



Norwegian Institute of Public Health

# Welcome!

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Norwegian Institute of Public Health

August 24th 2022

# Plan for the day

- 09.00 Introduction of participants and lecturers (LL)
- 09.15 Aim and course outline (LL)
- 09.45 Types of systematic reviews (LJL)
- 10:15 Question formation (HA)
- 10.45 -11.00 Break
- 11.00 Introduction to searching (MJ, IK)
- 11.30 Assignments, supervision, seminar and work in small groups (LL)
- 12.00 - 14.00 Small groups - question formation

# Introductions

Please introduce yourself including:

- Your name
- Where you are based
- Whether you have done a systematic review of any kind before!
- Please also sign up in the chat box

# Zoom «manners»



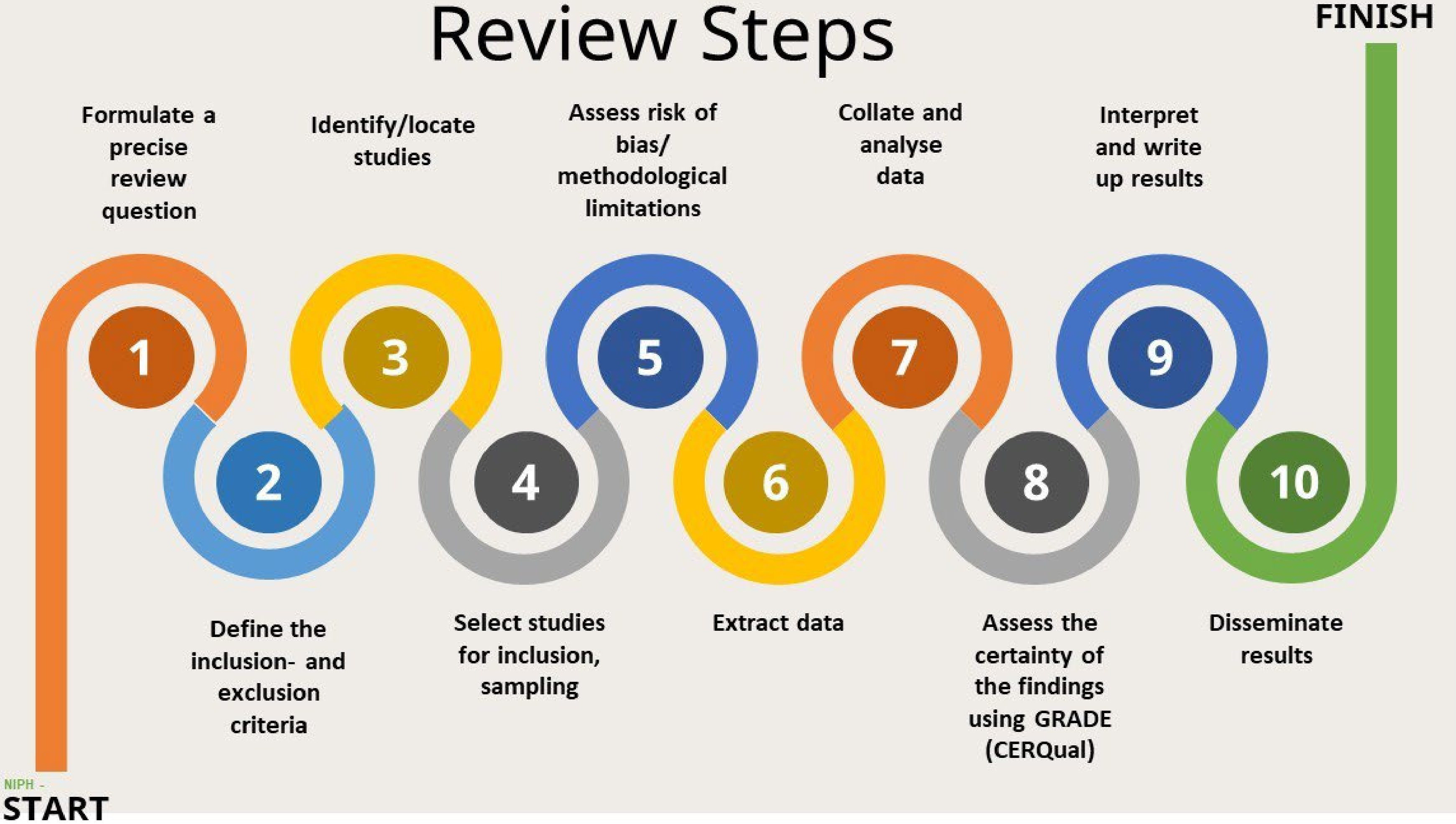
- Everyone's contributions are welcome and important
- Please use the chat box for questions
- Please turn zoom to mute, but keep the video on
- Please let one of the facilitators know if you have concerns about the course process



# What we will cover and what we will not cover in the course

- The course is focused on systematic reviews of the effects of interventions
  - Although the principles apply to systematic reviews addressing any kind of question, we will have only brief inputs on the methods for these other kinds of reviews
- It is not feasible in the time available to ensure that you feel proficient in all aspects of systematic reviewing
  - We hope to share general principles and provide a starting point for your work in this area

# Review Steps



# Expectations

## Students

- Use provided online resources and reading list
- At least 80% attendance, including group work
- Estimated hours is 125 hours = 5 ECTS credits
- Hand in all assignments and have them approved
- Pass exam

## Lecturers, supervisors and examiner

- Provide online resources and reading list
- Answer e-mails within 2 working days
- Available during group work for questions
- Give lectures
- Check assignments
- Supervision with search specialist and supervisor
- Evaluate exam



# Thanks to....

- Norwegian Research School of Global Health and NTNU
- Elin Dvergsdal, coordinator at NTNU
- Teaching team
- Teaching network and Simon Lewin at NIPH for sharing slides

# Questions?



Norwegian Institute of Public Health



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# Types of systematic reviews

Systematic review (SR)	Health technology assessment (HTA)	Systematic scoping review	Evidence and gap map
<p><b>SR of primary studies:</b></p> <ul style="list-style-type: none"> <li>• Prevalence</li> <li>• Aetiology</li> <li>• Diagnosis</li> <li>• <b>Effect</b></li> <li>• Prognosis</li> <li>• Qualitative evidence</li> </ul> <p><b>Overview of systematic reviews:</b></p> <ul style="list-style-type: none"> <li>• One population, several interventions</li> <li>• Several populations, one intervention</li> <li>• One population, one intervention, several outcomes</li> <li>• Several populations and interventions</li> </ul>	<p><b>SR +:</b></p> <ul style="list-style-type: none"> <li>• Health economic evaluation</li> <li>• Legal aspects</li> <li>• Ethical aspects</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and describe extent and characteristics in the literature regarding a specific topic</li> <li>• Summarize and communicate research on a specific topic</li> <li>• Identify knowledge gaps and suggest further research</li> <li>• Identify needs for a systematic review on a topic</li> </ul>	<ul style="list-style-type: none"> <li>• Identify knowledge gaps concerning effects of interventions in a thematic area</li> <li>• Tool for research prioritization and strategic research commissioning</li> </ul>

# SR of primary studies, overview of SR, Qualitative Evidence Synthesis

Health Policy and Planning, 32, 2017, 110–124  
doi: 10.1093/heapol/czw088  
Advance Access Publication Date: 31 July 2016  
Review



## The effectiveness of social marketing in global health: a systematic review

Rebecca Firestone,<sup>1,\*</sup> Cassandra J Rowe,<sup>2</sup> Shilpa N Modi<sup>3</sup> and Dana Sievers<sup>1</sup>





<sup>1</sup>Population Services International, 1120 19th Street NW, Suite 600, Washington, DC 20036, USA, <sup>2</sup>North Carolina Coalition Against Domestic Violence and <sup>3</sup>The QED Group LLC

\*Correspondence author. Population Services International, 1120 19th Street NW, Suite 600, Washington, DC 20036, USA.  
E-mail. rfirestone@psi.org

Open access

Original research

## BMJ Open Health effects of climate change: an overview of systematic reviews

Rhea J Rocque ,<sup>1</sup> Caroline Beaudoin,<sup>2</sup> Ruth Ndjaboue ,<sup>2,3</sup> Laura Cameron,<sup>1</sup> Louann Poirier-Bergeron,<sup>2</sup> Rose-Alice Poulin-Rheault,<sup>2</sup> Catherine Fallon,<sup>2,4</sup> Andrea C Tricco ,<sup>5,6</sup> Holly O Witteman ,<sup>2,3</sup>



DOI: 10.1111/1471-0528.15015  
www.bjog.org

Systematic review

## Respectful care during childbirth in health facilities globally: a qualitative evidence synthesis

E Shakibazadeh,<sup>a</sup> M Namadian,<sup>b</sup> MA Bohren,<sup>c</sup> JP Vogel,<sup>c</sup> A Rashidian,<sup>d,e</sup> V Nogueira Pileggi,<sup>f,9</sup> S Madeira,<sup>h</sup> S Leathersich,<sup>i</sup> Ö Tunçalp,<sup>c</sup> OT Oladapo,<sup>c</sup> JP Souza,<sup>c</sup> AM Gülmezoglu<sup>c</sup>

# Health technology assessment (HTA)

## HEALTH TECHNOLOGY ASSESSMENT (WINCHESTER, ENGLAND)

Various

[Health Technol Assess.](#) 2013 Sep; 17(37): 1-372, v-vi.

PMCID: PMC4781620

doi: [10.3310/hta17370](https://doi.org/10.3310/hta17370)

PMID: [24021245](https://pubmed.ncbi.nlm.nih.gov/24021245/)

### **Systematic review and meta-analysis of the current evidence on the duration of protection by bacillus Calmette-Guérin vaccination against tuberculosis.**

[I Abubakar](#), [L Pimpin](#), [C Ariti](#), [R Beynon](#), [P Mangtani](#), [J A C Sterne](#), [P E M Fine](#), [P G Smith](#), [M Lipman](#), [D Elliman](#), [J M Watson](#), [L N Drumright](#), [P F Whiting](#), [E Vynnycky](#), and [L C Rodrigues](#)

# Systematic scoping review

**PLOS ONE**

 OPEN ACCESS  PEER-REVIEWED

RESEARCH ARTICLE

## The winding road to health: A systematic scoping review on the effect of geographical accessibility to health care on infectious diseases in low- and middle-income countries

Fleur Hierink , Emelda A. Okiro, Antoine Flahault, Nicolas Ray

Published: January 4, 2021 • <https://doi.org/10.1371/journal.pone.0244921>

# Evidence and gap map

Anadya Portela  
 Jennifer Stevenson  
 Rachael Hinton  
 Marianne Emler  
 Stella Tsoli  
 Birte Snilstveit

## Social, behavioural and community engagement interventions for reproductive, maternal, newborn and child health

An evidence gap map  
 December 2017

Evidence Gap Map Report 11

Health

### Outcomes

Interventions	Knowledge and attitudes			Household dynamics / communication			Care practices			
	Knowledge and attitudes of individuals and households	Social norms in the community for RMNCH	Knowledge and attitudes of health providers for community engagement	Couple / mothers / mothers-in-law /parent-child communication	Parenting skills	Joint decision-making in the household	Self-care practices	Caregiver practices	Family planning method use	Household environmental practices
Home visits	●●●●●		●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
Facility-based interpersonal communication	●●●●●		●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
Group interpersonal communication - any setting	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●



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# 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*)

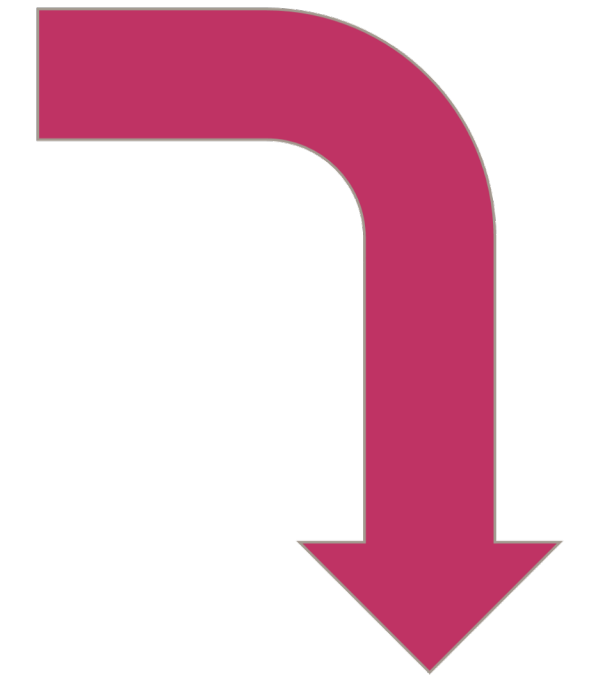
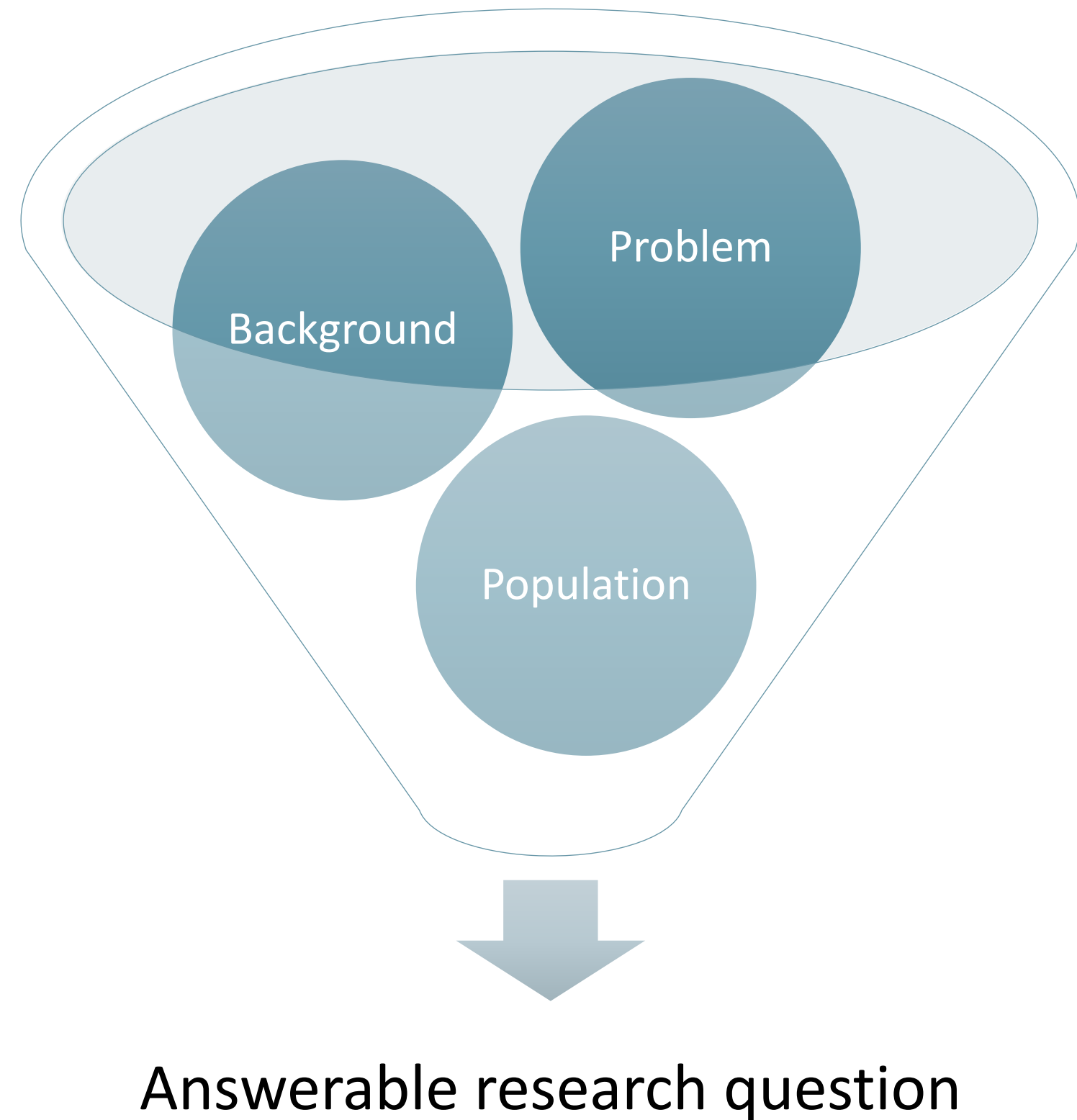
How can we decide if someone has this condition?  
(*diagnostics*)

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*)

# From general to specific



# Different tools to help be specific...

- **PICO**

**P**opulation

**I**ntervention

**C**omparison and /or **C**ontext

**O**utcome

- **SPIDER**

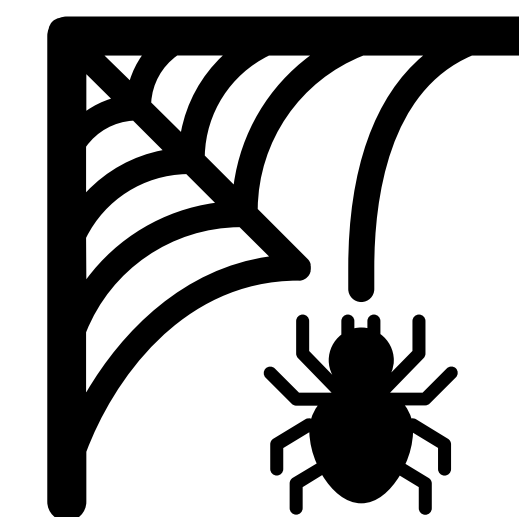
**S**ample

**P**henomenon of **I**nterest

**D**esign

**E**valuation

**R**esearch type



# A worked example

<b>General problem</b>	Too few planned clinical trials or clinical trials for Dementia
<b>What aspect of the problem</b>	The number of trials planned and in existence- what molecules are currently being tested
<b>What type of research</b>	Clinical trials- any publication that has reported a protocol or any phase or termination of an RCT- Reported in ClinGov- has to be a publication
<b>Population</b>	Patients with dementia, globally, diagnosed with criteria from 2017
<b>Intervention/ Topic of interest</b>	Pharmaceutical interventions
<b>Context</b>	?
<b>Comparison (Evaluation)</b>	Any comparison (using placebo or medication dosage),
<b>Outcome if applicable</b>	Symptomatic treatment or disease modifier treatment

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# Searching for literature



NRSGH Systematic Review and meta-analysis course



# A well framed research question

(e.g. a defined population and intervention)



# A well developed search strategy

(one that reflects the question and is able to find records that answer the question)



# A well developed sytematic review

(a useful one)

# The search process for a SR should be:

Systematic	Comprehensive	Transparent
<p>You should develop search strategies that <b>reflect</b> your research question</p> <p>You need to plan for <b>where</b> and <b>how</b> to search</p> <p>You need to <b>adapt the search strategy to each database</b> you have decided to search</p>	<p>While taking into account available time and resources, you should <b>search as wide as possible</b></p> <p>Try to balance between strategies that are <b>not too broad nor too narrow</b></p> <p>You should select <b>more than one database</b>, - according to your review topic and according to relevant study design</p>	<p>You should <b>report the search process</b> so that others can review your search methods, and if they want to, replicate them</p> <p><b>In the protocol:</b> You should report all the databases and other sources you <b>will search</b>, and at least <b>one</b> search strategy that you will use</p> <p><b>In the review:</b> You should report all the databases and other sources you <b>have searched</b>, and <b>all</b> strategies used</p>

**Topic:** Vaccination

**Problem:** Many children do not receive all recommended vaccines

**Research questions:**

1. What is the effect of educating parents about childhood vaccination?
2. What are the factors influencing acceptance of childhood vaccination?

# 1. What is the effect of educating parents about childhood vaccination?

Search concepts	Search strategy - results	Databases	
1. Population	1. Parents (population)	1000	1. Epistemonikos
2. Intervention	2. Education (intervention)	1000	2. CENTRAL, Cochrane Library
3. Study design	3. Childhood vaccination (intervention)	1000	3. Global Index Medicus, WHO
	4. 1 and 2 and 3	20	
	5. RCT (study design - effect)	1000	
	6. 4 and 5	2	

## 1. What is the effect of educating parents about childhood vaccination?

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	6. 4 and 5	2	

## 2. What are the factors influencing acceptance of childhood vaccination?

Search concepts	Search strategy - results		Databases
1. Phenomenon of interest	1. Childhood vaccination (phen. of int.)	1000	1. Epistemonikos
2. Research type	2. Qualitative studies (research type)	1000	2. PubMed
	3. 1 and 2	10	3. CINAHL, Ebsco
			4. SCOPUS, Elsevier

# Reporting the search process in a protocol: two examples

## Searches

Systematic searches to identify studies meeting the eligibility criteria will be executed using PubMed and Web of Science electronic bibliographic databases. Search dates: Jan 1, 2000 to present

## Search methods for identification of studies

### Electronic searches

Together with the Cochrane Effective Practice and Organisation of Care (EPOC) group Information Specialist, we will adapt a search strategy previously used for a related Cochrane qualitative evidence synthesis (Munabi-Babigumira 2017). We will include a methodological filter for qualitative studies, and we will apply no limits on language or date of publication. We will search the following databases from inception to the date of the search:

- MEDLINE, Ovid; 1946 to present
- CINAHL EBSCOhost (Cumulative Index to Nursing and Allied Health Literature); 1981 to present
- Global Index Medicus, World Health Organization ([www.globalindexmedicus.net/](http://www.globalindexmedicus.net/)); 1980 to present

See Appendix 1 for the MEDLINE search strategy, which will be adapted to the other databases. All other search strategies will be included in the Appendices of the final review.

### Searching other sources

We will review the reference lists of all included articles and key papers such as related systematic reviews for any further relevant studies. We will conduct a citation search for all the included studies using Web of Science Core Collection, Clarivate Analytics.

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# Assignments and exam

Date	Activity	Assignment
August 15th	Write a research question in a PICOS format	Submit draft research question and type of review (for example: effect, qualitative evidence synthesis, prevalence etc) to <a href="mailto:heather.ames@fhi.no">heather.ames@fhi.no</a> by <b>August 15<sup>th</sup></b> .
August 24 <sup>th</sup> - September 25 <sup>th</sup>	Complete online learning resources and reading individually	None
September 14th	After discussion in small groups fill in the table in Appendix 1 (information packet) for all group members	Submit group assignment to <a href="mailto:heather.ames@fhi.no">heather.ames@fhi.no</a> by 16.00 ECT September 14 <sup>th</sup> .
September 21	Write your first protocol draft choosing an appropriate template referred to in Appendix 2 (Information packet). Maximum two pages and can be in bullet points.	Submit individual assignment to <a href="mailto:heather.ames@fhi.no">heather.ames@fhi.no</a> by 16.00 ECT September 21 <sup>th</sup> .
October 31st	Complete your protocol using the appropriate template. Maximum length 10 pages excluding references and appendixes	Submit via Experia by 14.00 October 31 <sup>st</sup> . Information on how to do this will be provided by NTNU



# Supervision

- You will be assigned a search specialist tutor and a systematic review specialist tutor
- You can have up to an hour tutorial with either in the period between the end of the seminar (September 28<sup>th</sup>) and submission of the exam (October 31<sup>st</sup>)
- Your tutor will contact you to find a time for a digital tutorial, either via e-mail or doodle

# Schedule for seminar – preliminary

September 26th	September 27th	September 28th
<b>Types of systematic reviews</b> <b>Literature search</b>	<b>Selection of articles, screening, and data extraction</b> <b>Risk of bias</b> <b>Synthesis and meta- analysis</b>	<b>GRADE</b> <b>Protocol development and team composition</b>
<b>09.00 -11.00</b> Types of systematic reviews ( HA, LL) <b>11:00-12:00</b> Asking a specific focused question (HA, LL)	<b>09.00 -10.45</b> Screening, study selection, data extraction, software, and machine learning (LJL, UG, HA) <b>11:00 – 12.00</b> Risk of Bias (AF)	<b>09.00 -10.00</b> Search follow up (MJ, IK) <b>10:15-12:00</b> GRADE and GRADE CERQual (HA,LL)
<b>12.00 – 12.30 Lunch</b>		
<b>12.30 - 15.00</b> Search workhop (MJ, IK) <b>15.15 – 16.30</b> Fine tuning research question and selection criteria (LL)	<b>12.30 -15.00 Part 1</b> How to decide what data analysis approach to use, quantitative and qualitative data (LL, HA) <b>15:00 -16:30 Part 2</b> <b>Group 1:</b> Quantitative data (LL) <b>Group 2:</b> Qualitative data and scoping reviews (HA)	<b>12.30 -13.15</b> How to present results (HA, LL) <b>13.30 – 14.15</b> Protocol development and team experience and composition (LL) <b>14:15-15:00</b> Exam and supervision information (LL)

# Work in small groups

- Group participation to enhance learning
- Group will collectively send in an assignment
- We recommend the group select a time keeper, a secretary and a meeting leader

# Small groups

DATE & TIME (CEST)	ACTIVITY
August 24th 12.00 – 14.00	Framing the question
August 31st 09.00-12-00	Review question and type of review
September 7th 09.00-12-00	Information sources and search strategy Resource lecture by librarian <b>Group 1 and 2 at 10:00 to 10:45</b> <b>Group 3 and 4 from 11:00 to 11:45</b>
September 14th 09.00 -12.00	Discuss and fill in group assignment
September 21st 09.00 – 12.00	Discuss challenges writing a protocol

## Group 1 Heather

- Cristine, Yamrot, Lubna, Brian, Mojdeh

## Group 2 Lars Jørun

- Monica, Refilwe, Israel, Tesfamichael, Mojtaba

## Group 3 Unni

- Maria, Christopher, Muneera, Yamikani, Mina, Attiqa

## Group 4 Lillebeth

- Shimeles, Edem, Prabhjot, Nora, Khadejaz, William

# Digital small groups – today's task



Get to know each other

Present research question and setting

Discuss the review process –  
timeframe and resources

Make sure everyone are up to date  
with the scheduled groupwork