

Prehospital Pain Management Evidence Based Guidelines

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Disclosures

- GRADE working group member
- ILCOR (CPR guidelines)
- EMS fatigue (NHTSA / NASEMSO)
- HELPinKids (Vaccine pain and fear)
- ACCP / ASH (Stroke, VTE Dx, Thrombophilia, SCD)
- WHO (Pediatric resuscitation)
- CTFPHC (Canadian USPSTF)

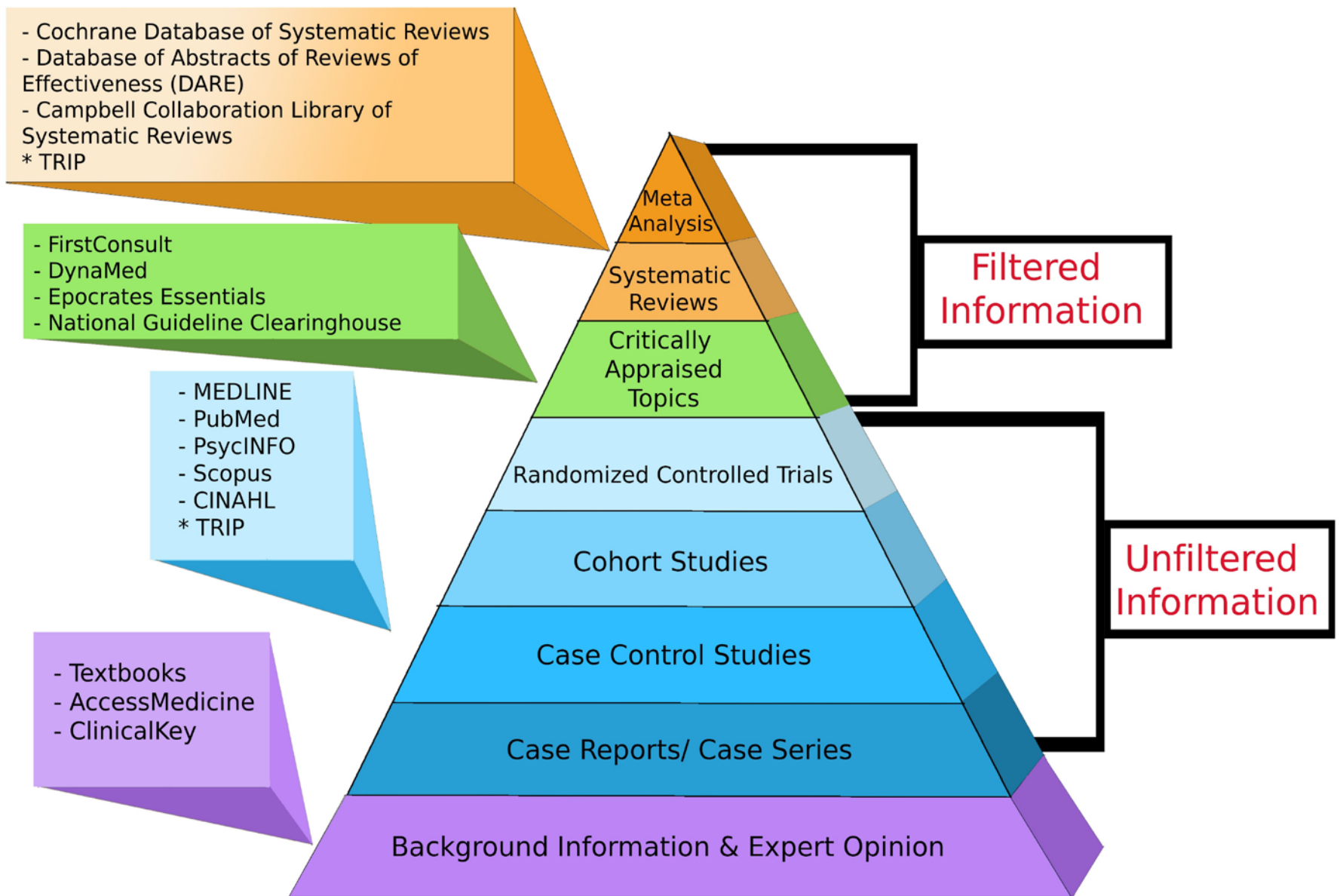


Session Overview

- Rationale for GRADE
- Overview of the Grade Approach for Evaluating the Certainty of Evidence
- From Evidence to Recommendations
- Evidence to Decision Framework

Historical View

- McMaster University / Oxford
- Revolution – an overthrow of:
 - Eminence based medicine
 - We've always done it this way
 - In my personal experience.....
- Science must guide healthcare decisions
- The rise of critical appraisal of research
- Evidence based guidelines



*TRIP searches filtered AND unfiltered information simultaneously.

Guidelines

Statements that:

- Include recommendations intended to optimize public health actions
- Informed by a systematic review of evidence
- Incorporate an assessment of the benefits and harms of alternative options
- Consider important subgroups, as appropriate
- Should be developed by a multidisciplinary panel of experts and representatives from key affected groups

Guidelines: Areas of Concern

- COI - financial and intellectual
- Failure to incorporate perspectives
- Black box between evidence and recs
- Watered down recs
- Over-enthusiasm for strong recs
- Failure to consider costs of recs
- Too focused on the studies as opposed to the impact of an intervention across many

Where GRADE fits in

Prioritize problems, establish panel

Find/appraise or prepare: Systematic review

Searches, selection of studies, data collection and analysis

(Re-) Assess the relative importance of outcomes	GRADE
Prepare evidence profile: Quality of evidence for each outcome and summary of findings	
Guidelines: Assess overall quality of evidence	
Decide direction and strength of recommendation	

Draft guideline

Consult with stakeholders and / or external peer reviewer

Disseminate guideline

Implement the guideline and evaluate

Formulate question

Select outcomes

Rate importance

Outcomes across studies

Create evidence profile with GRADEpro

Rate quality of evidence for each outcome

RCT start high, obs. data start low

P
I
C
O

Outcome Critical

Outcome Critical

Outcome Important

Outcome Not important



Summary of findings & estimate of effect for each outcome									
Outcome	Comparison	Relative risk	95% CI	Quality	Relative risk	95% CI	Quality	Relative risk	95% CI
Summary of findings & estimate of effect for each outcome									
Summary of findings & estimate of effect for each outcome	Summary of findings & estimate of effect for each outcome	Summary of findings & estimate of effect for each outcome	Summary of findings & estimate of effect for each outcome	Summary of findings & estimate of effect for each outcome	Summary of findings & estimate of effect for each outcome	Summary of findings & estimate of effect for each outcome	Summary of findings & estimate of effect for each outcome	Summary of findings & estimate of effect for each outcome	Summary of findings & estimate of effect for each outcome

Summary of findings & estimate of effect for each outcome

High
Moderate
Low
Very low

Grade down

1. Risk of bias
2. Inconsistency
3. Indirectness
4. Imprecision
5. Publication bias

Grade up

1. Large effect
2. Dose response
3. Confounders

Systematic review

Guideline development

Formulate recommendations:

- For or against (direction)
- Strong or weak (strength)

By considering:

- ☐ Quality of evidence
- ☐ Balance benefits/harms
- ☐ Values and preferences



Revise if necessary by considering:

- ☐ Resource use (cost)



Rate overall quality of evidence across outcomes based on lowest quality of critical outcomes



- "We recommend using..."
- "We suggest using..."
- "We recommend against using..."
- "We suggest against using..."

GRADE: Certainty in evidence

The extent to which our confidence in an estimate of the treatment effect is adequate to support an individual recommendation.

GRADE defines 4 categories of quality:

- High
- Moderate
- Low
- Very low

<https://bestpractice.bmj.com/info/toolkit/learn-ebm/what-is-grade/>

Visit for more information!

Conceptualizing Certainty

High	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate	We are moderately confident in the estimate of effect: The true effect is likely to be close to the estimate of effect , but possibility to be substantially different.
Low	Our confidence in the effect is limited : The true effect may be substantially different from the estimate of the effect.
Very low	We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect.

Determinants of Certainty

- Randomized Control Trials **start** high
- Observational (cohort, case-control) studies **start** low

What lowers quality of evidence?

5 factors:

Methodological
limitations

Inconsistency
of results

Indirectness
of evidence

Imprecision
of results

Publication
bias

See Appendix 1 for more information

Evidence to Recommendations

- Multiple frameworks exist
- Our team will be using the Evidence to Decision model

Research Methods & Reporting

GRADE Evidence to Decision (EtD) frameworks: a systematic and transparent approach to making well informed healthcare choices. 1: Introduction

BMJ 2016 ; 353 doi: <https://doi.org/10.1136/bmj.i2016> (Published 28 June 2016)

Cite this as: *BMJ* 2016;353:i2016

Mutliple judgements — See Appendix 2 for more detailed questions

	Question to be answered
Problem Priority	Is the problem a priority?
Benefits & Harms	How substantial are the desirable / undesirable anticipated effects?
Certainty of the Evidence	What is the overall certainty of the evidence? - GRADE
Outcome Importance	Is there uncertainty about or variability in how much people value the outcomes?
Balance	Does the the desired/undesired effects favour the intervention or comparison?
Resource Use	How large are costs? Certainty of the costs? Do they favour the intervention or comparison?
Equity	What is the impact on health equity?
Acceptability	Is the intervention acceptable to stakeholders?
Feasibility	Is the intervention feasible to implement?

PanelVoice

- A system that integrates GRADE in order to provide panels the opportunity to iteratively assess the various criteria that inform a recommendation
- The system we will use to help guide the formation of recommendations

- Settings
- Tasks
- Scope
- References
- Prognosis
- Comparisons
- Evidence table
- Recommendations
- Presentations
- Multi comparisons
- PanelVoice
- Document sections
- Dissemination

▲ Should formal day care programmes vs. no day care programmes be used for prevention of drowning ▬ Bottom panel ⚡ Explanations

QU	1	Should formal day care programmes vs. no day care programmes be used for prevention of drowning?	Status ▾
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ASSESSMENT

Table view options ▾ Collapse all

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Problem ⓘ
Is the problem a priority?

▲

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
<div><div><input type="radio"/> No</div><div><input type="radio"/> Probably no</div><div><input type="radio"/> Probably yes</div><div><input type="radio"/> Yes</div></div> <div><div><input type="radio"/> Varies</div><div><input type="radio"/> Don't know</div></div> <div>Detailed judgements</div>		





















Panelist input

CRITERION	PROPOSED JUDGMENT	RESEARCH EVIDENCE
EQUITY: What would be the impact on health equity?	<p>✓ Reduced</p> <p>Probably reduced</p> <p>Probably no impact</p> <p>Probably increased</p> <p>Increased</p> <hr/> <p>Varies</p> <p>Don't know</p>	<p>Qualitative research from one study suggests that patients from lower socioeconomic groups may be disadvantaged with respect to testing, with the following reasons for the disadvantage:</p> <p>The qualitative study conducted in the UK showed that patients undergoing genetic testing for thrombophilia (factor V Leiden) often experience difficulty understanding genetic information and interpreting results. Those from higher socio-economic groups had a better understanding of genetic testing and were more likely to look up prevention-related information than those from lower socioeconomic groups. Participants with a positive test result and more knowledge estimated their overall risks to be lower than those with a positive test result and limited knowledge. (Saukko 2007)</p>

☒ Agree
 ☐ Disagree
 ☐ I don't know

Comment

CRITERION	PROPOSED JUDGMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
ACCEPTABILITY: Is the intervention acceptable to key stakeholders?	<p>No</p> <p>Probably no</p> <p>Probably yes</p> <p>✓ Yes</p> <hr/> <p>Varies</p> <p>Don't know</p>	<p>Research studies suggested the following regarding acceptability and barriers associated with testing and treatment:</p> <p>Patients: A survey was conducted in members of a large family with heritable protein C deficiency. For those who had not been tested before, using a 7-point scale (1 - not at all interested; 7 extremely interested), the mean score for interest in testing interest was 4.6 (standard deviation 2.4). Patients in general were willing to take the test for thrombophilia. (Vossen, 2015)</p> <p>A cross sectional survey found that 79% of patients who tested positive for factor V Leiden incorrectly estimated their risk for VTE. 64% indicated they did not receive enough information on the meaning and implications of the genetic test. Although a positive test result increased worry for 43%, 88% of patients were glad to know their test results. (Hellmann 2003)</p> <p>Studies of psychological impact of genetic testing for thrombophilia report few negative results. However, no valid conclusions can be drawn since most assessments in the studies</p>	<p>Health care providers:</p> <p>Most panel members agree that testing is acceptable to health care providers, although in some thrombophilias multiple tests need to be performed and knowledge about pitfalls and interpretation of thrombophilia testing is required.</p>

CRITERIA	SUMMARY OF JUDGEMENTS						IMPORTANCE FOR DECISION
PROBLEM	No	Probably no	Probably yes	Yes	Varies	Don't know	
DESIRABLE EFFECTS	Trivial	Small	Moderate	Large	Varies	Don't know	
UNDESIRABLE EFFECTS	Large	Moderate	Small	Trivial	Varies	Don't know	
CERTAINTY OF EVIDENCE	Very low	Low	Moderate	High	No included studies		
VALUES	Important uncertainty or variability	Possibly important uncertainty or variability	Probably no important uncertainty or variability	No important uncertainty or variability			
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	Don't know
							
RESOURCES REQUIRED	Large costs	Moderate costs	Negligible costs and savings	Moderate savings	Large savings	Varies	Don't know
							
CERTAINTY OF EVIDENCE OF REQUIRED RESOURCES	Very low	Low	Moderate	High	No included studies		
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	No included studies
							
EQUITY	Reduced	Probably reduced	Probably no impact	Probably increased	Increased	Varies	Don't know
							
ACCEPTABILITY	No	Probably no	Probably yes	Yes	Varies	Don't know	
FEASIBILITY	No	Probably no	Probably yes	Yes	Varies	Don't know	

Closing thoughts

- Generally well-intentioned, guidelines have been problematic on many fronts
- GRADE addresses many of the concerns related to transparency, consistency and explicitness of judgements
- PanelVoice will enable us to complete the recommendations in a timely, smooth process from the comfort of our homes 😊