

Using different types of evidence to inform guideline development

Elie Akl, MD, MPH, PhD

Department of Internal Medicine

American University of Beirut, Lebanon



Disclosures

- No relevant financial interests
- Contributed to some of the cited work
- Reflections are based on the collective experience of many guideline methodologists working with different organizations

Going from question to recommendation



WORKING
GROUPS



PROCESSES



TOOLS



INFORMATION

- I will be presenting the guideline development perspective, and reflecting on the evidence synthesis perspective
- Examples I will refer to (COVID-19 related)
 - Vaccination
 - Use of masks
 - Quarantine

Outline

- Types of information needed
- Types of evidence needed
- Processes and tools

Outline

- **Types of information needed**
- Types of evidence needed
- Processes and tools

Types of information

- Health effects
- Non health effects
- Contextual information

Types of information

- Health effects
 - Desirable effects
 - Undesirable effects
 - Certainty of evidence/ Confidence in qualitative evidence
 - Effect modification

Types of information

- Non health effects

Types of information

- Non health effects

Question to the audience:

What kind of non-health effects information can you think of in relation to the examples I've used so far?

Types of information

- Non health effects
 - Economic
 - Educational
 - Crime related



Types of information

- Contextual information

THE

NEWDAILY

Subscribe



NEWS

ENTERTAINMENT

LIFE

FINANCE

SPORT

WEATHER

PUZZLES

I MAKE MOTHER'S DAY MEAN MORE
WALK OR RUN TO SUPPORT BREAST CANCER RESEARCH SUNDAY 10 MAY



WOMEN IN BLUE
Mother's Day
Classic

LIFE • WELLBEING •

10:03pm, Feb 12, 2020 Updated: 1:39pm, Feb 13

Doctors slam face mask price hikes, call for better coronavirus protection for health workers

Man in gas mask sparks panic aboard American Airlines flight

By [Amanda Woods](#)

February 3, 2020 | 9:02am | Updated



Joseph D S ❄️
@ThePlatypusesTX



[@AmericanAir](#) , Just FYI flight 2212 to Houston was delayed an hour because you let this guy on the plane wearing a gas mask. This then panicked people on the plane and we had to wait for him to be escorted off. [@abc13houston](#) [@KHOU](#) [@HoustonChron](#) [@KPRC2](#) [@FOX26Houston](#) #trainbetter



Economy / China Economy

Coronavirus: China's surgical mask shortage ripples through global supply chain as health crisis continues

- China is the world's largest producer of medical facial masks, but surging demand amid the coronavirus outbreak has created a severe shortage
- The shortfall has prompted Beijing to adopt quasi-wartime rationing, leading to an increase in imports and pushing some companies to manufacture their own for staff

Health

Dentists threatened by coronavirus face-mask shortage

🕒 14 February 2020 | 📄

[f](#) [📧](#) [🐦](#) [✉](#) [Share](#)

Coronavirus outbreak



Some UK dentists may have to "down drills" if the shortage of face masks caused by the coronavirus outbreak continues, according to the British Dental Association.

Types of information

- Contextual information
 - Values and preferences
 - Resource use
 - Health equity considerations
 - Acceptability
 - Feasibility
 - Sustainability

Outline

- Types of information needed
- **Types of evidence needed**
- Processes and tools

Types of evidence

- Primary vs. secondary source of evidence
- Direct, indirect, and irrelevant evidence
- Randomized only vs. other types of evidence

Types of evidence

- **Primary vs. secondary source of evidence**
- Direct, indirect, and irrelevant evidence
- Randomized only vs. other types of evidence

Source	Advantages	Disadvantages
Views of panelists	<ul style="list-style-type: none">● Default option● Minimal time or resources	<ul style="list-style-type: none">● Panel may not represent all key stakeholders, or stakeholders' view

Source	Advantages	Disadvantages
Views of panelists	<ul style="list-style-type: none"> • Default option • Minimal time or resources 	<ul style="list-style-type: none"> • Panel may not represent all key stakeholders, or stakeholders' view
Systematic review	<ul style="list-style-type: none"> • Builds on published evidence • May represent multiple settings, and stakeholder groups, • Quantitative, qualitative, or mixed 	<ul style="list-style-type: none"> • Relevant evidence may not exist • Existing evidence may not be directly relevant • Existing evidence may not be of high quality • Time and resources ++

Source	Advantages	Disadvantages
Views of panelists	<ul style="list-style-type: none"> ● Default option ● Minimal time or resources 	<ul style="list-style-type: none"> ● Panel may not represent all key stakeholders, or stakeholders' view
Systematic review	<ul style="list-style-type: none"> ● Builds on published evidence ● May represent multiple settings, and stakeholder groups, ● Quantitative, qualitative, or mixed 	<ul style="list-style-type: none"> ● Relevant evidence may not exist ● Existing evidence may not be directly relevant ● Existing evidence may not be of high quality ● Time and resources ++
A primary study	<ul style="list-style-type: none"> ● Tailored to questions of interest ● Opportunity to produce high quality evidence ● Engaging stakeholders ● Quantitative, qualitative, or mixed methods approaches 	<ul style="list-style-type: none"> ● Reliance on one study; not peer reviewed ● Time and resources +/-

Primary source

Ajuebor *et al.* *Human Resources for Health* (2020) 18:77
<https://doi.org/10.1186/s12960-020-00519-2>

Human Resources for Health

RESEARCH

Open Access

Increasing access to health workers in rural and remote areas: what do stakeholders' value and find feasible and acceptable?



Onyema Ajuebor^{1*} , Mathieu Boniol¹, Michelle Mclsaac¹, Chukwuemeka Onyedike¹ and Elie A. Akl²

Secondary source of evidence

Tarabay *et al.* *Health and Quality of Life Outcomes* (2016) 14:102
DOI 10.1186/s12955-016-0505-8

Health and Quality
of Life Outcomes

REVIEW

Open Access



Knowledge, attitudes, beliefs, values, preferences, and feasibility in relation to the use of injection safety devices in healthcare settings: a systematic review

Rami Tarabay¹, Rola El Rassi², Abeer Dakik², Alain Harb¹, Rami A. Ballout³, Batoul Diab¹, Selma Khamassi⁴ and Elie A. Akl^{5,6,7*}

Types of evidence

- Primary vs. secondary source of evidence
- **Direct, indirect, and irrelevant evidence**
- Randomized only vs. not randomized only evidence

Types of evidence

- Direct, indirect, and irrelevant evidence



Types of evidence

- Direct, indirect, and irrelevant evidence

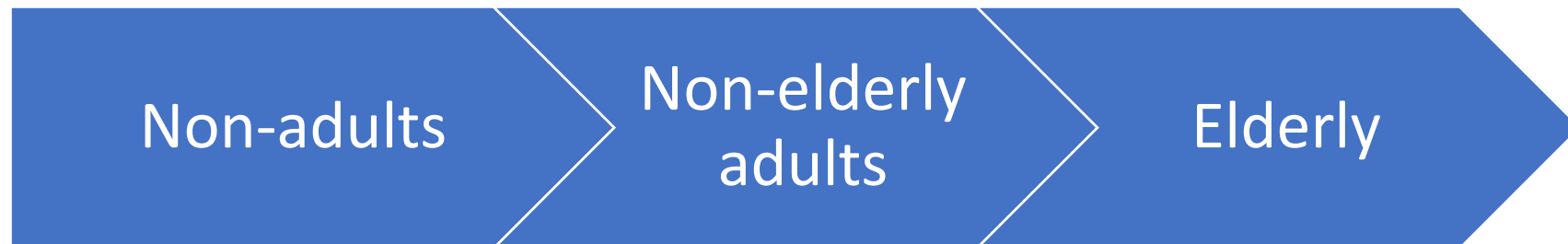


Question to the audience:

For a question focused on elderly population (e.g., vaccination), what age populations would respectively provide, **irrelevant, indirect, and direct evidence**?

Types of evidence

- Direct, indirect, and irrelevant evidence



Types of evidence

- Primary vs. secondary source of evidence
- Direct, indirect, and irrelevant evidence
- **Randomized only vs. other types of evidence**

Types of evidence

- Randomized only vs. other types of evidence

Types of evidence

- Randomized only vs. other types of evidence

Question to the audience:

What type of study designs (other than RCTs) do you think are important for guideline development? And for what purpose?

Outline

- Types of information needed
- Types of evidence needed
- **Processes and tools**

Processes and tools

- 'Checkpoints' for interaction between guideline groups and SR teams:
 - Developing the recommendation question
 - Determining the information needed to develop the recommendation
 - Developing the SR protocol
 - Presenting interim findings
 - Presentation at final findings the time of the panel meeting

Processes and tools

- 'Checkpoints' for interaction between guideline groups and SR teams:
 - Developing the recommendation question
 - **Determining the information needed to develop the recommendation**
 - Developing the SR protocol
 - Presenting interim findings
 - Presentation at final findings the time of the panel meeting

PICOrdering tool

Framing the public health intervention

	Real life/ practice question
Setting	
Population	
Background interventions	
Intervention	
Comparator(s)	
Outcome	
Timeframe	
Potential effect modifiers	

PICO **Ordering** tool

EtD domain & related question	Type of study	Collection of evidence	Notes
Desirable and undesirable effects • In P opulation, what is the relative impact of I ntervention and C omparator on O utcomes (benefits and harms)? PICO	<input type="checkbox"/> Randomized trials <input type="checkbox"/> Non-randomized comparative studies <input type="checkbox"/> Accuracy studies <input type="checkbox"/> Observational/prognosis studies for baseline risks	<input type="checkbox"/> Systematic review <input type="checkbox"/> Other:	If no direct RCT data identified, preferred source of evidence: <input type="checkbox"/> Direct observational data <input type="checkbox"/> Indirect RCT data

PICOrdering tool

EtD domain & related question	Type of study	Collection of evidence	Notes
Acceptability <ul style="list-style-type: none">• What is the comparative acceptability of Intervention and Comparator by different stakeholders (Population, clinicians, public health agents, managers, policy makers, etc.)?	<input type="checkbox"/> Survey study <input type="checkbox"/> Qualitative study	<input type="checkbox"/> Systematic review <input type="checkbox"/> Study conducted for the guideline: <input type="checkbox"/> Expert input <input type="checkbox"/> Other:	

Conclusion

- There is no doubt evidence synthesis community and guideline development community have been able to build synergies
- There is a need to build on those and enhance the collaboration with other communities (e.g., trialists) for the public health good
- Importance of methodological development!

Thank you!

Questions?

