Clinical Practice Guidelines
Development Manual
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A. INTRODUCTION TO CLINICAL PRACTICE GUIDELINES

Clinical Practice Guidelines (CPGs) are evidence-based documents that facilitate the application of current evidence into everyday emergency nursing practice. CPGs are created by the CPG Committee (“Committee”) following the rigorous process described in this document and serve as a resource for others engaged in implementing evidence-based practice in emergency nursing. ENA believes that CPGs will have a positive impact on patient care and emergency nursing practice by bridging the gap between practice and current available evidence.

Figure 1. Clinical Practice Guidelines Overview

CPGs contain recommendations based on a systematic review and critical analysis of the literature about a clinical practice question. Preparing a CPG is a complex process involving critical thinking throughout the entire process. This document outlines the approach used to develop CPGs which ensures consistency of the evidence appraisal process and incorporation of current, best available evidence for practice. Further, this document serves as a resource for nurse researchers and other ENA committees by offering a systematic approach to the review and recommendation of research literature for emergency nursing practice.

B. COMMITTEE COMPOSITION

The CPG Committee consists of nine members and one chairperson who are registered nurses working in emergency care settings and/or in academia. A methodologist participates in review and grading of all literature to be added to the evidence table as well as review and comment on the final CPG. Additionally, one board of directors liaison and two staff members serve as additional resources to the committee.

Members must apply for the committee and are selected by the ENA President-elect. Members do not receive compensation for their work on this committee. The association does provide for travel, hotel, and per diem in order for members to attend two, 1-day meetings each year at the association’s headquarters. Any conflicts of interest are reviewed and addressed at the beginning of each conference call or meeting.

Members are listed as authors on CPGs provided that they have searcher for and reviewed literature, contributed to discussions to determine consensus on the grading of the evidence, provided thoughtful
feedback on drafts of CPGs, and approved final drafts that are submitted to the ENA Board of Directors for approval. The order of authorship is as follows: subcommittee chair, subcommittee members ordered by amount of work contributed, committee chairperson, all other contributing members in alphabetical order.

C. CONTENT DEVELOPMENT,

The purpose of the six-step approach is to provide a consistent method for evaluating evidence and grading recommendations based on the strength of the underlying evidence and a structure to communicate the strength of the evidence to users of CPGs. The six-step approach used to develop the content of CPGs is:

1. **Selection of Topics**

   The selection of topics for CPGs is based on information culled from a variety of sources including the ENA member-only online discussion forums, membership surveys, ENA General Assembly practice topics and/or resolutions, and other sources that reflect ENA’s organizational priorities and membership needs. Most importantly, topics emphasize independent as well as collaborative nursing practices, which can be identified as interventions based on clinical experience and forecasting of nursing knowledge. Considerations regarding the applicability to practice, nursing-sensitive patient outcomes, and available evidence are also addressed in the selection of topics. A preliminary review of the literature on selected topics is conducted to determine if sufficient evidence exists for the development of a CPG. This preliminary review is conducted by 1-2 Committee members. The Committee identifies and recommends topics to the ENA Board of Directors for consideration each year to be developed in the following year. The ENA Board of Directors approves the topics to be addressed based on ENA’s priorities. The final topics are forwarded to the full Committee for development.

2. **Defining Clinical Questions Using the PICOT Format**

   Designated topics are developed into clinical questions using the PICOT format (Appendix A). Creation of a clinical question is often the most challenging step of the process. The question must be reseachable, pertinent to emergency nursing practice, answerable, and have a measurable outcome. The creation of a clinical question helps limit the amount of potential inherent bias that occurs in every patient care situation (Fineout-Overholt, Melyn, & Schultz, 2015). The PICOT may need to be revised and refined based on the findings of the initial literature review.

3. **Searching Relevant Literature for Review**

   A literature search is conducted for studies, meta-analyses, systematic reviews and existing guidelines relevant to the clinical question with a preference for those published within the last five years. Classic studies or meta-analyses from earlier years are also included in this review. The search of the literature must be exhaustive to provide the best information/evidence to make reliable recommendations. Assessment of study eligibility and extraction of information from study reports is conducted independently by a CPG Subcommittee (“Subcommittee”) consisting of 2-3 Committee members.

   The working definitions of the key concepts relevant to the clinical question are developed and documented as the literature is being reviewed and topics refined. Final definitions, keywords, background, and significance to practice are included as part of the Resources.
The following databases serve as potential sources for a literature search (see Appendix B for additional resources):

- British Medical Journal Evidence Centre (http://group.bmj.com/products/evidence-centre)
- Cochrane Reviews http://www.cochrane.org
- National Institute for Health and Clinical Excellence http://www.nice.org.uk
- Subject Specialist Databases (e.g., CINAHL, OVID, etc.)

All articles pertinent to the topic are listed on the Evaluation Table (Appendix C). The Evaluation Table is not published as part of the CPG but is the comprehensive listing of literature reviewed and the results of that review. It remains on file at ENA to address any questions that may arise about a CPG and to serve as a starting point for future revisions of the CPG. A description of the search inclusion and exclusion criteria will be included in the CPG. Members will use the ENA flowchart to document how many articles were identified and explain the number of articles included and excluded from review (Appendix D).

4. Critical Appraisal of the Literature to Grade the Level and Quality of Evidence

The critical appraisal of the literature is conducted using the Critical Appraisal of Evidence Guide as a reference (Appendix E) and the Grading of Evidence for Diagnostic/Prognostic/Therapeutic Questions Worksheet (Appendix F). This manual provides detailed information on how to evaluate a research report and review an article. Elements included are:

- Scope and Purpose – Is the aim of the study clear, is it significant, and the population relevant?
- Literature Review – Is the background information and literature current and logical?
- Theoretical Framework – Are the concepts/theories logical, sufficient and clear?
- Research Question – Is the research question stated? Does it guide the methods used?
- Methodology – Is the research approach (qualitative or quantitative) appropriate for the study and to answer the research question?
- Quality of Research – Does the research have scientific merit?
- Major Findings – Do the findings, data presented, conclusions and limitations explain the results and support the purpose of the study?
- Implications – Are the findings relevant, applicable and generalizable?

5. Develop the Evaluation, Evidence, and Other Resources Tables

The Evaluation Table (Appendix C) is completed as literature is reviewed. Specific columns are used when analyzing and synthesizing research studies, meta-analyses, systematic reviews, and clinical practice guidelines. The Evidence Table (Appendix G) is a subset of the Evaluation Table and is created after the Committee reviews and grades the literature. The Evidence-Table provides key information concerning the
quality of evidence, the magnitude of effect of the decision options/interventions examined, and the sum of available data on all important outcomes for a given comparison. Essential elements included in the table are:

- Reference: Author, Year and Title
- Research Purpose/Questions/Hypothesis
- Design/Sample/Setting
- Measures/Variables/Analysis
- Findings/Implications
- Overall Quality of Research including comments
- Level of Evidence including comments.

Each Subcommittee member independently reviews all identified literature and completes the Evaluation Table for the topic assigned. The Committee must reach consensus on strength and quality of evidence scores. - Worksheets (e.g., AGREE II worksheet, Article Grading sheets) for critiquing research studies (Appendix H) and evaluating practice guidelines (Appendix I) are available to help complete the evidence table. The grading sheets are uploaded to the ENA Committee Literature site by the subcommittee. If a research paper is not chosen for inclusion on the Evidence Table, the reason for not including it should be noted in the last column of the Evaluation Table.

The Other Resources Table (Appendix G) is also created as a subset of the Evaluation Table and includes articles that do not contribute evidence directly but may be helpful to nurses who are learning more about a topic or implementing a practice change. Review articles are commonly included in the Other Resources Table.

Figure 2. CPG Brief Creation Process


The recommendations reflect the summative interpretation of evidence along with the clinical judgment and experience of emergency nurses. Each recommendation is assigned a level, which indicates the strength of evidence upon which the recommendations is based. This differs from levels of evidence in that the entire body of work is analyzed in making a decision regarding recommendations for practice. Utilizing concepts presented in the Advancing Research and Clinical Practice through Close Collaboration (ARCC) model (Melnyk & Fineout-Overholt, 2015), ENA developed a conceptual model for determining the level of recommendation for practice. The model consists of three components: 1) summative levels of evidence, 2) summative quality
of evidence and 3) relevance and applicability to practice based on clinical judgment and experience of emergency nurses.

a. Background

The ENA model reflects the concepts of the ARCC model that guide the evaluation and ultimate determination of recommendations for practice. The ARCC model represents the incorporation of research into clinical practice (Fineout-Overholt, Melynk, & Schultz, 2015). The key components of the ARCC include: a) research evidence, b) evidence-based theories, c) clinical expertise and evidence from the assessment of the patient and healthcare resources and d) patient preferences and values. In emergency nursing, practice depends on emergency nurses balancing expert clinical judgment with patient preferences. Without the use of all of the components of the ARCC model, the application of evidence would only be research utilization. Thus, the ENA model incorporates not only the levels and quality of research evidence but also the relevance and applicability to practice based on the experience and expertise of emergency nurses.

b. Assumptions and Premises for Determining the Level of Recommendation for Practice

ENA’s model for grading level and quality of evidence is consistent in principle with other evidence grading systems (Guyatt et al., 2006) including the grading system utilized by the American College of Emergency Physicians (ACEP) (Schriger, Cantrill, & Greene, 1993; Jagoda et al., 2008). The ENA model reflects the following assumptions and premises:

i. Grading of the recommendations is a separate function from judging the quality of the evidence.
ii. There is a need for the simplicity and transparency of grading for the consumers of CPGs.
iii. There must be an adequate number of “grading” categories.
iv. Grading criteria need to be explicit.
v. Criteria need to have clear approaches for different levels of evidence for different outcomes.

Furthermore, the CPG grading criteria considers key factors affecting the levels of the recommendation which include:

i. Levels and quality of the evidence [i.e., individual study’s level of evidence, types of outcomes measured by the study, quantity of the evidence (e.g., number of studies, number of subjects in the studies), consistency and coherence of the evidence (refers to similarities between studies on the same topic)]
ii. Balance between advantageous and undesirable effects

c. Major Components to Determine the Level of Recommendation for a CPG

The ENA model for determining the level of recommendation of the CPG for practice includes three components to provide structure and transparency in the recommendations for the final CPG.

i. Grading levels of the evidence. This component provides an objective description of the design and types of studies supporting a CPG. ENA has adopted the Melnyk and Fineout-Overholt (2015) model for categorizing levels of evidence (Appendix K). The Melnyk and Fineout-Overholt model is known for its clarity of categories for ranking the type of research designs. The model is easy to understand and apply as a critical appraisal system. The summative level of evidence provides the link between the recommendations and evidence base of a CPG.
ii. **Grading the quality of the evidence.** This component provides a means to delineate the overall summative quality of the body of evidence that is available for a CPG (Appendix K). This component considers the relative strengths and weaknesses of available evidence, as well as any conflicting or heterogeneous findings from multiple studies. Grading of the quality of the evidence evaluates issues that can affect quality (e.g., blinded versus non-blinded outcome assessment, direct or indirect outcome measures—including reliability and validity, biases, sufficient sample sizes etc.).

iii. **Grading the clinical relevance and applicability of the evidence to emergency nursing practice.** The clinical relevance and applicability of the evidence is determined by consensus of the Subcommittee. Although research provides the basis for examining the evidence, it is recognized that research is not the single determinant of use of evidence in practice. Sound clinical decisions need to address other considerations such as clinical expertise, patient expectations and preferences, social circumstances, resources availability (e.g., time, equipment, personnel) in the clinical setting, community support services available, access to care, ethical issues and medico-legal risks. Clinical relevance and applicability of the evidence to practice is determined based on the experience and expertise of emergency nurses. This component acknowledges the expert opinion of emergency nurses to assess the strength or generalizability of the evidence, while considering the tradeoffs between benefits and harm to patients. The goal of this component is to be explicit and transparent regarding the use of clinical expertise in the final determination of the level of recommendation. Incorporating clinical expertise of emergency nurses assures the applicability of the CPG to clinical practice.

d. **Description of Levels of Recommendation for Practice.**

ENA’s levels of recommendation are summarized in a table that classifies evidence as high, moderate, weak, not recommended for practice, insufficient evidence, or no evidence. A description of each level of recommendation is provided in Appendix L. The levels of recommendation reflect the general principles of grading evidence for practice used by other professional groups such as ACEP. The level of recommendation for practice for each CPG is determined by the Committee based on the level of the evidence, quality of the evidence, and the clinical relevance and applicability. As a note of caution, regardless of the recommendation for practice, it is still the responsibility of individual clinicians to use their judgment and consider patient circumstances when making individual decisions regarding the use of a CPG for practice.

D. **MANAGEMENT OF THE DEVELOPMENT PROCESS**

1. **Timeline**

The anticipated timeline (Appendix M) for each CPG is approximately 12-18 months (6-9 months for preliminary content development and 6-9 months for review, refinement, and production of final product).

2. **Subcommittees**

Two-three individuals are assigned to conduct the initial literature review. A nursing research expert with both clinical expertise and doctoral academic preparation will be assigned to each subcommittee. The methodologist will serve as an active member of the committee and consult with subcommittees as needed. Conference calls with Subcommittee members and staff are held as necessary to discuss progress and facilitate the Subcommittee’s work. All members of a Subcommittee independently complete an exhaustive
review of all identified literature, complete a separate evaluation table, and then reconvene to reach consensus. Each Subcommittee prepares a description of the topic, definition, background, significance, and evidence table. All articles and documents are uploaded to the Committee team site for easy retrieval by everyone involved with the development process. The Subcommittee identifies and assigns preliminary scores for quality and strength of evidence, and describes conclusions based on the review of the body of evidence. The entire Committee reads the articles and reviews the evidence-appraisal tables for each topic and then finalizes implications for practice and the levels of recommendation.

3. **Documentation**

All documentation (search strategy, electronic copies of each article, evidence appraisal table, grading sheets, cover sheet, etc.) are completed and submitted to the Committee with written recommendations. Documentation that occurs in the development of the CPG that is not published is archived by ENA staff.

4. **Finalizing Documents**

All documents are formatted according to the American Psychological Association (APA) Guidelines, 6th edition. Working drafts of the narrative document will have line numbers inserted to facilitate Committee discussion. The documentation is submitted electronically to the Committee team site. The meetings and conference calls encompass a discussion of the evidence, determination of the strength and quality of the evidence, recommendations for practice, and consensus to continue with development of the CPG or refocus it as necessary. The Subcommittee will refine the evidence tables based on Committee consensus. The Institute for Emergency Nursing Research (IENR) Advisory Council reviews the final document for overall validity and provides feedback as appropriate using the CPG Evaluation Worksheet (Appendix H). Reviews and feedback are sent to the Subcommittee to evaluate and incorporate, as appropriate. A 1-2 page summary (“Synopsis”) of the CPG is developed after the full CPG is completed (Appendix J). ENA staff conducts a final administrative review and creates the final products for publication with input from the Committee (Appendix M).

The following components appear in the final Committee document:

- Title: PICOT Question
- Authors
- Conflict of interest and funding statement
- Disclaimer and an assessment of the benefits and harms of recommended care and alternative care options
- Dates of publication and revisions
- Content
  - Title
  - Background/significance
  - Literature search strategies
  - Description of decision options/interventions and the level of recommendation
  - Study Selection Flowchart
  - Evidence Table
  - Other Resources Table
• References
• Acknowledgements
  ▶ Clinical Practice Guidelines Synopsis (Appendix J)

E. DISSEMINATION OF CPGs

CPGs are disseminated by multiple methods, including but not limited to:

- On the ENA Website as a downloadable document (PDF)
- Journal of Emergency Nursing
- Updates via ENA’s social media platforms and in ENA’s magazine, Connection.

F. REVIEW AND REVISION OF CPGs

CPGs will be reviewed and or revised a minimum of every four years to ensure the content is current. Updates involve a search for new studies and may involve revision of the question of interest and incorporation of new information. The review will be completed by the Committee, IENR Advisory Council, and the ENA staff (Appendix M).
G. BIBLIOGRAPHY


H. AUTHORS AND ACKNOWLEDGEMENTS

Revised by

2018 ENA Clinical Practice Guidelines Committee
Judith Y. Bradford, DNS, MSN, RN, FAEN, Chairperson
Annie Horigan, PhD, RN, Chair-elect
Susan Barnason, PhD, RN, APRN, CNS, CS, CEN, CCRN, FAEN, FAAN
Andi Foley, DNP, RN, CEN, ACCNS-AG
Janet Kaiser, DNP, MSN, RN, CEN, NE-BC, CHEC
Robin MacPherson-Dias, MS, BSN, RN, CEN, CCRN, TCRN
Jean Proehl, MN, RN, CEN, CPEN, TCRN, FAEN, FAAN
Andie Slivinski, DNP, RN, ACNS-BC, CEN
Stephen J. Stapleton, PhD, MSN, MS, RN, CEN, FAEN
Mary Alice Vanhoy, MSN, RN, CEN, CPEN, NREMT-P, FAEN

Board Liaison
Gordon Gillespie, PhD, DNP, RN, CEN, CPEN, CNE, PHCNS-BC, FAEN, FAAN

Staff Liaisons
Altair Delao, MPH, Senior Associate, IENR
Leslie Gates, Sr. Administrative Assistant, IENR

Developed: 2009
Revised: 2018

ENA would like to acknowledge the following committee members, whose work laid the foundation for this document:
2008 Clinical Guidelines for Emergency Nursing Practice Committee
2009 Institute for Emergency Nursing Research (IENR) Committee

ENA Also recognizes the following committee members for their work on revisions:
2009 ENA Clinical Guidelines for Emergency Nursing Practice Committee
2011 ENA Emergency Nursing Resources Development Committee
2013 ENA Emergency Nursing Resources Development Committee
2014-2017 ENA Clinical Practice Guidelines Committee
APPENDIX A. PICOT DEVELOPMENT

Clearly formulating the clinical question is the key to facilitating search strategies. The framework utilized to define the question is PICOT:

- Patient Population - What patient population/problem are you trying to address?
- Intervention (area of interest) - What will you do for the patient or problem?
- Comparison Intervention or Groups – What is an alternate group or intervention?
- Outcome – What is the desired effect or improvement for the patient/population?
- Time – Timeframe

Using the PICOT framework allows for clear parameters when searching the literature and evaluating the application in the ED.

Example 1

<table>
<thead>
<tr>
<th>P</th>
<th>I</th>
<th>C</th>
<th>O</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient population</td>
<td>Intervention</td>
<td>Comparison</td>
<td>Outcome</td>
<td>Time</td>
</tr>
<tr>
<td>Low speed MVC patients in spinal precautions in the emergency department</td>
<td>Clearance by RN (assessed and removed from precautions per protocol by an RN)</td>
<td>Removed from precautions by a physician</td>
<td>Have more positive radiological findings</td>
<td>During their emergency department stay</td>
</tr>
</tbody>
</table>

Example PICOT Question: _Do low speed MVC patients in spinal precautions in the emergency department who are assessed and are cleared (have spinal precautions removed per protocol) by an RN have more positive radiological findings during their ED stay than patients whose precautions are removed by physicians?_

Example 2

<table>
<thead>
<tr>
<th>P</th>
<th>I</th>
<th>C</th>
<th>O</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient population</td>
<td>Intervention</td>
<td>Comparison</td>
<td>Outcome</td>
<td>Time</td>
</tr>
<tr>
<td>Do patients with chest pain in the emergency department</td>
<td>Cardiac enzyme profiles every 6 hours x 3</td>
<td>Cardiac enzyme profiles 12 hours x 2</td>
<td>Have fewer complications</td>
<td>In the first 24 hours of admission</td>
</tr>
</tbody>
</table>

Example 2 PICOT Question: _Do chest pain patients in the emergency department who have cardiac injury (enzyme) profiles every 6 hours times 3 vs. every 12 hours times 2, have fewer complications during their first 24 hours of admission?_
APPENDIX B. RESOURCES FOR THE CREATION OF CPGs

APA Resources

American Psychological Association  www.apastyle.org

Purdue APA  http://owl.english.purdue.edu/owl/resource/560/01/

Research Methods


Research Terms

Cochrane Tutorial  http://www.cochrane.org/glossary

Statistics Resources

Statistics Glossary  http://www.stats.gla.ac.uk/steps/glossary/index.html

### APPENDIX C. EVALUATION TABLE TEMPLATE

<table>
<thead>
<tr>
<th>Article File Name</th>
<th>#</th>
<th>Full APA Citation</th>
<th>Key words</th>
<th>Year Reviewed and CPG Committee Reviewer</th>
<th>Type of Pub (e.g., research, review article, letter to editor)</th>
<th>Research Purpose/Questions/Hypothesis</th>
<th>Design/Method (e.g., prospective, controlled, descriptive, variables)</th>
<th>Sample (N, randomized, convenience, population)</th>
<th>Setting (e.g., ED, critical care, urban, rural, community hospital, academic medical center)</th>
<th>Measures/Instruments/Appropriate Statistical Analysis (quantitative)/Data Saturation (qualitative)</th>
<th>Findings/Implications/Conclusions re: PICOT question (e.g., relative risk ratios, p value, confidence intervals)</th>
<th>Generalizable/Relevance to Practice/Feasibility</th>
<th>Limitations for both study design and results</th>
<th>Quality of Research</th>
<th>Level of Evidence</th>
<th>Final Dispo</th>
<th>Articles included in meta-analysis or systematic review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make sure this is identical to how article file is named</td>
<td>Include DOI when available</td>
<td>Pertaining to article</td>
<td>Year Initials</td>
<td>Use direct quote. Include page #.</td>
<td>IRB: yes, no, or not stated.</td>
<td>Both should be included.</td>
<td>Indicate specific brand/model of any devices used.</td>
<td>If conclusion does not fully apply to PICOT, include explanation of how it does.</td>
<td>Include comment s (4-point scale)</td>
<td>Include comments (7-point scale)</td>
<td>Include notes for each article to explain why assigned 1, 2, 3, or 4</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D: Study Selection Flowchart and Inclusion/Exclusion Criteria

The following databases were searched: [list all sources]

Search terms included: [list all search terms]
APPENDIX E. ENA CRITICAL APPRAISAL OF EVIDENCE GUIDE

Source: Is the study report from a peer-reviewed publication?

Purpose

Purpose of Study
Is the purpose of the study clearly stated?

Significance
1. Does the investigator provide a good argument for significance?
2. Does the investigator provide a rationale for why the study is being conducted?
3. Does the study have the potential to help solve or provide further data for evaluating a problem that is currently faced in clinical practice, education or research?
4. Is the study relevant to emergency nursing practice, education and research?

Problem statement
Is the problem statement clear and concise?

Background/Literature Review
1. Does the review of literature follow a logical sequence?
2. Does the author review a sufficient amount of literature? Does the literature review include research done within past five years? Does the literature review include historical and/or classical research?
3. Does the investigator use primary sources?
4. Does the investigator identify gaps in the research literature and support the need and design of the present study?
5. Does the literature review reflect the current state of science?

Theoretical Framework
1. Is there a theoretical/conceptual framework identified?
2. If no framework is provided, is it difficult to understand the relationships among variables in the study?
3. Is the identified conceptual framework relevant to the research area and are appropriate relationships among major variables identified?
4. Did the framework guide the methods and conclusions?

Research Questions/Hypotheses
1. Is the research question(s) clearly stated?
2. Are hypotheses specified, if applicable?
3. Are the hypotheses appropriate and precisely stated in a format that allows for testing?
4. Is there a logical consistency between purpose and research questions/hypotheses?

Methodology

Approach
Does the research approach fit the purpose of the study?

Design - Quantitative
1. Is the design appropriate for the research questions?
2. Was the study longitudinal or cross-sectional? Was the amount of data gathered appropriate for the research question and design?
3. If the study involves interventions was it quasi- or pre-experimental? Was this appropriate?
4. If the study involves no interventions was non-experimental (no manipulation of independent variable) appropriate?

Design – Qualitative (Refer to COREQ Checklist; http://cdn.elsevier.com/promis_misc/ISSM_COREQ_Checklist.pdf)
1. Is the design/methodology identified and appropriate?
2. Are the language and concepts consistent with the approach?
3. Does the investigator report any preconception or bias?
4. Is observational or interview experience described?

Variables
1. Are the variable types (independent and dependent) clearly stated?
2. Are the concepts clearly and operationally defined?

Validity
1. Is the data collection technique specified, including inter-rater reliability/inter-observer agreement if applicable to the study?
2. Does the study design effectively control sources for error/bias? If not, is it justified?
3. When present, are the potential threats to internal and external validity identified and discussed?
4. For qualitative studies, was the relationship between investigators and subjects as well as any bias addressed adequately?

Sample
1. Is sampling frame (population) identified and sampling method described?
2. Is the sample size adequate? Is a power analysis performed to show that the sample for the study is adequate, given the number of variables, to affect size and design?
3. Are the inclusion and/or exclusion criteria clear and appropriate?
4. Does the sample composition and size reflect study needs?

Data Collection
1. Are methods for data collection described/appropriate?
2. Are data collector(s) qualified?
3. Were the methods of data collection used reliable and independently verifiable?
4. Is there evidence of reflexivity, credibility and/or transferability for qualitative research?

IRB
1. Was IRB approval obtained for the study?
2. Is there adequate assurance that the rights of human subjects were protected?
3. Were the subjects pressured to participate or their responses influenced in any way?

Setting and Location
Are the setting and location for the study specified and clear? Was the setting appropriate for the study?

Measures/Instruments

Quantitative
1. Were the instruments appropriate to gather the information relevant to the research question(s)?
2. Was reliability testing described and adequate for the instruments/measures used in the study?
3. Was the validity testing described and adequate for the instruments/measures used in the study?

Qualitative
1. Did the investigator try to enhance trustworthiness of the study?
2. Did the investigator try to enhance and appraise the credibility of the data?
3. Were the findings dependable, confirmable and transferable?

Analysis

Quantitative
1. Are methods for data analysis consistent with research design and question/hypothesis?
2. Are the statistical methods for analysis described and appropriate?
3. Are appropriate statistical analysis methods being used according to level of measurement, sample size, sampling method?
4. Are the statistical findings adequately reported?

Qualitative
1. Was the data analysis rigorous?
2. Was the data transcribed/analyzed appropriately?
3. Were themes/concepts derived from the data?

Major Findings, Conclusions and Limitations

Findings and Conclusions
1. Are the results for each hypothesis clearly presented and supported?
2. Do the figures and tables help to explain the results?
3. Are results described within the theoretical framework and supporting literature?
4. Are conclusions based on the results and related to the hypotheses?
5. Are generalizations made within the scope of the results and findings?
6. Does the data support the findings?

Limitations
7. Are study limitations identified?
8. Are suggestions for future research identified?

Implications

Generalizability
Are the findings generalizable?

Relevance to Practice
1. Are implications of findings discussed appropriately (i.e., for practice, education and research)?
2. Are the findings clinically significant?
3. Are the findings relevant to emergency nursing practice?

Applicability to Practice
1. Are the study findings feasible for nurses to apply to practice?
2. Do the study findings offer solutions that provide benefits that outweigh the risks?
3. Is the population, intervention or phenomenon described applicable to the emergency environment?
4. Will the benefits affect a large number of clients or outcomes?
5. Does the study contradict other innovations or research?
6. Are the results and implementation under the authority of nursing?
7. What is the cost/benefit ratio?

8. Does the study help clarify a concept, theory or relationship with a population?

**Overall Quality of the Research**

1. Does the quality of the study meet the criterion of scientific merit and can it be used as evidence for practice?

2. Identify if there are major or minor flaws in study design for the following:
   a. Selection of patients
   b. Allocation of patients to treatment groups
   c. Therapeutic regimen
   d. Study administration
   e. Withdrawals from the study
   f. Patient blinding (in randomized clinical trials only)
   g. Outcome measurement
   h. Statistical analysis

3. Major flaw: A potential bias of the study which could invalidate the study’s findings.

4. Minor flaw: A small divergence from usual or best practices, but does not create a partiality which would suggest invalid study findings. Three minor flaws should be considered an equivalent of a major flaw.
APPENDIX F. GRADING OF EVIDENCE FOR DIAGNOSTIC/ PROGNOSTIC /THERAPEUTIC QUESTIONS

Citation: 

Design: Check below based on study design

<table>
<thead>
<tr>
<th>Design</th>
<th>Study Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design 1</td>
<td>Prospective cohort study; Cross-sectional study; Randomized controlled study (with concealed allocations)</td>
</tr>
<tr>
<td>Design 2</td>
<td>Retrospective cohort study; Cross-sectional study; Case-control study; Non-randomized interventional study including patients who do not receive the intervention</td>
</tr>
<tr>
<td>Design 3</td>
<td>Case series</td>
</tr>
</tbody>
</table>

Applicable to Clinical Question: 

Dimensions for Grading (consider both quality of execution and importance to result): NR/NA/U: Not reported, not applicable, or unclear.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Y</th>
<th>N</th>
<th>NR/NA/U</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inclusion criteria defined &amp; appropriate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate sampling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Diagnostic Questions: Evaluate a test on its diagnostic accuracy in order determine a condition, disease or illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spectrum of cases appropriate to likely test usage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All patients received criterion standard</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard administered independent of study test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard interpreted independent from study test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Prognostic Questions: Examine selected predictive variables or risk factors and assess their influence on a future outcome</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Studied at a uniform time in their disease course</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk factor measured in a valid and reliable way</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk factor measured without knowledge of outcome</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome measured without knowledge of risk factor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome measured in a valid and reliable way</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Therapeutic Questions: Provide a specific treatment to the patients to evaluate its impact on the disease/condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient groups comparable at baseline</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate blinding (single, double)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcomes defined &amp; appropriate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome measured in a valid and reliable way</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective or masked outcome assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate level of attrition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting for drop-outs and crossovers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate sample size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generalizability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data managed appropriately</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analyses appropriate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conclusions supported by the results</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry sponsored</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Use the appropriate section for the particular study: Diagnostic, Prognostic, or Therapeutic questions. Place N/A in the 2 questions sections that do not apply.
### Guidelines for Use:

1. Use the top grid to assign a **Design** (1, 2, or 3) based on the study’s design. Some designs may not fit this schema and should be assessed individually.

2. To qualify as **Design 1**, all patients in the study must have their diagnosis determined by an objective criterion standard, or a surrogate measure that is reliable and valid. To qualify as **Design 1**, the randomization process must be explicitly described to ensure investigators could not have influenced a patient’s treatment assignment (concealed allocation). Studies not describing concealed assessment should be considered **Design 2**. A study of prognosis should include patients with and without the risk factor of interest who are followed prospectively and evaluated to determine if they develop the outcome of interest. Some prognostic studies are done backwards; instead of finding patients with and without a risk factor and following them to see if they develop the outcome, case-control studies select patients who have developed or not developed the outcome and look retrospectively to see if the risk factor was present. Case-control studies are designated **Design 2**. Cross-sectional studies, where the presence of the risk factor and outcome are determined simultaneously, should also be considered **Design 2**.

3. **Applicability to the clinical question** relates to whether the study being evaluated is directly, indirectly, or not applicable to the clinical question proposed as part of the clinical policy.

4. Then assess the quality of the execution of the study using the list of important dimensions as reminders. Important dimensions to be considered when assessing the quality of a study include:
   a. A clear description of how patients were included in the study, including explicit and appropriate inclusion and exclusion criteria and appropriate sampling to generate the study sample from the base population. If conducted poorly, one or both features may introduce selection bias.

### Downgrading:

(Check the appropriate box)

<table>
<thead>
<tr>
<th>Downgrading</th>
</tr>
</thead>
<tbody>
<tr>
<td>No downgrading (no methodological limitations and directly applicable)</td>
</tr>
<tr>
<td>Downgrade 1 level (only minor methodological limitations)</td>
</tr>
<tr>
<td>Downgrade 1 level (indirectly applicable)</td>
</tr>
<tr>
<td>Downgrade 2 levels (major methodological limitation[s])</td>
</tr>
<tr>
<td>Fatally flawed or not applicable</td>
</tr>
</tbody>
</table>

### Quality of Evidence:

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>X</th>
</tr>
</thead>
</table>

### Level of Evidence:

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
</tr>
</thead>
</table>

### Notes:

Reviewer: ____________________________________________ Date: _______________________

---

**Diagnostic Studies:**

b. The **spectrum of cases** evaluated should be appropriate to the likely use of the study. Although this relates to generalizability, this also may introduce bias in measures of diagnostic accuracy.
c. The **outcome measure** specified should be the criterion (gold) standard. Occasionally, studies will use surrogate outcomes; if the surrogate is valid and reliable, such studies need not be downgraded.

d. The **criterion standard** should also be administered and interpreted independent of the diagnostic test being evaluated. A reasonable surrogate may be used in place of the criterion standard. Bias can be introduced by an investigator’s expectation of the result of the criterion standard. Masked outcome assessment is important when the outcome being measured is subject to expectation bias. When a study does not employ objective or masked criterion standard, expectation bias can be lessened by having an independent observer assess the outcome.

**Prognostic Studies:**

b. The **presence of the risk factor** should be determined at a uniform time early in the course of the disease. c. The presence or absence of a **risk factor** should be determined in a valid and reliable fashion.

d. The presence or absence of the **outcome** of interest should be determined in a valid and reliable fashion.

e. To avoid **expectation and recall bias**, the presence of risk factor should be determined without knowledge of the outcome and vice versa. Prospective cohort studies automatically fulfill this criterion. This criterion can be disregarded if the risk factor is an objective measure (e.g., gender). Also, the outcome of interest should ideally be measured without knowledge of the presence of the risk factor. This criterion can be disregarded if the outcome measure is objective (e.g., mortality).

**Therapeutic Studies:**

b. **Random allocation** is used to avoid confounding. Patients in different study groups should be similar in baseline characteristics that might impact outcome. Occasionally, investigators use statistical techniques (e.g., multivariable analyses) to attempt to adjust for confounders. In general, if patient groups are not comparable at baseline, multivariable analyses should be performed.

c. To avoid problems resulting from multiple comparisons and post hoc analyses, a **primary outcome measure** should be specified. The outcome measure should also be patient-relevant. Most often patient-relevant outcomes have face validity (i.e., they make sense - e.g., death or disability). Occasionally, studies will use surrogate markers that have been shown to predict patient-relevant outcomes (e.g., hypertension predicts stroke and myocardial infarction). Studies with validated surrogate outcomes need not be downgraded.

d. Bias can be introduced by an investigator’s expectation of the effect of the intervention. **Masked outcome assessment** is important when the outcome being measured is subject to expectation bias. Sometimes, the outcome measure is not subject to expectation bias (e.g., mortality), and under such circumstances the outcome can be considered **objective**. When a study does not employ objective or masked outcomes, expectation bias can be lessened by having an independent observer assess the outcome.

e. **Attrition** (i.e., patients who do not complete the study) may significantly bias a study. The impact of patients dropping out of a study can be lessened by various statistical techniques (e.g., intention-to-treat, imputation, sensitivity analyses). In general, attrition should be <20% but in some instances should be significantly less.

f. **Sample size** should be sufficient to provide adequate precision of estimates and to prevent type II errors (i.e., not finding a difference when one actually exists). Experimental studies should address power analysis and effect size.

g. **Generalizability** refers to the ability to generalize the study’s results to other patients or settings. Consider the representativeness of the patient population included in the study (e.g., were only patients with severe disease included).

h. **Data management** refers to whether the data were appropriately handled during collection and analyses; this may include issues of use of a DSMB, whether authors had access to data, and who performed analyses.

i. **Analyses** should be appropriate and valid for the study design (e.g., use of conventional diagnostic testing statistics – sensitivity, specificity, predictive values, likelihood ratios, and receiver operating characteristics curves, etc.).

j. **Conclusions supported by results** refers specifically to whether the conclusions are appropriately aligned with reported results or whether the authors took liberty in over- or under-extending their conclusions.

k. **Industry sponsored** studies often are influenced, either in their design, performance, or reporting, by the company, which may introduce bias. Who controlled and analyzed the data? Was a DSMB used?

5. At the **Downgrading** section, summarize the quality of execution and applicability to the clinical question into a decision on downgrading. The idea here is that the maximum evidence class that can be assigned is limited by the Design (i.e., Design 1 can support up to Class of Evidence I, but Design 2 can only support Class of Evidence II or lower, and so on). Essentially, the quality of execution is used to “downgrade” studies from the maximum class, as shown in the table below. Additionally, applicability to the clinical question also relates to downgrading (e.g., not applicable studies receive
a Class of Evidence “X”). Evidence Class X studies will not be used to support clinical policies. Use the downgrading results to generate a Class of Evidence based on the table below.

<table>
<thead>
<tr>
<th>Downgrading</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>I</td>
</tr>
<tr>
<td>1 level</td>
<td>II</td>
</tr>
<tr>
<td>2 levels</td>
<td>III</td>
</tr>
<tr>
<td>Fatally flawed or NA</td>
<td>X</td>
</tr>
</tbody>
</table>

*Adapted with permission from the ACEP Clinical Policies Committee*
APPENDIX G. EVIDENCE TABLE AND OTHER RESOURCES TABLE TEMPLATES

Evidence Table Template

<table>
<thead>
<tr>
<th>Reference</th>
<th>Research Questions, Purpose, Hypothesis</th>
<th>Design, Sample, Setting</th>
<th>Variables, Measures, Analysis</th>
<th>Findings, Implications</th>
<th>Quality of Evidence</th>
<th>Level of Evidence</th>
</tr>
</thead>
</table>

*Grading the Quality of the Evidence
I. Acceptable Quality: No Concerns
II. Limitations in Quality: Minor flaws or inconsistencies in the evidence
III. Major Limitations in Quality: Many flaws and inconsistencies in the evidence
IV. Not Acceptable: Major flaws in the evidence

**Grading the Levels of the Evidence (Melnyk & Fineout-Overholt, 2015)
I. Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials or evidence-based clinical practice guidelines based on systematic reviews of RCTs
II. Evidence obtained from at least one properly designed randomized controlled trial
III. Evidence obtained from well-designed quasi-experimental studies without randomization
IV. Evidence obtained from well-designed case control and cohort studies
V. Evidence from systematic reviews of descriptive and qualitative studies
VI. Evidence from a single descriptive or qualitative study
VII. Evidence from opinion of authorities and/or reports of expert committees

Other Resources Table Template

<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendix H. AGREE II Worksheet

#### Reference Evaluated:

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The overall objective(s) of the guideline is (are) specifically described.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2. The health question(s) covered by the guideline is (are) specifically described.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3. The population (patients, public, etc.) to whom the guideline is meant to apply are specifically described.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4. The guideline development group includes individuals from all the relevant professional groups.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5. The views and preferences have been sought.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6. The target users of the guideline are clearly defined.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>7. Systematic methods were used to search for evidence.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8. The criteria for selecting the evidence are clearly described.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9. The strengths and limitations of the body of evidence are clearly described.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>10. The methods used for formulating the recommendations are clearly described.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>11. The health benefits, side effects and risks have been considered in formulating the recommendations.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>12. There is an explicit link between the recommendations and the supporting evidence.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>13. The guideline has been externally reviewed by experts prior to its publication.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>14. A procedure for updating the guideline is provided.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>15. The recommendations are specific and unambiguous.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>16. The different options for management of the condition or health issue are clearly presented.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>17. Key recommendations are easily identifiable.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>19. The guideline provides advice and/or tools on how the recommendations can be put into practice.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>18. The guideline describes facilitators and barriers to its application.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>20. The potential resource implications of applying the recommendations have been considered.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>21. The guideline presents monitoring and/or auditing criteria.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>22. The views of the funding body have not influenced the content of the guideline.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>23. Competing interests of guideline group members have been recorded and addressed.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Rate the overall quality of this guideline.  
```
1: Lowest possible quality  
2       3       4       5       6       7: Highest possible quality
```

I would recommend this guideline for use.  
```
Yes                Yes, with modifications        No
```

NOTES:
### Appendix I. CPG Evaluation Worksheet

<table>
<thead>
<tr>
<th>CPG Title:</th>
<th>Clear and well developed</th>
<th>Needs some clarification or further development</th>
<th>Evaluated by: Needs substantial clarification or substantial development</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Problem statement/ PICOT Question</td>
<td>☐ The problem statement is specific and well delineated</td>
<td>☐ The problem statement is somewhat non-specific regarding significant aspects of the problem.</td>
<td>☐ The problem statement does not state the problem clearly.</td>
<td></td>
</tr>
<tr>
<td>2. Background/ Significance</td>
<td>☐ The Background/ significance provide a clear overview of the problem statement.</td>
<td>☐ The Background/ significance need some further clarification/ development to better address problem statement being addressed by CPG.</td>
<td>☐ The Background/ significance are inadequate to address the problem statement being addressed in the CPG.</td>
<td></td>
</tr>
<tr>
<td>3. Summary of Literature Review</td>
<td>☐ The literature review summary is a clear synthesis of relevant literature reflecting the scope of the CPG based on the PICOT question for the CPG.</td>
<td>☐ The summary of the literature review needs further clarification/ development in a few areas to more adequately synthesize the literature pertaining to the PICOT question for CPG.</td>
<td>☐ The literature review summary is inadequate to support the problem statement/ PICOT.</td>
<td></td>
</tr>
<tr>
<td>4. Evaluation Table</td>
<td>☐ The evidence table succinctly summarizes each evidence reference. The content of the evidence reference summarized provides sufficient information to evaluate reference for the CPG (e.g., to derive level and quality of evidence, to grade the relevance, to determine recommendations for practice).</td>
<td>☐ The evidence table needs further synthesis/ clarification or development for some of evidence reference(s). The content of the evidence references summarized provides inadequately synthesized or insufficient information to evaluate reference for the CPG (e.g., to derive level and quality of evidence, to grade the relevance, to determine recommendations for practice).</td>
<td>☐ The evidence table needs substantial revision of the synthesis for many or all evidence reference(s). The content of the evidence references summarized is an unacceptable synthesis to evaluate reference for the CPG (e.g., to derive level and quality of evidence, to grade the relevance, to determine recommendations for practice).</td>
<td></td>
</tr>
<tr>
<td>5. Overall Quality of the Evidence</td>
<td>☐ The ratings of the Levels of Evidence are supported by design.</td>
<td>☐ Information of the research/ comments/ narrative is somewhat incongruent with the overall conclusion regarding the quality of the evidence.</td>
<td>☐ Information/ comments/ narratives do not reflect the conclusion regarding the quality of the evidence.</td>
<td></td>
</tr>
<tr>
<td>I. Acceptable</td>
<td>II. Limitations in quality of the evidence</td>
<td>III. Major limitations in the quality of evidence</td>
<td>IV. Not acceptable</td>
<td></td>
</tr>
<tr>
<td>6. Grade the Levels of the Evidence*</td>
<td>☐ Agree with the grading of the levels of evidence for each of the evidence references.</td>
<td>☐ There are some grading of the levels of evidence that are inconsistent with one or more of the evidence references.</td>
<td>☐ There are several evidence references that have been inconsistently graded based on the levels of evidence.</td>
<td></td>
</tr>
<tr>
<td>7. Description Options/ Interventions and the Level of Recommendations</td>
<td>☐ The final recommendations are clearly defined and are relevant to the CPG PICOT question. There is comprehensive inclusion of all evidence findings reflected in the final recommendations.</td>
<td>☐ The final recommendations are somewhat unclear, and may not adequately reflect the scope of the CPG PICOT question. And/or there is not a comprehensive inclusion of all evidence findings reflected in the final recommendations.</td>
<td>☐ The final recommendations are not clear; and/or do not adequately reflect the scope of the CPG PICOT question. Furthermore, there is not a comprehensive inclusion of all evidence findings reflected in the final recommendations.</td>
<td></td>
</tr>
</tbody>
</table>

*Level I: Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials or evidence-based clinical practice guidelines based on systematic reviews of RCTs
Level II: Evidence obtained from at least one properly designed randomized controlled trial
Level III: Evidence obtained from well-designed, quasi-experimental studies without randomization
Level IV: Evidence obtained from well-designed case control and cohort studies
Level V: Evidence from systematic reviews of descriptive and qualitative studies
Level VI: Evidence from a single descriptive or qualitative study
Level VII: Evidence from opinion of authorities and/or reports of expert committees
APPENDIX J: CPG SYNOPSIS TEMPLATE

The CPG Synopsis is a brief, 1-2 page version of the full CPG. The Synopsis includes:

**Clinical question.** The specific question to be addressed; including scope of evidence to be addressed by using PICOT format will be used.

**Problem Statement.** A brief background of the significance of the problem/rationale for the Synopsis as it pertains to the clinical question will be briefly stated. Selected references are embedded in this section.

**Evidence-based Recommendations.** Delineate the description of the decision options/interventions stated as clinical practice guideline recommendations. Include the level of evidence for each recommendation.

The Key for Level of Evidence

<table>
<thead>
<tr>
<th>Key</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level A (High)</td>
<td>Based on consistent and good quality of evidence; has relevance and applicability to emergency nursing practice.</td>
</tr>
<tr>
<td>Level B (Moderate)</td>
<td>There are some minor inconsistencies in quality evidence; has relevance and applicability to emergency nursing practice.</td>
</tr>
<tr>
<td>Level C (Weak)</td>
<td>There is limited or low-quality patient-oriented evidence; has relevance and applicability to emergency nursing practice.</td>
</tr>
<tr>
<td>Not Recommended</td>
<td>Based upon current evidence.</td>
</tr>
<tr>
<td>I/E:</td>
<td>Insufficient evidence upon which to make a recommendation.</td>
</tr>
<tr>
<td>N/E:</td>
<td>No evidence upon which to make a recommendation.</td>
</tr>
</tbody>
</table>

Disclaimer

This document, including the information and recommendations set forth herein (i) reflects ENA’s current position with respect to the subject matter discussed herein based on current knowledge at the time of publication; (ii) is only current as of the publication date; (iii) is subject to change without notice as new information and advances emerge; and (iv) does not necessarily represent each individual member’s personal opinion. The information and recommendations discussed herein are not codified into law or regulations. Variations in practice and practitioner’s best nursing judgment may warrant an approach that differs from the recommendations herein. ENA does not approve or endorse any specific sources of information referenced. ENA assumes no liability for any injury and/or damage to persons or property arising from the use of the information in this document.

The final version of the Synopsis will be peer reviewed by the Committee and IENR Advisory Council.
# APPENDIX K. Determinants of the Level of Recommendation

<table>
<thead>
<tr>
<th>Component</th>
<th>Decision Rule</th>
</tr>
</thead>
</table>
| **Grade the quality of the evidence** | 1. Acceptable Quality: No concerns  
2. Limitations in Quality: Minor flaws or inconsistencies in the evidence  
3. Major Limitations in Quality: Many flaws and inconsistencies in the evidence  
4. Not Acceptable: Major flaws in the evidence |

**Specify any study design concerns:**

| Grade the level of the evidence (Melnyk & Fineout-Overholt, 2015) | I. Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials or evidence-based clinical practice guidelines based on systematic reviews of RCTs  
II. Evidence obtained from at least one properly designed randomized controlled trial  
III. Evidence obtained from well-designed quasi-experimental studies without randomization  
IV. Evidence obtained from well-designed case control and cohort studies  
V. Evidence from integrative or systematic reviews of descriptive and qualitative studies  
VI. Evidence from a single descriptive or qualitative study  
VII. Evidence from opinion of authorities and/or reports of expert committees |

<table>
<thead>
<tr>
<th>Grade the relevance and applicability of the evidence to emergency nursing practice</th>
<th>Is there consensus in the Subcommittee that the evidence has relevance and applicability to emergency nursing practice?</th>
</tr>
</thead>
</table>
|                  | □ YES  
□ NO |


APPENDIX L. Levels of Recommendation for Practice

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A: High</strong></td>
</tr>
<tr>
<td>• Reflects a high degree of clinical certainty.</td>
</tr>
<tr>
<td>• Based on availability of high quality level I, II and/or III evidence available using Melnyk &amp; Fineout-Overholt grading system (Melnyk &amp; Fineout-Overholt, 2015).</td>
</tr>
<tr>
<td>• Based on consistent and good quality evidence; has relevance and applicability to emergency nursing practice.</td>
</tr>
<tr>
<td>• Is beneficial.</td>
</tr>
</tbody>
</table>

| **B: Moderate** |
| • Reflects moderate clinical certainty. |
| • Based on availability of Level III and/or Level IV and V evidence using Melnyk & Fineout-Overholt grading system (Melnyk & Fineout-Overholt, 2015). |
| • There are some minor or inconsistencies in quality evidence; has relevance and applicability to emergency nursing practice. |
| • Is likely to be beneficial. |

| **C: Weak** |
| • Has limited or unknown effectiveness |
| • Level V, VI and/or VII evidence available using Melnyk & Fineout-Overholt grading system (Melnyk & Fineout-Overholt, 2015) |
| • Based on consensus, usual practice, evidence, case series for studies of treatment or screening, anecdotal evidence and/or opinion. |
| • There is limited or low-quality patient-oriented evidence; has relevance and applicability to emergency nursing practice. |

| **NR: Not Recommended for Practice** |
| • No objective evidence or only anecdotal evidence available; or the supportive evidence is from poorly controlled or uncontrolled studies. |
| • Other indications for not recommending evidence for practice may include: |
| 1. Conflicting evidence. |
| 2. Harmfulness has been demonstrated. |
| 3. Cost or burden necessary for intervention exceeds anticipated benefit |
| 4. Does not have relevance or applicability to emergency nursing practice |
| • There are certain circumstances in which the recommendations stemming from a body of evidence should not be rated as highly as the individual studies on which they are based. For example: |
| 1. Heterogeneity of results. |
| 2. Uncertainty about effect of magnitude and consequences. |
| 3. Strength of prior beliefs. |
| 4. Publication bias. |
### APPENDIX M. CPG Development Process and Approximate Schedule

<table>
<thead>
<tr>
<th>Activities</th>
<th>Assignments</th>
<th>Y1Q3</th>
<th>Y1Q4</th>
<th>Y2Q1</th>
<th>Y2Q2</th>
<th>Y2Q3</th>
<th>Y2Q4</th>
<th>Y3Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Committee identifies potential new CPGs</td>
<td>Committee Chair 1-2 Senior Committee Members</td>
<td>Y2Q3</td>
<td>Y2Q4</td>
<td>Y2Q1</td>
<td>Y2Q2</td>
<td>Y2Q3</td>
<td>Y2Q4</td>
<td>Y3Q1</td>
</tr>
<tr>
<td>• ENA Board of Directors approves final list of CPGs to begin development in Y2</td>
<td>Staff Liaison(s)</td>
<td></td>
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<tr>
<td>• Project orientation</td>
<td>Committee Chair</td>
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<td></td>
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<tr>
<td>• Assign subcommittees for CPG development</td>
<td>Full Committee</td>
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<tr>
<td>• Onsite meeting to plan and develop CPGs</td>
<td>Full Committee</td>
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<tr>
<td>• Finalize PICOT for CPG</td>
<td>Subcommittee</td>
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<tr>
<td>• Critique of literature</td>
<td>Subcommittee</td>
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<tr>
<td>• Development of Evaluation table</td>
<td>Subcommittee</td>
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<tr>
<td>• Finalize the Evaluation table and draft of CPG for mid-year Committee meeting</td>
<td>Subcommittee</td>
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<tr>
<td>• Critique and input on draft CPG by Committee &amp; IENR representativess</td>
<td>Full Committee</td>
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<tr>
<td>• Draft CPG completed</td>
<td>Subcommittee</td>
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<tr>
<td>• Literature search conducted to include any additional current references since beginning of the year and/or since last literature search</td>
<td>Subcommittee</td>
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<tr>
<td>• Final review by Committee and IENR Advisory Council</td>
<td>Staff Liaison(s)</td>
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<tr>
<td>• Final formatting/copy editing</td>
<td>Staff Liaison(s)</td>
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<tr>
<td>• Approval by ENA Board of Directors</td>
<td>Staff Liaison(s)</td>
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<tr>
<td>• CPG to Marketing for final layout</td>
<td>Staff Liaison(s)</td>
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<tr>
<td>• Final CPG uploaded to ENA website</td>
<td>Staff Liaison(s)</td>
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<tr>
<td>• CPG submitted to JEN</td>
<td>Staff Liaison(s)</td>
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</table>
CPG Development Process: New Topic

1. **Topic Identified; preliminary IoT search performed**
   - Topic approved by BOD

2. **PICOT Question developed**
   - Subcommittee reviews literature; refines PICOT if needed
   - Subcommittee writes CPG

3. **Draft A approved by CPG Committee**
   - Subcommittee addresses any areas of concern
   - IENR Staff creates report and provides it to CPG Committee
   - IENR Advisory Council (AC) reviews CPG and provides feedback to IENR Staff

4. **Draft B approved by CPG Committee**
   - IENR Staff obtains the CPG and provides relevant issues to CPG Chair & Subcommittee prior to submission of draft to copy editor
   - Subcommittee addresses any areas of concern

5. **Draft C approved by Subcommittee & Chair**
   - IENR Staff sends CPG to Copy Editor
   - Copy Editor, Subcommittee, and Chair complete final edits
   - Repeat until all is resolved

6. **Draft D ready for BOD review**
   - IENR Staff reviews CPG for Board review (consent agenda)
   - IENR Staff submits CPG for Board review

7. **CPG approved by BOD**
   - IENR Staff works with Web Staff and/or Marketing to complete layout and final posting to Website

Repeat until all is resolved