

Education & Training
Learn critical thinking skills

Systematic Review
Using critical thinking skills to acquire best evidence from research

Evidence-based Practice
Applying critical thinking skills to use best evidence for decision-making under uncertainty

Vision
Develop computer-assisted applications that support Evidence-Based Practice.

Priority Data-Testing Group for Assessing and Evaluating ASR

Abstract Systematic Review

ASR

Educational and Training in Evidence-based Research

- Faculty Professional Education
- Dental Curriculum

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Access ASR

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Abstract Systematic Review (ASR) in EBRP (Evidence-based Research and Practice) is educational and training application for acquiring skills needed in evidence-based research. ASR was developed as a facilitated process that instructs the researcher in critical thinking skills using a stepwise, lock-step quality control processes of SR. While SR methodology concepts are similar to ASR, the outcomes are different. However, both are capable of producing outcomes used in developing clinical practice guidelines (CPGs). Since primary source SRs may also develop pooled estimates of best evidence, this is the outcome that allows for association between both methodologies. The novelty of ASR is knowledge management software that provides a quick and facilitated process for scholars to learn and achieve skills in accomplishing a critical assessment and evaluation of the literature. Since abstracts are used, there are no costs to bear by researchers unlike most primary source articles. The outcomes of ASRs are synthesizing the literature to produce clinical practice guidelines and a clinical report in response to a clinician-patient generated questions posed through the PICOTS template, a standardized form used for this purpose in performing EBR. However, its validation in rendering best evidence for shared decision-making has not been studied.

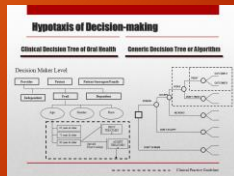
Clinical Practice Guidelines

CPGs are pictorial displays that include pooled estimates of best evidence from a meta-analysis to provide decision and utility data, such that along with cost, cost-effective and cost-benefit interpretations of treatment options may be provided to patients.



CPGs

CPGs may follow the more specific definition of evidence-based research by Greenhalgh and Donald (Greenhalgh, 2010) as "the use of mathematical estimates of the risk of benefit and harm, derived from high quality research on populations samples, to inform clinical decision-making in the diagnosis, investigation or management of individual patients."



Initiation of Research

Additional Options & Help Menus

Uncertainty


Knowledge

There are two types of questions that are generally asked when gaining insights regarding an issue. These are

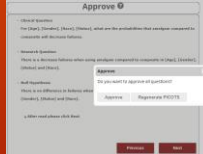
- Background questions
- Foreground questions

Background questions support Foreground questions in order to structure appropriate inquiries regarding uncertainties in knowledge.

PICOTS Template



Research Question



PICOTS Template

PICOTS

P	Patient problem or population
I	Intervention (primary) or exposure
C	Comparison intervention
O	Outcome of interest
T	Time it takes to demonstrate and outcome or observation
S	Setting or situation or environment in which outcomes are assessed or observed

For Intervention or Therapy:
In <P>, what is the effect of <I> on <O> compared with <C> within <T>?

For Etiology:
Are <P> who have <I> at (Increase/decreased) risk for/of <O> compared with <P> with/without <C> over <T>?

For Diagnosis or Diagnostic Test:
Are (is) <I> more accurate in diagnosing <P> compared with <C> for <O>?

For Prevention:
For <P> does the use of <I> reduce the future risk of <O> compared with <C>?

For Prognosis/Predictions:
Does <I> influence <O> in patients who have <P> over <T>?

For Meaning:
How do <P> diagnosed with <I> perceive <O> during <T>?

PICOTS Question

Search of Literature

Additional Options & Help Menus

Search

Software develops keywords and performs search using online search Engine specific to discipline. For example, healthcare searches use PubMed.

Search Results



Initial Case Series



Critical Thinking

Additional Options & Help Menus

Timmer Score



Timmer Analysis



Best Case Series

Best Case	Abstract	Score
1	Business Survival Factors: Review of the critical survival of direct and indirect indicators in positive health of the personal activities	20
2	Longevity of institutions in positive health and reasons for failure	10
3	A 4 year clinical study on analogs, non-compact and non-compact plus review analog indicators in secondary abstracts	25
4	Prevention mode indicators vs. analog indicators in a three year clinical study	16
5	12 year survival of compact vs. analog indicators	25

Input Data for Meta-Analysis

Additional Options & Help Menus

EBR Protocol



Data Input



Meta-Analysis



Report

Additional Options & Help Menus

Report CPG Interpretations



Building Blocks

Software Innovation Agenda

- Systematic review research support Faculty investigations and publications
- Evidence-Based Practice support practitioners in informed consent and treatment planning for patients making vested, optimum decision-making under uncertainty
