inclusion- and exclusion criteria
3. Identify (locate) studies
4. Select studies for inclusion, sampling
5. Assess risk of bias/methodological limitations
6. Extract data
7. Collate and analyse data
8. Assess the certainty of the findings using GRADE (CERQual)
9. Interpret and write up results
10. Disseminate results

Which steps will be identical and which will need different apporaches depending on your core question?



Steps/process in conducting a systematic review

Differences and similarities between different core questions

1. **Formulate a precise review question**
2. Define the inclusion- and exclusion criteria
3. Identify (locate) studies
4. Select studies for inclusion, sampling
5. **Assess risk of bias/methodological limitations**
6. Extract data
7. **Collate and analyse data**
8. **Assess the certainty of the findings using GRADE (CERQual)**
9. Interpret and write up results
10. Disseminate results

Systematic reviews of effect

Formulate an effect question

1. Formulate the question
    -PICO (Population, intervention, comparison, outcome)
    - Primarily RCTs
5. Assess risk of bias
    - ROB2
7. Collate and analyse data
    - Consult a statistician- Meta analysis or narrative analysis
8. GRADE – Confidence in the findings

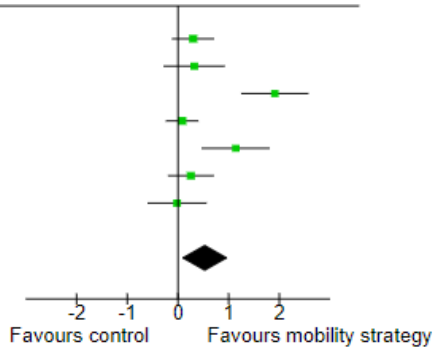
Effect meta analysis (When possible)

Figures and Tables - *Interventions for improving mobility after hip fracture surgery in adults*

Hide thumbnails

Study or Subgroup	Mobility strategy Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI
Kimmel 2016 (1)	-16.5	9.4	46	-19.2	8.4	46	15.7%	0.30 [-0.11 , 0.71]
Mitchell 2001 (2)	18	2.96	20	17	3.15	24	13.5%	0.32 [-0.28 , 0.92]
Monticone 2018 (3)	39.5	7.3	26	26	6.6	26	12.7%	1.91 [1.25 , 2.58]
Moseley 2009 (4)	9.3	2.4	73	9.1	2.4	77	16.6%	0.08 [-0.24 , 0.40]
Oh 2020 (5)	-2.47	1.12	21	-4	1.49	20	12.7%	1.14 [0.48 , 1.81]
Sherrington 2003 (6)	7.5	2.7	40	6.8	2.8	37	15.2%	0.25 [-0.20 , 0.70]
Van Ooijen 2016 (7)	16.25	2.46	34	16.3	3.5	17	13.7%	-0.02 [-0.60 , 0.56]
Total (95% CI)			**260**			**247**	**100.0%**	**0.53 [0.10 , 0.96]**

Heterogeneity: Tau² = 0.26; Chi² = 31.02, df = 6 (P < 0.0001); I² = 81%
Test for overall effect: Z = 2.42 (P = 0.02)
Test for subgroup differences: Not applicable



Footnotes

(1) Modified Iowa Level of Assistance (0 independent, to 36 dependent). Post op day 5. Value multiplied by -1 to invert scale for consistency with other trial outcomes.
(2) Elderly Mobility Scale at 16 weeks, converted from median IQR/1.35
(3) Berg Balance Scale, 3 wks
(4) Physical Performance and Mobility Examination score (0: failure to 12: top score), 16 weeks
(5) Koval Walking Ability Score (1=better outcome, to 7 worse outcome). 3 months. Value multiplied by -1 to invert scale for consistency with other trial outcomes.
(6) Physical Performance and Mobility Examination score (0: failure to 12: top score).
(7) Combined Conventional & C-mill treadmill, Elderly Mobility Scale, 10 weeks

Analysis 1.1 Comparison 1: In-hospital rehabilitation: mobilisation strategy versus usual care, critical outcomes, Outcome 1: Mobility (measured using mobility scales): combi
all strategy types

Fairhall NJ, Dyer SM, Mak JCS, Diong J, Kwok WS, Sherrington C. Interventions for improving mobility after hip fracture surgery in adults. Cochrane Database of Systematic Reviews 2022, Issue 9. Art. No.: CD001704. DOI: 10.1002/14651858.CD001704.pub5. Accessed 19 September 2022.

Narrative analysis

Low or very low birth weight (<2500 og < 1500 grams)

We are uncertain whether travel time of more than one hour is associated with heightened risk of low or very low birth weight (<2500 og < 1500 grams). We have assessed our confidence in the evidence as very low (table 8).

Two studies (37, 38) examined the association between distance and the risk of being born at a low (< 2500g) or very low (< 1500g) birth weight.

The first study (37) reported that living further than one hour away was a protective factor for low birth weight (<2500g). Pregnant people living more than one hour away had 31% lower odds of giving birth to a new-born with a birthweight <2500g (OR 0.69, 95% CI 0.56 to 0.85).

Data was not extractable from the second study (38), in order to compare the risk of very low birthweight of all pregnant people living more than an hour away to those living one hour away. There was no clear association of very low birthweight and distance. Only pregnant people living 2-4 hours away, and only in one province, had a higher risk of very low birth weight compared to those who lived both within an hour and with access to the highest level of maternity services. In table 7, the adjusted odds ratios that are in bold are statistically significant.

SoF Table

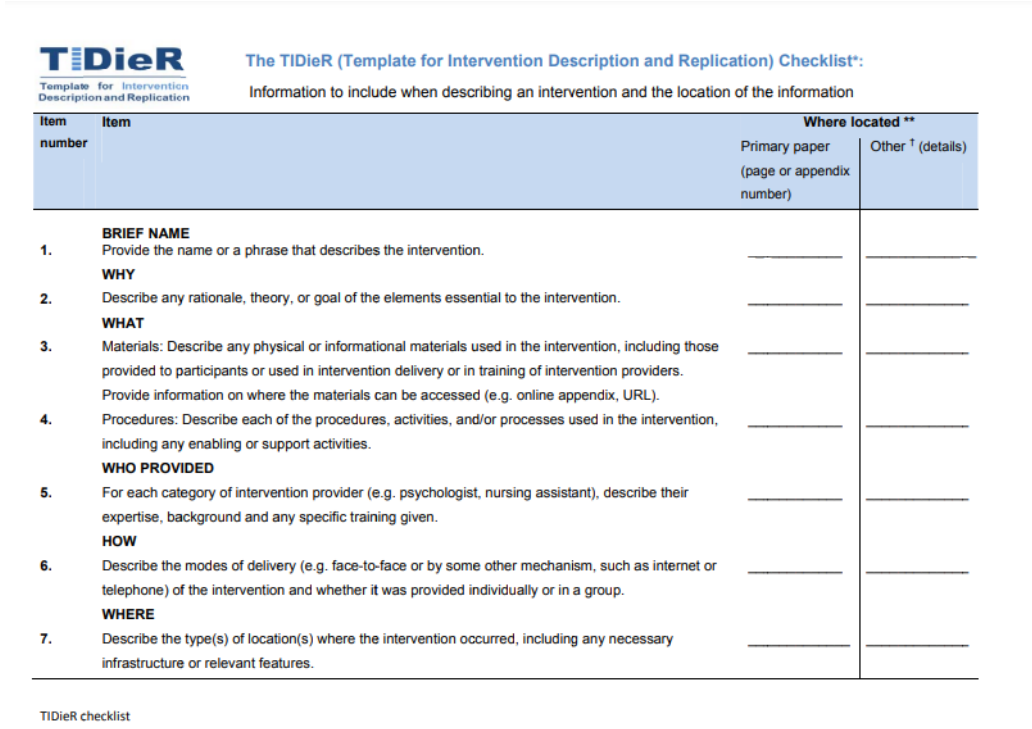
TABLE 4: SUMMARY OF FINDINGS TABLE FOR MATERNAL OUTCOMES

The effect of living more than one hour away from a delivery institution compared to less than one hour					
Outcome	**Number of participants (studies)**	**Certainty of the evidence (GRADE)**	**Relative effect (95% CI)**	**Anticipated absolute effects**	
				Less than one hour travel time to the delivery centre	**More than one hour travel time to the delivery centre**
Birth before 35 weeks and pre-eclampsia	630,236 (1 observational study)	⨁◯◯◯ VERY LOW [a]	aRR 0,90 (0,70 til 1,05)	5 per 1,000	0 less per 1,000 (1 less to 0 less)
Eclampsia/HELLP-syndrome	62,7849 (1 observational study)	⨁⨁◯◯ LOW	aRR 1,30 (1,05 til 1,7)	2 per 1,000	1 more per 1,000 (0 less to 2 more)
Unplanned delivery outside of a delivery centre	688,269 (2 observational studies)	⨁⨁⨁◯[b] MODERATE	uOR 6.37 (5.95 to 6.81)	5 per 1,000	28 more per 1,000 (26 - 30 more)
Induction for logistical reasons	49,402 (1 observational study)	⨁⨁◯◯ LOW	uOR 4.96 (3.59 to 6.86)	4 per 1,000	14 more per 1,000 (9 – 20 more)
Maternal mortality	-	-	-	-	-
Bleeding more than 500 ml	-	-	-	-	-
Perineal tears (3rd or 4th degree)	-	-	-	-	-
Patient satisfaction	-	-	-	-	-
CI: Confidence interval; uOR: Unadjusted Odds ratio; aRR: Adjusted risk ratio					

Reporting of intervention TIDieR

Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide

https://www.equator-network.org/reporting-guidelines/tidier/



TIDieR Template for Intervention Description and Replication

The TIDieR (Template for Intervention Description and Replication) Checklist*:

Information to include when describing an intervention and the location of the information

Item number	Item	Where located **	
		Primary paper (page or appendix number)	Other † (details)
	BRIEF NAME		
1.	Provide the name or a phrase that describes the intervention.		
	WHY		
2.	Describe any rationale, theory, or goal of the elements essential to the intervention.		
	WHAT		
3.	Materials: Describe any physical or informational materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers. Provide information on where the materials can be accessed (e.g. online appendix, URL).		
4.	Procedures: Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities.		
	WHO PROVIDED		
5.	For each category of intervention provider (e.g. psychologist, nursing assistant), describe their expertise, background and any specific training given.		
	HOW		
6.	Describe the modes of delivery (e.g. face-to-face or by some other mechanism, such as internet or telephone) of the intervention and whether it was provided individually or in a group.		
	WHERE		
7.	Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features.		

TIDieR checklist

https://www.equator-network.org/wp-content/uploads/2014/03/TIDieR-Checklist-PDF.pdf

Protocol and further reading

PRISMA

- Follow the PRISMA guidance for your protocol
- For further reading see the information package or visit the Cochrane Collaboration website

Qualitatve Evidence Synthesis : Formulating the question

SPICE:

- Setting (Where? in what context?)
- Population or Perspective (For whom?)
- Intervention (What?)
- Comparison (What else?)
- Evaluation (How well? What result?)

SPIDER (Sample, Phenomenon of Interest, Design, Evaluation, Research type).

PerSPE(c)TiF

- Perspective
- Setting
- Phenomenon (topic) of interest
- (Comparison)
- Time/timing
- Findings

Qualitative evidence synthesis (QES)

Formulating a question about experience, perception, feasibility etc.

- A clear questions using an appropriate accronym (SPICE, SPIDER, etc.)
- A clearly stated set of objectives with pre-defined eligibility criteria for studies (not necessarily **fixed** throughout the review process)
- An explicit, transparent methodology (not necessarily **linear** in nature)
- A well defined, systematic search that attempts to identify studies that meet the eligibility criteria (not necessarily **exhaustive** in nature)
- A statment of the methodological quality of the findings of the included studies
- A systematic extraction, synthesis and presentation of the charachteristics and findings of the included studies

(From The qualitative evidence synthesis workshop, Cochrane qualitative and implementation methods group, Edinburgh Colloquoium 2018)

QES Findings

Narrative text

Finding 3: Parents found it difficult to remember information communicated during a vaccination appointment as they were distracted and worried about their child (moderate confidence).

Table 6

In a few studies parents felt that receiving information during a vaccination appointment was not ideal, as they were tired, distracted by their child and worried about how the child would react to being vaccinated (Shui 2005; Austvoll-Dahlgren 2010).

" 'When [your child is] called in and getting ready to get the shots you're flustered with worrying about how to comfort the child . . . you're not thinking about trying to read that information at the time. You need it ahead of time' " (Shui 2005).

Finding 7: Parents generally found the amount of vaccination information they received to be inadequate (high confidence).

Table 12

Many studies found that parents were dissatisfied with the amount of vaccination information that they received (Bond 1998; Evans 2001; Guillaume 2004; Shui 2005; Fowler 2007; Tickner 2007; Gust 2008; Tickner 2010; Bond 2011; Figueiredo 2011; Harmsen 2012; Hussain 2012; Tomlinson 2013; Fadda 2015; Harmsen 2015; Blaisdell 2016; Sobo 2016). Some parents felt that even though there was more information available now than previously, it was still not enough to meet their information needs (Gust 2008; Figueiredo 2011; Fadda 2015; Harmsen 2015; Sobo 2016). This lack of information sometimes served to reinforce their concerns about vaccination (Shui 2005; Fowler 2007; Harmsen 2012; Fadda 2015; Harmsen 2015; Sobo 2016). Lack of information or inadequate answers to parents' questions and concerns led to parents feeling angry about their lack of knowledge and sometimes to have doubts about the vaccination programme (Bond 1998; Bond 2011; Hussain 2012; Fadda 2015; Blaisdell 2016). Many parents said that inadequate information had hampered their decision-making (Evans 2001; Guillaume 2004; Fowler 2007; Tomlinson 2013).

" 'But that's very confusing isn't it, as a parent because you obviously want the best for your child and when you see all these reports . . . and you're trying to look at it and make an educated decision . . . I think just basically there's a complete lack of information . . . I think there needs to be something a bit sort of totally universal that everyone can sort of get their hands on and that's independent 'cause I think people are just either way polarised' " (Evans 2001).

" 'We would like to have information before vaccination. There is not enough information . . . therefore there occur doubts [regarding vaccination]' " (Fowler 2007).

Only one study, undertaken in Ethiopia, found that parents were satisfied with the amount of information they were receiving. This was based on exit interviews after a health talk. However, the same study, when using in-depth interviews, found that parents were actually dissatisfied with the information they received about childhood vaccination and wanted more (Berhanel 2000).

Summary of qualitative findings tables

	Finding	Overall CERQual assessment	Explanation for assessment	Contributing studies
Findings related to availability of vaccination information				
4	Parents want vaccination information resources to be available at a wider range of health services and community and online settings, for instance through schools, pharmacies, clinics and libraries.	**Low confidence**	Due to moderate concerns regarding methodological limitations, relevance and adequacy	Shui 2005; Fowler 2007; Miller 2008; Fadda 2015
5	Parents want help from health workers to locate relevant vaccination information resources.	**Low confidence**	Due to minor concerns about methodological limitations and moderate concerns about relevance and adequacy	Miller 2008; Austvoll-Dahlgren 2010; Fadda 2015
6	Parents who had migrated to a new country had difficulty negotiating the new health system and accessing and understanding vaccination information.	**Low confidence**	Due to moderate concerns about methodological limitations and relevance and minor concerns about adequacy	Tomlinson 2013; Harmsen 2015; Kowal 2015

Table 7. Summary of qualitative findings table: availability of vaccination information

GRADE CERQual

Protocol and further reading

- Follow the Cochrane EPOC QES template for your protocol
- For further reading see the information package or visit the Cochrane Collaboration website

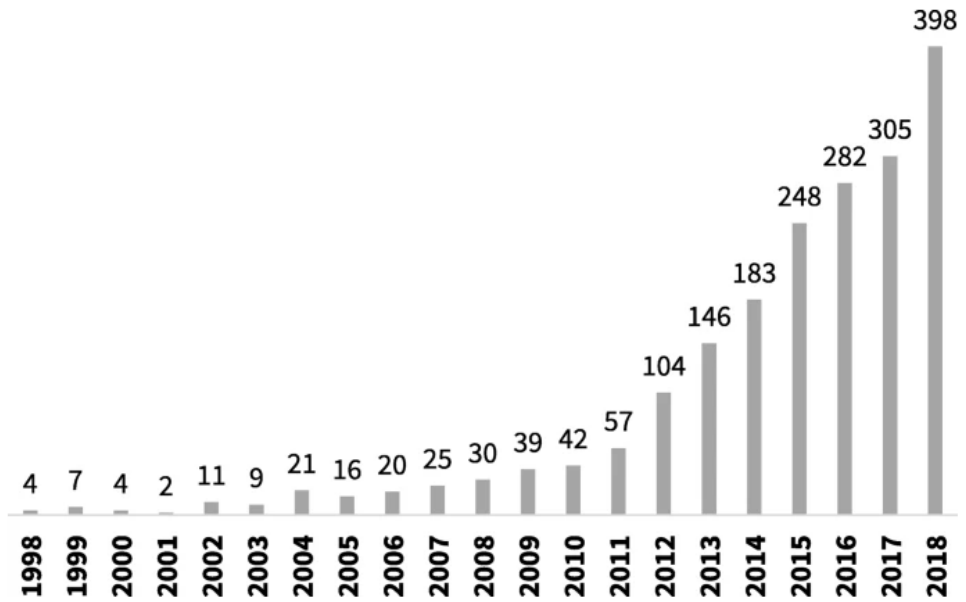
Prevalence

Formulate a prevalence question

1. Formulate the question
    - **Co**ndition – **Co**ntext – **Pop**ulation (CoCoPop)
    - Primarily cross sectional studies
5. Assess risk of bias
    - No agreed standard – examples Hoy 2012 or JBI
7. Collate and analyse data
    - Consult a statistician
8. GRADE – few worked examples but possible to adapt

How are systematic reviews of prevalence conducted? A methodological study

Fig. 1



Number of systematic reviews of prevalence indexed in PubMed between 1998 and 2018

Conclusions

Our results indicate that there are significant inconsistencies regarding how these reviews are conducted. Many of these differences arose in the assessment of methodological quality and the formal synthesis of comparable data. This variability indicates the need for clearer reporting standards and consensus on methodological guidance for systematic reviews of prevalence data.

Borges Migliavaca, C., Stein, C., Colpani, V. *et al.* How are systematic reviews of prevalence conducted? A methodological study. *BMC Med Res Methodol* **20**, 96 (2020). https://doi.org/10.1186/s12874-020-00975-3

Prevalence: meta-analysis

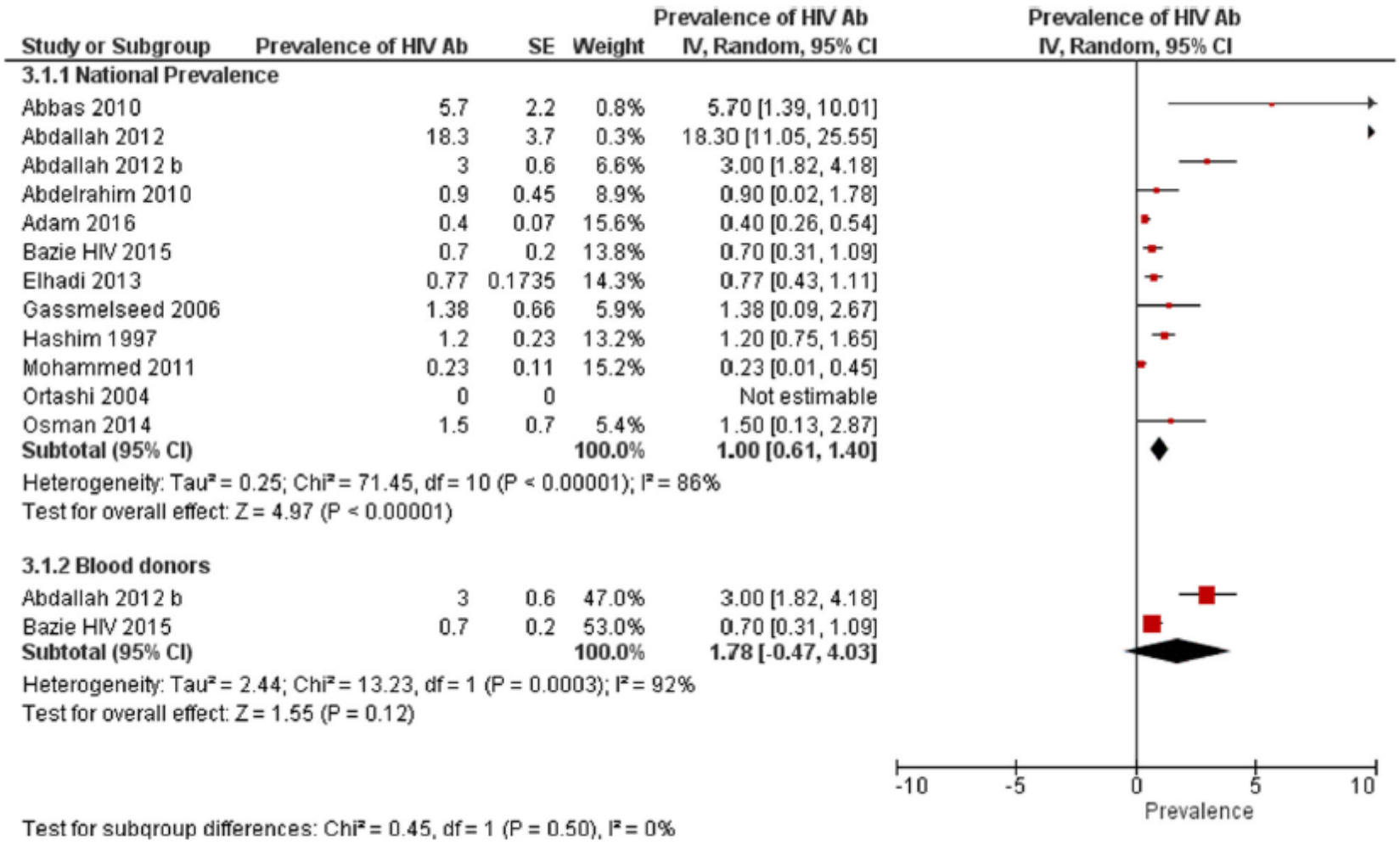


Fig. 2 National prevalence of HIV antibodies and prevalence among blood donors from studies included in the review

Protocol and SR - further reading

PRISMA

- Follow the PRISMA guidance for your protocol
- JBI Chapter 5: Systematic reviews of prevalence and incidence **https://jbi-global-wiki.refined.site/space/MANUAL/4688607/Chapter+5%3A+Systematic+reviews+of+prevalence+and+incidence**
- How are systematic reviews of prevalence conducted? A methodological study **https://bmcmedresmethodol.biomedcentral.com/articles/10.1186/s12874-020-00975-3**
- Systematic Reviews in Health Research: Meta-Analysis in Context. Chapter 19 Systematic Reviews of Epidemiological Studies of Etiology and Prevalence **https://onlinelibrary.wiley.com/doi/abs/10.1002/9781119099369.ch19**
- Information packet

Etiology

Formulate an etiology question

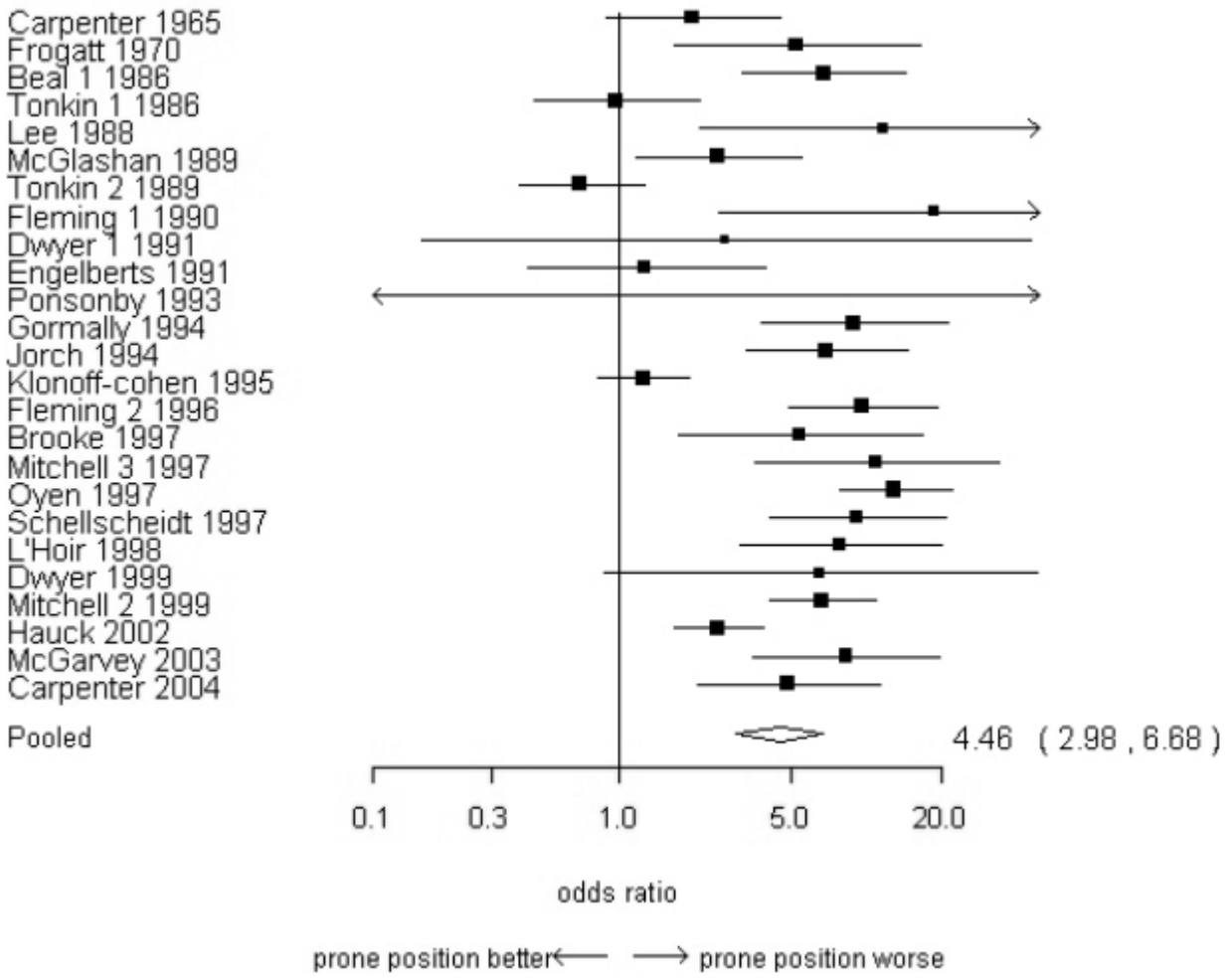
1. Formulate the question
    - PICO
    - Primarily cohorts or case-control

5. Assess risk of bias
    - for example ROBINS-I or Newcastle-Ottawa Scale

7. Collate and analyse data
    - For example paired comparisons in exposed versus unexposed individuals

8. GRADE – possible

Etiology: meta-analysis



Infant sleeping position and the sudden infant death syndrome: systematic review of observational studies and historical review of recommendations from 1940 to 2002 FREE

Ruth Gilbert ✉, Georgia Salanti, Melissa Harden, Sarah See

International Journal of Epidemiology, Volume 34, Issue 4, August 2005, Pages 874–887, https://doi.org/10.1093/ije/dyi088

Protocol etiology

COSMOS-E: Guidance on conducting systematic reviews and meta-analyses of observational studies of etiology

https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002742

Box 2. Key elements of a protocol for a systematic review of observational studies of etiology

1. Background and rationale
2. Review question(s)
3. Definition of exposures, contrasts, and outcomes
4. Tabulation of potential confounders and biases that could affect study results
5. Study eligibility criteria
6. Literature search for relevant studies
7. Data extraction (study characteristics and results)
8. Assessment of risk of bias and study sensitivity
9. Statistical methods
10. Planned analyses
11. Approach to how the body of evidence will be judged

Protocol and further reading

PRISMA

- Follow the PRISMA guidance for your protocol
- For further reading see the information package or visit the Cochrane Collaboration website

Diagnostic Test Accuracy (DTA)

Formulate an etiology question

1. Formulate the question
    - PICROOS: Patients – Index test – Comparator – Reference test – Outcome – Outcome – Study design

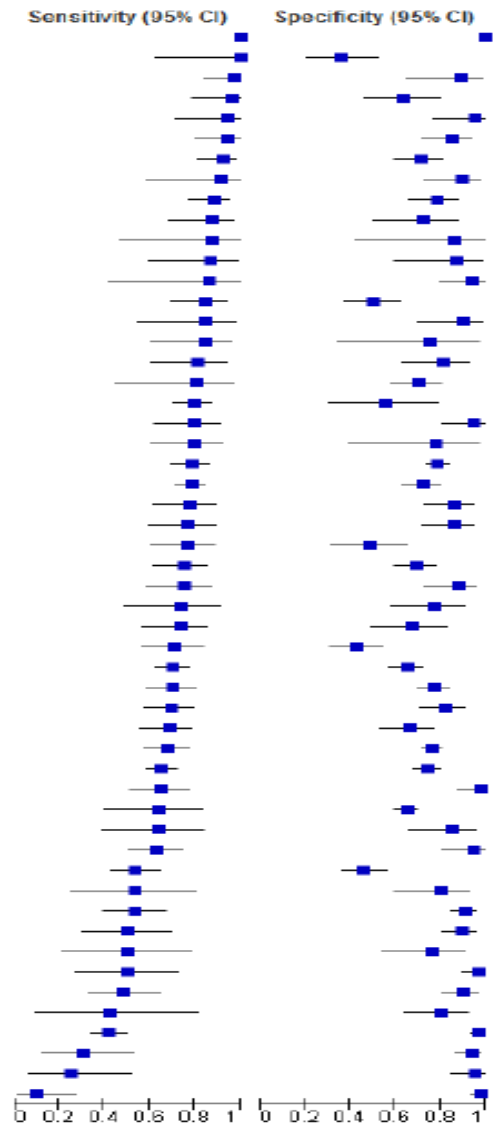
5. Assess risk of bias
    - QUADAS-2 https://pubmed.ncbi.nlm.nih.gov/22007046/

7. Collate and analyse data
    - Systematic Reviews in Health Research: Meta-Analysis in Context. Chapter 16. Systematic reviews of Diagnostic accuracy https://onlinelibrary.wiley.com/doi/10.1002/9781119099369.ch16

8. GRADE – Chapter 7. The GRADE apporach for diagnostic tests and strategies https://gdt.gradepro.org/app/handbook/handbook.html#h.f7lc8w9c3nh8

DTA: meta-analysis

Study	TP	FP	FN	TN	Sensitivity (95% CI)	Specificity (95% CI)
Innes 2011	206	1	0	294	1.00 [0.98, 1.00]	1.00 [0.98, 1.00]
McCarthy 2005	8	27	0	16	1.00 [0.63, 1.00]	0.36 [0.22, 0.52]
Innes 2007	31	2	1	16	0.97 [0.84, 1.00]	0.89 [0.65, 0.99]
Devos 2013	23	13	1	23	0.96 [0.79, 1.00]	0.64 [0.46, 0.79]
Nouri 1987	16	1	1	21	0.94 [0.71, 1.00]	0.95 [0.77, 1.00]
Engum 1989	32	7	2	40	0.94 [0.80, 0.99]	0.85 [0.72, 0.94]
McKenna 2004	48	20	4	50	0.92 [0.81, 0.98]	0.71 [0.59, 0.82]
Devos 2007	10	3	1	26	0.91 [0.59, 1.00]	0.90 [0.73, 0.98]
Dobbs 2010	53	13	7	48	0.88 [0.77, 0.95]	0.79 [0.66, 0.88]
Ferreira 2013	22	7	3	18	0.88 [0.69, 0.97]	0.72 [0.51, 0.88]
Akinwuntan 2013	7	1	1	6	0.88 [0.47, 1.00]	0.86 [0.42, 1.00]
Devos 2012	13	2	2	13	0.87 [0.60, 0.98]	0.87 [0.60, 0.98]
Ranchet 2013	6	2	1	30	0.86 [0.42, 1.00]	0.94 [0.79, 0.99]
Kwok 2015	33	35	6	35	0.85 [0.69, 0.94]	0.50 [0.38, 0.62]
Lincoln 2008	11	2	2	19	0.85 [0.55, 0.98]	0.90 [0.70, 0.99]
Nouri 1993	16	2	3	6	0.84 [0.60, 0.97]	0.75 [0.35, 0.97]
Lundqvist 1999	21	6	5	25	0.81 [0.61, 0.93]	0.81 [0.63, 0.93]
Nef 2013	8	21	2	49	0.80 [0.44, 0.97]	0.70 [0.58, 0.80]
Fleitscher 2012	78	8	20	10	0.80 [0.70, 0.87]	0.56 [0.31, 0.78]
Akinwuntan 2006	27	2	7	32	0.79 [0.62, 0.91]	0.94 [0.80, 0.99]
Akinwuntan 2005	23	2	6	7	0.79 [0.60, 0.92]	0.78 [0.40, 0.97]
Classen 2009	75	59	20	220	0.79 [0.69, 0.87]	0.79 [0.74, 0.83]
Hoggarth 2013	122	35	33	89	0.79 [0.71, 0.85]	0.72 [0.63, 0.79]
Myers 2000	28	7	8	43	0.78 [0.61, 0.90]	0.86 [0.73, 0.94]
Aslaksen 2013	27	6	8	37	0.77 [0.60, 0.90]	0.86 [0.72, 0.95]
Hargrave 2012	30	19	9	18	0.77 [0.61, 0.89]	0.49 [0.32, 0.66]
Niewoehner 2012	42	30	14	68	0.75 [0.62, 0.86]	0.69 [0.59, 0.78]
De Raedt 2001	30	5	10	35	0.75 [0.59, 0.87]	0.88 [0.73, 0.96]
Lundberg 2003	14	7	5	23	0.74 [0.49, 0.91]	0.77 [0.58, 0.90]
Ott 2013	30	11	11	23	0.73 [0.57, 0.86]	0.68 [0.49, 0.83]
Manning 2014	35	42	14	31	0.71 [0.57, 0.83]	0.42 [0.31, 0.55]
Bedard 2008	127	58	53	107	0.71 [0.63, 0.77]	0.65 [0.57, 0.72]
Bowers 2013	50	35	21	119	0.70 [0.58, 0.81]	0.77 [0.70, 0.84]
Classen 2011	56	13	24	59	0.70 [0.58, 0.79]	0.82 [0.71, 0.90]
Jones 2014	45	22	21	42	0.68 [0.56, 0.79]	0.66 [0.53, 0.77]
Classen 2013	67	117	32	378	0.68 [0.58, 0.77]	0.76 [0.72, 0.80]
Oswanski 2007	132	68	70	194	0.65 [0.58, 0.72]	0.74 [0.68, 0.79]
Freund 2005	37	1	20	44	0.65 [0.51, 0.77]	0.98 [0.88, 1.00]
Vaucher 2014	14	134	8	248	0.64 [0.41, 0.83]	0.65 [0.60, 0.70]
Worringham 2006	12	4	7	23	0.63 [0.38, 0.84]	0.85 [0.66, 0.96]
Carr 2011	41	2	24	32	0.63 [0.50, 0.75]	0.94 [0.80, 0.99]
Selander 2010	49	56	42	48	0.54 [0.43, 0.64]	0.46 [0.36, 0.56]
Korteling 1996	7	5	6	20	0.54 [0.25, 0.81]	0.80 [0.59, 0.93]
Sommer 2010	29	11	25	113	0.54 [0.40, 0.67]	0.91 [0.85, 0.95]
Radford 2004	14	6	14	68	0.50 [0.31, 0.69]	0.89 [0.80, 0.95]
Schanke 2000	6	6	6	19	0.50 [0.21, 0.79]	0.76 [0.55, 0.91]
Akinwuntan 2012	10	2	10	66	0.50 [0.27, 0.73]	0.97 [0.90, 1.00]
Bliokas 2011	20	6	21	57	0.49 [0.33, 0.65]	0.90 [0.80, 0.96]
George 2010	3	7	4	29	0.43 [0.10, 0.82]	0.81 [0.64, 0.92]
McKenna 2007	61	6	86	236	0.41 [0.33, 0.50]	0.97 [0.94, 0.99]
Lincoln 2014	7	5	16	74	0.30 [0.13, 0.53]	0.94 [0.86, 0.98]
Hoggarth 2010	4	2	12	42	0.25 [0.07, 0.52]	0.95 [0.85, 0.99]
Crizzle 2012	3	3	26	136	0.10 [0.02, 0.27]	0.98 [0.94, 1.00]



Diagnostic test accuracy (DTA)

Tips and tricks

https://www.equator-network.org/

Preferred reporting items for journal and conference abstracts of systematic reviews and meta-analyses of diagnostic test accuracy studies (PRISMA-DTA for Abstracts): checklist, explanation, and elaboration.

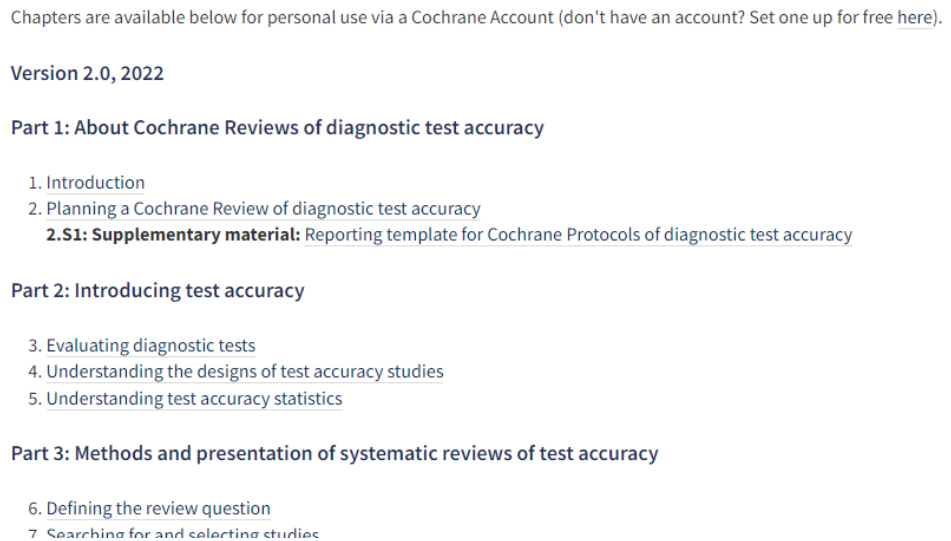
https://www.bmj.com/content/372/bmj.n265

Protocol and further reading

PRISMA

- Follow the PRISMA guidance for your protocol
- For further reading see the information package or visit the Cochrane Handbook for Systematic Reviews of Diagnostic Test Accuracy (version 2)

https://training.cochrane.org/handbook-diagnostic-test-accuracy



Chapters are available below for personal use via a Cochrane Account (don't have an account? Set one up for free here).

Version 2.0, 2022

Part 1: About Cochrane Reviews of diagnostic test accuracy

1. Introduction
2. Planning a Cochrane Review of diagnostic test accuracy
   2.S1: Supplementary material: Reporting template for Cochrane Protocols of diagnostic test accuracy

Part 2: Introducing test accuracy

3. Evaluating diagnostic tests
4. Understanding the designs of test accuracy studies
5. Understanding test accuracy statistics

Part 3: Methods and presentation of systematic reviews of test accuracy

6. Defining the review question
7. Searching for and selecting studies

Prognosis

Formulate an prognisis question

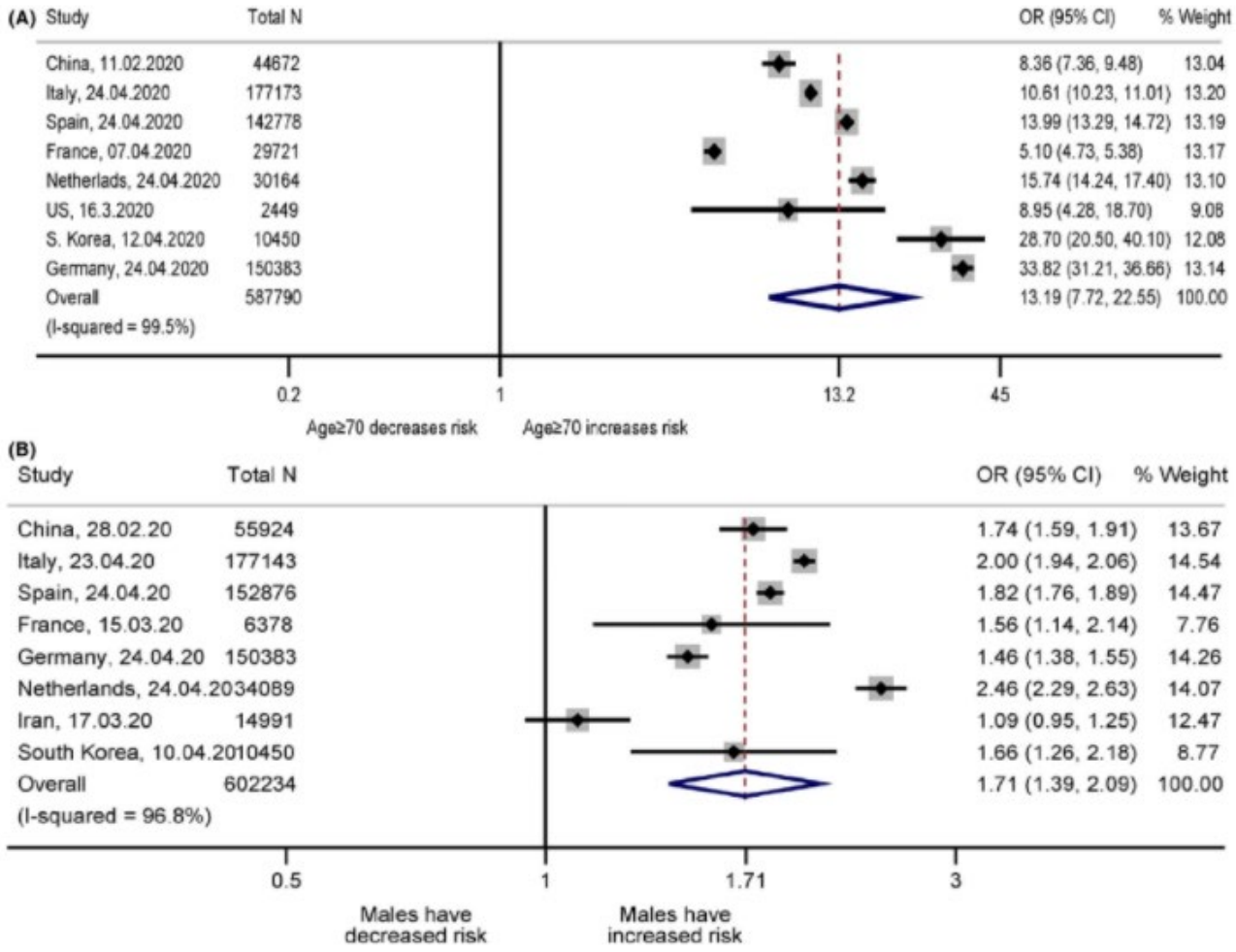
1. Formulate the question
   - PFO: **P**opulation – prognostic **F**actors – **O**utcome

5. Assess risk of bias
   - QUIPS
   http://methods.cochrane.org/sites/methods.cochrane.org.prognosis/files/uploads/QUIPS%20tool.pdf

7. Collate and analyse data
   - For example Prediction of outcome
   Systematic Reviews in Health Research: Meta-Analysis in Context**.** Chapter 17. Systematic reviews of Prognostic Factors studies. https://onlinelibrary.wiley.com/doi/10.1002/9781119099369.ch17

8. GRADE
   – Guidelines 28: Use of GRADE for the assessment of evidence about prognostic factors: rating certainty in identification of groups of patients with different absolute risks
   https://www.jclinepi.com/article/S0895-4356(19)30873-X/fulltext

Prognosis: meta-analysis



European Journal of Clinical Investigation

ESCI

ORIGINAL ARTICLE | Free Access

Predictors of adverse prognosis in COVID-19: A systematic review and meta-analysis

Stefano Figliozzi, Pier Giorgio Masci, Navid Ahmadi, Lara Tondi, Evangelia Koutli, Alberto Aimo, Kimon Stamatelopoulos, Meletios-Athanasios Dimopoulos, Alida L. P. Caforio, Georgios Georgiopoulos

First published: 29 July 2020 | https://doi.org/10.1111/eci.13362 | Citations: 70

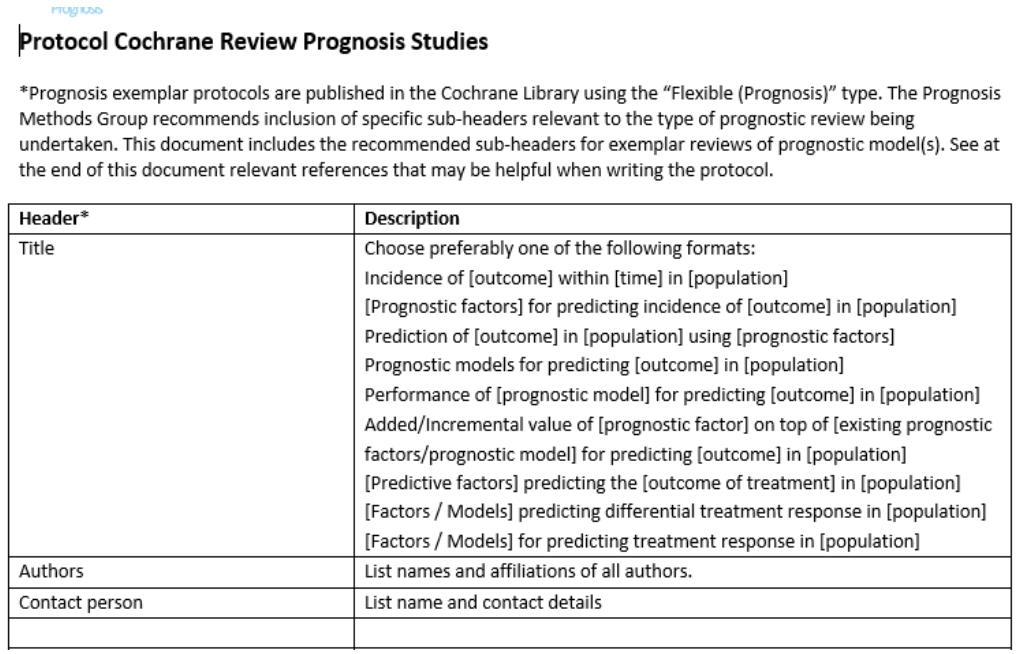
Prognostic studies

Tips and tricks

QUIPS: the Quality In Prognostic Studies tool, Hayden et al, Assessing Bias in Studies of Prognostic Factors, *Ann Intern Med.* 2013;158:280-286.

https://www.acpjournals.org/doi/10.7326/0003-4819-158-4-201302190-00009?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed

https://methods.cochrane.org/prognosis/tools



Protocol Cochrane Review Prognosis Studies

*Prognosis exemplar protocols are published in the Cochrane Library using the "Flexible (Prognosis)" type. The Prognosis Methods Group recommends inclusion of specific sub-headers relevant to the type of prognostic review being undertaken. This document includes the recommended sub-headers for exemplar reviews of prognostic model(s). See at the end of this document relevant references that may be helpful when writing the protocol.

Header*	Description
Title	Choose preferably one of the following formats: Incidence of [outcome] within [time] in [population] [Prognostic factors] for predicting incidence of [outcome] in [population] Prediction of [outcome] in [population] using [prognostic factors] Prognostic models for predicting [outcome] in [population] Performance of [prognostic model] for predicting [outcome] in [population] Added/Incremental value of [prognostic factor] on top of [existing prognostic factors/prognostic model] for predicting [outcome] in [population] [Predictive factors] predicting the [outcome of treatment] in [population] [Factors / Models] predicting differential treatment response in [population] [Factors / Models] for predicting treatment response in [population]
Authors	List names and affiliations of all authors.
Contact person	List name and contact details

Summary

- The systematic review review process is basically the same regardless of (quantitative) core question
- Some elements differ
  - Structuring the research question
  - Assessing risk of bias
  - Quantitative synthesis (meta-analysis)
  - GRADE
- There are guidelines and tools to inform the process in the differing elements
- QUESTIONS?

FHI
Folkehelseinstituttet

Scoping reviews (mapping reviews)

What are they and what goes into a protocol

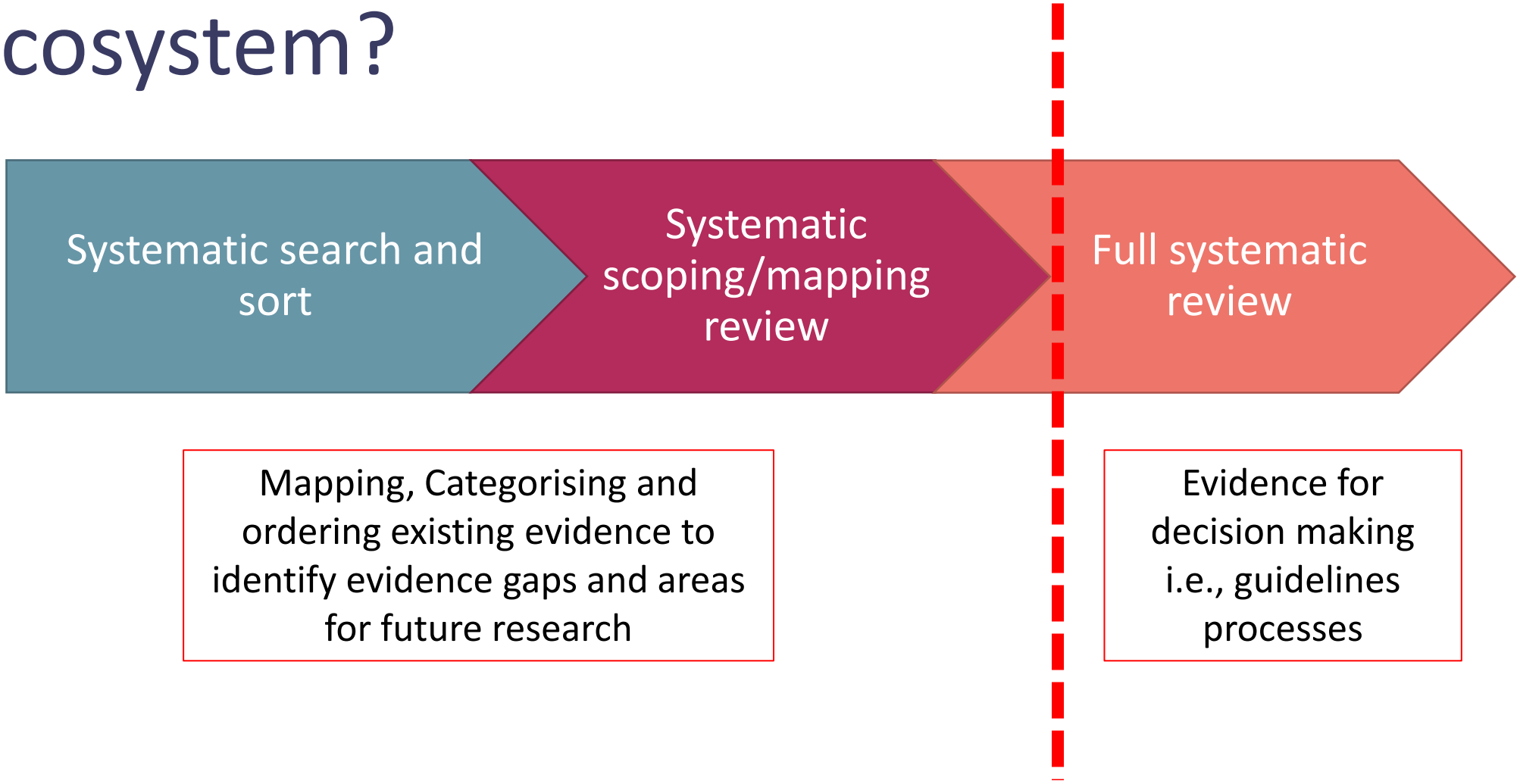
What is a scoping review?

What is a scoping review?

Also known as a mapping review

- «A scoping review or scoping study is a form of knowledge synthesis that addresses an exploratory research question aimed at mapping key concepts, types of evidence and gaps in research related to related to a defined area or field by systematically searching , selecting and synthesizing existing knowledge» (Colquhoun et al 2014)
- «Scoping reviews are used to map the concepts underpinning a research area and the main sources and types of evidence available» (Arksey and O'Malley 2005)
- The Joanna Briggs Institute has published a guidance document for the conduct of a scoping review
  - (Tricco, Lillie et al. 2016)
  - https://knowledgetranslation.net/portfolios/the-prisma-scr2/

Where do they fit in the evidence ecosystem?

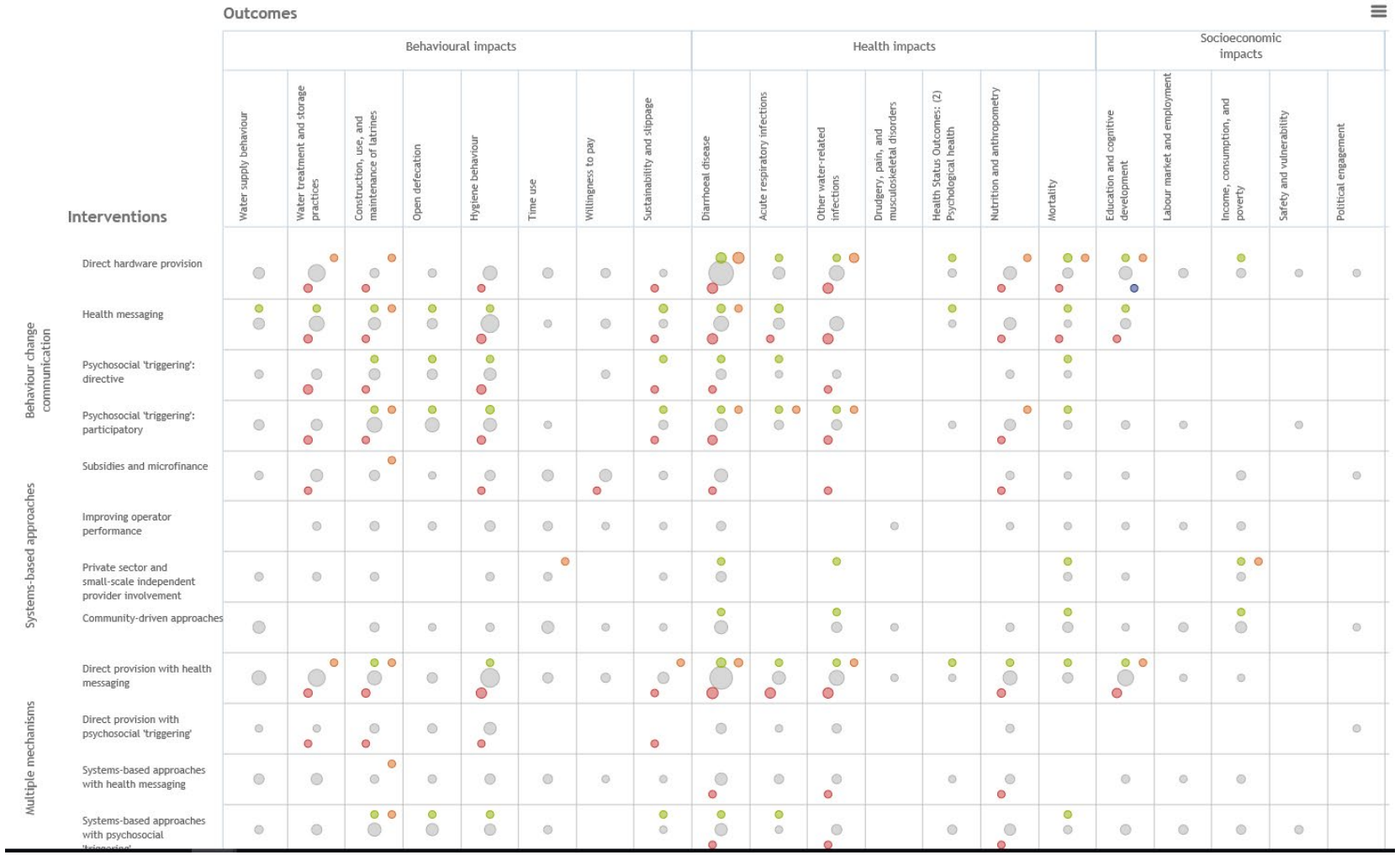


An example of defining the limits of a scoping review

«We conducted a systematic mapping review. It provides an overview of the empirical research that met our inclusion criteria. The studies (publications) are presented individually. We neither critically appraised the methodological quality of the included studies nor analysed the results across the studies. This review gives an insight into and description of the research field and is not meant to be used to support evidence-based decision making. We did not take into consideration study authors theoretical or ideological perspective or their position in the debate around parental alienation syndrome as a diagnosis requiring treatment or a life event needing to be handled. It is outside the scope of this report to explore these theoretical and ideological debates occurring within this field of research. “

Evidence gap maps

Available at 3ie (http://www.3ieimpact.org/en/evidence/gap-maps/)



Conducting a scoping review

Formulating the question

- Population
- Concept
- Context

The scoping review framework

Peters et al 2015 building on Arksey and O'Malley 2005

1. Defining and aligning the objective(s) and question(s)
2. Developing and aligning the inclusion criteria with the objective(s) and question(s)
3. Describing the planned approach to evidence searching and selection
4. Searching for the evidence
5. Selecting the evidence
6. Extracting the evidence
7. Charting the evidence
8. Summarizing the evidence in relation to objective(s) and question(s)

Consultation with information specialists, experts and other people with knowledge of methodology or topic throughout the process

PRISMA extension for scoping reviews checklist

- 20 essential reporting items and 2 optional items
- Examples and text descriptions
- You can find the checklist here:
- https://knowledgetranslation.net/portfolios/the-prisma-scr2/

Annals of Internal Medicine RESEARCH AND REPORTING METHODS

PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation

Andrea C. Tricco, PhD, MSc; Erin Lillie, MSc; Wasifa Zarin, MPH; Kelly K. O'Brien, PhD, BScPT; Heather Colquhoun, PhD; Danielle Levac, PhD, MSc, BScPT; David Moher, PhD, MSc; Micah D.J. Peters, PhD, MA(Q); Tanya Horsley, PhD; Laura Weeks, PhD; Susanne Hempel, PhD; Elie A. Akl, MD, PhD, MPH; Christine Chang, MD, MPH; Jessie McGowan, PhD; Lesley Stewart, PhD, MSc; Lisa Hartling, PhD, MSc, BScPT; Adrian Aldcroft, BA(Hons), BEd; Michael G. Wilson, PhD; Chantelle Garritty, MSc; Simon Lewin, PhD; Christina M. Godfrey, PhD, RN; Marilyn T. Macdonald, PhD, MSN; Etienne V. Langlois, PhD; Karla Soares-Weiser, MD, PhD; Jo Moriarty, MA; Tammy Clifford, PhD, MSc; Özge Tunçalp, MD, PhD, MPH; and Sharon E. Straus, MD, MSc

Scoping reviews, a type of knowledge synthesis, follow a systematic approach to map evidence on a topic and identify main concepts, theories, sources, and knowledge gaps. Although more scoping reviews are being done, their methodological and reporting quality need improvement. This document presents the PRISMA-ScR (Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews) checklist and explanation. The checklist was developed by a 24-member expert panel and 2 research leads following published guidance from the EQUATOR (Enhancing the QUAlity and Transparency Of health Research) Network. The final checklist contains 20 essential reporting items and 2 optional items. The authors provide a rationale and an example of good reporting for each item. The intent of the PRISMA-ScR is to help readers (including researchers, publishers, commissioners, policymakers, health care providers, guideline developers, and patients or consumers) develop a greater understanding of relevant terminology, core concepts, and key items to report for scoping reviews.

Ann Intern Med. 2018;169:467-473. doi:10.7326/M18-0850 **Annals.org**
For author affiliations, see end of text.
This article was published at Annals.org on 4 September 2018.

Scoping reviews can be conducted to meet various objectives. They may examine the extent (that is, size), range (variety), and nature (characteristics) of the evidence on a topic or question; determine the value of undertaking a systematic review; summarize findings from a body of knowledge that is heterogeneous in methods or discipline; or identify gaps in the literature to aid the planning and commissioning of future research (1, 2). A recent scoping review by members of our team suggested that although the number of scoping reviews in the literature is increasing steadily, methodological and reporting quality needs to improve in order to facilitate complete and transparent reporting (1). Results from a survey on scoping review terminology, definitions, and methods showed a lack of consensus on how to conduct and report scoping reviews (3).

The Joanna Briggs Institute (JBI) published a guidance document for the conduct of scoping reviews (4) (updated in 2017 [5]) based on earlier work by Arksey and O'Malley (6) and Levac and colleagues (7). However, a reporting guideline for scoping reviews currently does not exist.

Reporting guidelines outline a minimum set of items to include in research reports and have been shown to increase methodological transparency and uptake of research findings (8, 9). Although a reporting guideline exists for systematic reviews—the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) statement (10)—scoping reviews serve a different purpose (11). Systematic reviews are useful for answering clearly defined questions (for example, "Does this intervention improve specified outcomes when compared with a given comparator in this population?"), whereas scoping reviews are useful for answering much broader questions (such as "What is the nature of the evidence for this intervention?" or "What is known about this concept?"). Given the difference in objectives, and therefore in the methodological approach (such as presence vs. absence of a risk-of-bias assessment or meta-analysis), scoping reviews should have different essential reporting items from systematic reviews. Consequently, some PRISMA items may not be appropriate, whereas other important considerations may be missing (12-14). It was decided that a PRISMA extension for scoping reviews was needed to provide reporting guidance for this specific type of knowledge synthesis. This extension is also intended to apply to evidence maps (15, 16), which share similarities with scoping reviews and involve a systematic search of a body of literature to identify knowledge gaps, with a visual representation of results (such as a figure or graph).

METHODS

The PRISMA-ScR (PRISMA extension for Scoping Reviews) was developed according to published guidance by the EQUATOR (Enhancing the QUAlity and Transparency Of health Research) Network for the development of reporting guidelines (9). The St. Michael's Hospital Research Ethics Board granted research ethics approval for this study on 15 August 2016.

See also:
Editorial comment 502
Web-Only
Appendix: Explanation and Elaboration
Supplement

Methods section

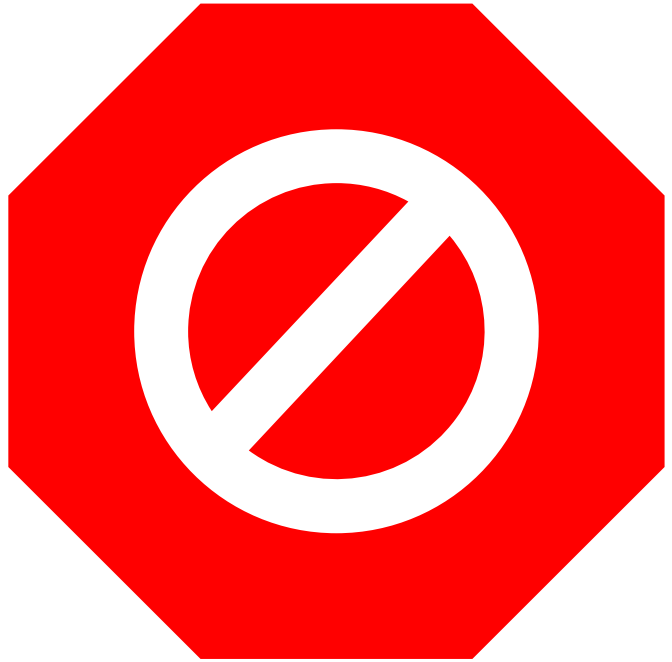
- Setting the frame or scope of your scoping review
  - **Population**
  - **Concept**
  - **Context**
    - Study design
    - Language
    - Date

Interventions against welfare fraud: A mapping review

Population	The general public, the actual users of the state system (those receiving support)
Concept	Interventions to prevent or discover/catch fraud before or after payment for different types of welfare payments. Experiences with working on interventions to prevent welfare fraud
Context	Europe, USA, Canada, Australia, New Zealand
Study design	All empirical research, independent of design
Langauge	English, French and Scandinavian Languages
Date	No limitations

A scoping review (usually) does not….

- Have a critical assessment of the included studies
- Conduct a full synthesis or meta analysis of the results



Findings

- Narrative text with tables and graphs

Kasuistikker/kasusstudier ligner på kvalitative studier, men her studerer man detaljert et "tilfelle", for eksempel en person, eller en gruppe. De fleste av kasusstudiene vi identifiserte i denne kartleggingen brukte skriftlige notater fra klientterapi eller juridiske dokumenter som grunnlag. De undersøkte spørsmål om ulike behandlinger eller som verktøy, for eksempel for å undersøke om støttearbeidere var enig i eksistens av foreldrefremmedgjøring i en sak versus en annen.

Åtte studier brukte blandet metode. Det innebærer at de har undersøkt forskningsspørsmålet sitt med bruk av flere forskjellige forskningsmetoder. For eksempel, ved både å analysere juridiske dokumenter angående foreldrefremmedgjøring og intervjue folk om deres opplevelser med foreldrefremmedgjøring, for så å se på disse resultatene samlet. Formålet med dette er å se på et fenomen fra flere innfallsvinkler.

Tabell 2: *Studiedesign i de inkluderte studiene*

Studiedesign	**Antall**
Tversnittstudie	23
Kvalitativ	10
Kasuistikk	5
Blandet metode	8
Annet*	8
Systematisk oversikt	1

* For eksempel; kvantitativ ikke-eksperimentell studie, sekundær dataanalyse av journaldata

Populasjoner

Vi identifiserte 45 studier som presenterer barns perspektiver (tabell 3). Disse favner imidlertid både perspektivene til barn under 16 år (n=22), og voksne som retrospektivt ser tilbake på sine erfaringer som barn eller som beskriver hvordan samværsvegring (i hovedsak parental alienation syndrome (PAS)/foreldrefremmedgjøring) i barndommen virker inn på mental helse, eller håndtering av eller evne til parforhold i voksen alder. Et mindretall av studiene, 16 studier, omhandler foreldre og nære familiemedlemmer. Dette gjaldt ofte i studier der hele familien deltok i et tiltak eller en terapi.

Tabell 3: *Populasjon i de inkluderte studiene*

Populasjon	**Antall**
Barn ≤16 år som over tid uttrykker betydelig motstand mot kontakt og samvær med en av sine foreldre etter samlivsbrudd	22
Voksne som uttaler seg om sine erfaringer fra de var ≤16 år og som over tid uttrykte betydelig motstand mot kontakt og samvær med en av sine foreldre etter samlivsbrudd	23
Foreldre og nære familiemedlemmer av barnet som avviser en forelder	16

Questions

How would you frame these questions?

- Examining the relationship between Intolerance of Uncertainty and depression during Covid-19 and the effect of worries and demographic characteristics on the relationship: A systematic Review
- Assessment of the core elements of antimicrobial stewardship program in hospitals in the African continent
- **Are Positive Youth Development's (PYD) measures psychometrically sound?**
- **What is the cost-effectiveness of Cognitive Behavioral Therapy (CBT) compared to Acceptance and Commitment Therapy (ACT) in treating depression among ethnic youth living in Canada, UK, or Scandinavia?**
- **The objective of this systemic review study about the Risk of venous thromboembolism in women taking the combined oral Contraceptive is to estimate venous thrombosis risk associated with COC use compared with non-user.**

Group work

15 mins

- **Room 1: Mojtaba:** Are Positive Youth Development's (PYD) measures psychometrically sound?
- **Room 2: Mojdeh**: Examining the relationship between Intolerance of Uncertainty and depression during Covid-19 and the effect of worries and demographic characteristics on the relationship: A systematic Review
- **Room 3: Ricardo:** What is the cost-effectiveness of Cognitive Behavioral Therapy (CBT) compared to Acceptance and Commitment Therapy (ACT) in treating depression among ethnic youth living in Canada, UK, or Scandinavia?
- **Room 4: Khadeja:** The objective of this systemic review study about the Risk of venous thromboembolism in women taking the combined ora lContraceptiveis to estimate venous thrombosis risk associated with COC use compared with non-user**.**