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Quality assessment of clinical practice guidelines for perioperative care and use of GRADE: a systematic review protocol

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Quality assessment of clinical practice guidelines for perioperative care and use of GRADE: a systematic review protocol

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Abstract

Introduction: Perioperative care is a broad field covering an array of elective and emergency procedures. Clinical practice guidelines (CPGs) for perioperative care exist with a various degree of methodological quality and we intend to critically appraise them using AGREE II instrument and investigate the use of GRADE.

Methods and analysis: We searched MEDLINE (Ovid), Epistemonikos, and PROSPERO and did not identify any similar systematic review in this area. Databases, repositories, and websites of guideline developers and medical societies will be searched, including MEDLINE (Ovid), Embase (Ovid), DynaMed, Guidelines International Network (G-I-N), BIGG base internacional de guías GRADE, ECRI Guideline Trust or National Institute for Clinical Evidence (NICE) to identify all CPGs for perioperative care in adult population in a general clinical setting. Any CPGs, expert guidance, position papers, guidance documents, and consensus statements published in the last five years by experts or international organizations that provide guidance or recommendations in the available full text will be included with no geographical, or language limitation. Excluded will be those containing only good practice statements. Critical appraisal using the AGREE II tool will be performed by two independent reviewers. The data presented in a narrative and tabular form will include the results of the critical appraisal for all identified CPGs for all AGREE II domains, and an assessment of the use of the GRADE approach.

Ethics and dissemination: Ethics approval is not required. Findings will be disseminated through professional networks, conference presentations and publication in a scientific journal.

Keywords: Perioperative care; Surgery; Recommendations; Guidelines; GRADE; AGREE II

Article Summary

Strengths and limitations of this study

We intend to comprehensively search for the best quality clinical practice guidelines (CPGs) for perioperative care in bibliographical databases MEDLINE (Ovid) and Embase (Ovid) and specific guideline repositories.

We will identify the CPGs that cover a range of issues such as assessing the risks of surgeries, prevention of adverse events, pain management, transfusion management, antibiotic prophylaxis, and more. The review will not focus on any specific type of surgery or patient population.

We will search for and include CPGs in all languages and geographical contexts in the last five years to provide an assessment of the rigor of development and methodological quality of current CPGs in perioperative care. We will also review the use of the GRADE approach.

The main aim and strength of the review will be in the comprehensive search strategy, and the assessment of methodological quality of the CPGs by professional methodologists using the AGREE II tool. We do not intend to extract the recommendations from the identified relevant

CPGs. We will, however, summarize the main strengths and weaknesses of the process of CPG development in perioperative care and suggest ways of improvement.

INTRODUCTION

The worldwide increase in the prevalence of chronic diseases places an enormous clinical and financial burden on healthcare providers.[1] For these reasons, the current acutely oriented healthcare systems have been transformed into more flexible systems capable of providing effective and high-quality chronic care, and preventive measures have also been proposed for patients and healthy populations.[2, 3] Surgery is an integral part of global health care with an estimated 234 million major surgical procedures performed annually.[4] The essential surgical and anesthetic services are increasingly acknowledged as possible key factors in reducing death and disability for developing countries whilst remaining cost-effective.[5]

Perioperative care is a broad field covering an array of elective and emergency procedures.[6] It includes interventional, mini-invasive, diagnostic or therapeutic care in close cooperation with nursing care. Patients must be carefully evaluated for risks, and each intervention must be weighed for benefits, patient values, complications, and cost-effectiveness. Clinical practice guidelines (CPG) may streamline perioperative management of patients and improve outcomes, may even form policy and legislation. A systematic review of CPGs for perioperative care may be useful in assessing their quality, and thus help to choose the best available guideline for adoption or adaptation across the world.

The AGREE II instrument[7] is used to appraise the quality of CPGs. It also helps guideline working groups by providing a methodologic and reporting strategy for CPG development[8], together with GIN-McMaster Guideline Development Checklist.[9] It ascertains the measure of "confidence that the potential biases of guideline development have been addressed adequately and that the recommendations are both internally and externally valid, and are feasible for practice".[8] Currently, the most rigorous and transparent methodology for developing CPGs is the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) approach.[10] However, other approaches, mostly based on the assessment of the research design of primary studies, exist and are in use, as are various modifications of the GRADE approach.

Guidelines for perioperative care exist with a various degree of methodological quality and we intend to critically appraise them using the AGREE II tool, and investigate the use of GRADE approach. We searched MEDLINE (Ovid), Epistemonikos, and PROSPERO, and did not identify any similar systematic review in this area, although such reviews exist for other topics, specific populations or more narrowly defined perioperative care aspects.

This work is a part of the Czech National project of CPG development,[11] the first such national endeavor in the country. We chose perioperative care based on the growing need for evidence-based recommendations in the Czech Republic in consultation with the key stakeholders (the Ministry of Health, heads of appropriate Czech professional organizations, health insurance deputies). Based on this work, an adaptation of a high-quality CPG will take place in 2021 and will ultimately be published under the Czech Ministry of Health.

Research question/objective:

The review question for this systematic review is framed using the 'Population and Clinical Areas, Interventions, Comparators, Attributes of CPGs and Recommendation characteristics' (PICAR) elements[12]: What is the methodological quality of clinical practice guidelines containing recommendations for perioperative care in the adult population for the general surgical setting?

METHODS AND ANALYSIS

Eligibility criteria

Population and clinical indications
The search will be performed to identify all clinical practice guidelines for general perioperative care in the adult population (specific age as defined by the CPGs, e.g., typically 16 or 18). We will not include CPGs on other than adult population or those for specific populations or aims (e.g., only gynecologic patients, to prevent dementia, head and neck cancer patients, opioid-naïve patients).

Intervention and Comparators
We will aim to identify CPGs in the general area of perioperative care for non-specialized surgeries (not specific for any given type of surgery). The CPG should cover a broad spectrum of questions for pre-, intra- and post-operative care, such as assessing the risks of surgeries, prevention of adverse events, pain management, transfusion management, antibiotic prophylaxis, maintenance of normothermia, fluid and intake management, advice and mental preparation of patients, any supplements needed, anticoagulant therapy, control during surgery, and more, and be applicable to any surgical setting. We will include a CPG if its scope covers at least 3 of these or similar areas. The CPG will be excluded if targeting only one type of clinical specialist, disease, surgery, aim or setting (e.g., the role of neuroimaging, for total hip replacement only).

Attributes of eligible CPGs
We will include any self-identified CPGs, expert guidance, position papers, guidance documents, and consensus statements published in the last five years by experts in the field or international organizations on the given topic and population, that provide guidance or recommendations in the full text with no geographical, or language limitation. We will include only the latest version of the CPG. We will include CPGs of any quality. Excluded will be papers containing only good practice statements[13] or CPGs with unavailable full text (exclusions will be recorded and reported).

Recommendation characteristics
The CPG should contain clearly identifiable recommendations. Excluded will be papers containing only good practice statements.

Types of resources and search strategy

The databases and guideline repositories to be searched include MEDLINE (Ovid), Embase (Ovid), DynaMed, Guidelines International Network (G-I-N), BIGG base internacional de

guías GRADE or ECRI Guideline Trust. Sources of unpublished documents and grey literature to be searched include websites of guidelines developers as National Institute for Clinical Evidence (NICE), Scottish Intercollegiate Guidelines Network (SIGN), Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften (AWMF), KCE Belgian Health Care Knowledge Centre, Haute Autorité de Santé (HAS), ISCI; or websites of other governmental or non-governmental organizations and medical societies/associations.

The search strategy will comprise of the following keywords and related terms: (pre-operative* OR preoperative* OR pre-surg* OR presurg* OR perioperative* OR peri-operative* OR intraoperative* OR intra-operative* OR intrasurg* OR intra-surg* OR peroperative* OR per-operative* OR postoperative* or post-operative* or post-surg* or postsurg*) AND (care* OR caring OR treat* OR nurs* OR monitor* OR recover* OR medicine).

All identified CPGs will be imported into EndNote X9.2, any duplicates removed, and titles/abstracts and then full texts screened by two independent reviewers against the eligibility criteria. Search results will be presented in a PRISMA flowchart.[14]

Data extraction

All CPGs will be assessed by at least two independent reviewers and data will be extracted independently. If needed, guideline developers will be contacted to clarify any uncertainty. The data to be extracted will include:

- Guideline field and scope
- Year of publication
- Publishing region
- Version of the guideline
- Guideline language
- Developing organization
- System of rating evidence used in the guideline

Quality assessment

All eligible CPGs will be assessed using the full AGREE II tool to determine the quality of the guideline development process. Two reviewers will independently assess the CPGs using AGREE II tool and discuss any conflicts together and with a third senior reviewer. Then, they will have the opportunity to alter their scoring, if necessary. All review authors are trained in using AGREE II instrument. The junior methodologists will be supervised as needed.

AGREE II is a 23-item instrument divided into six domains: scope and purpose, stakeholder involvement, rigor of development, clarity of presentation, applicability and editorial independence. The whole tool will be used to appraise each identified CPG and each item will be scored using a 7-point Likert scale, ranging from strongly disagree (1) to strongly agree (7). In addition, an overall assessment score will be given to each CPG.

Data analysis and presentation

The extracted data will be analyzed and summarized in a tabular and narrative form. A table with the characteristics of the identified relevant CPGs and the system used for grading the evidence and recommendations will be provided. We will narratively summarize the characteristics of the grading systems used, the rationale behind them and how it may have influenced the overall quality of the respective CPGs.

We will report and analyze the rigor of development as depicted by the scores of the AGREE II tool, specifically, the sums of scores of each item for each of the six domains from each reviewer, and then percentage of the total scaled from the number. Same for the assessment of the overall guideline quality.

However, the guideline quality will be ascertained based on the scaled domain scores. We will calculate the inter-rater reliability (via the intraclass correlation coefficient (ICC)) for each domain to determine the reviewer agreement.

The results of this systematic review will be reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis statement.[14] Any changes made to the methodology described in this protocol will be reported and explained in the systematic review. We used the PRISMA-P checklist when writing our report.[15] We fully intend to publish all results of the proposed systematic review in a scholarly open-access journal.

POTENTIAL IMPACT OF THIS RESEARCH

This research will inform what quality are the available CPGs in perioperative care in any language and geographical context and how GRADE is used and possibly modified. It may also be used as a methodological guide to selecting the most robust, transparent and trustworthy existing guideline for adoption or adaptation by local and national organizations. Although we will not extract the actual recommendations from the identified relevant CPGs, we will summarize the main strengths and weaknesses in the process of their development and suggest ways of improvement. The review might be viewed as a feedback to the guideline developers and may provide data for future monitoring and improvement of the guideline development processes.

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Footnotes

Contributions: Conceptualization, MK and LK; Methodology, MK, LK, SS, TN; Validation, MK; Writing – Original Draft Preparation, LK, PB, JB; Writing – Review & Editing, PB, JB, TN, SS, MK, JK; Supervision, MK; Funding Acquisition, LK; Search strategy, SS.

Competing interests: The authors declare no financial conflict of interest. JK is a director of Center of Evidence-Based Education & Arts Therapies, Faculty of Education, Palacky University, MK and LK are director and acting deputy director of the Czech National Centre for Evidence-Based Healthcare and Knowledge Translation. LK, MK (head methodologist), PB, JB, SS and TN are involved in a Czech national project for the development of clinical practice guidelines as methodologists.

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Patient consent for publication: Not required.

Provenance and peer review: Not commissioned; externally peer reviewed.

Reporting checklist for protocol of a systematic review and meta analysis.

Based on the PRISMA-P guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

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		Reporting Item	Page Number
Title			
Identification	#1a	Identify the report as a protocol of a systematic review	1
Update	#1b	If the protocol is for an update of a previous systematic review, identify as such	n/a
Registration			
	#2	If registered, provide the name of the registry (such as PROSPERO) and registration number	n/a
Authors			
Contact	#3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contribution	#3b	Describe contributions of protocol authors and identify the guarantor of the review	1

Amendments			
	#4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	6
Support			
Sources	#5a	Indicate sources of financial or other support for the review	7
Sponsor	#5b	Provide name for the review funder and / or sponsor	7
Role of sponsor or funder	#5c	Describe roles of funder(s), sponsor(s), and / or institution(s), if any, in developing the protocol	7
Introduction			
Rationale	#6	Describe the rationale for the review in the context of what is already known	2
Objectives	#7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	4
Methods			
Eligibility criteria	#8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	4
Information sources	#9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	4-5
Search strategy	#10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	5
Study records - data management	#11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	n/a
Study records - selection process	#11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	5
Study records - data	#11c	Describe planned method of extracting data from reports (such as	5

collection process		piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	
Data items	#12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	5
Outcomes and prioritization	#13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	n/a
Risk of bias in individual studies	#14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	5
Data synthesis	#15a	Describe criteria under which study data will be quantitatively synthesised	5-6
Data synthesis	#15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I2, Kendall's τ)	n/a
Data synthesis	#15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	n/a
Data synthesis	#15d	If quantitative synthesis is not appropriate, describe the type of summary planned	6
Meta-bias(es)	#16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	n/a
Confidence in cumulative evidence	#17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	n/a

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Abstract

Introduction: Perioperative care is a broad field covering an array of elective and emergency procedures. Clinical practice guidelines (CPGs) for perioperative care exist with various degrees of methodological quality. We intend to critically appraise them using AGREE II instrument and investigate the use of GRADE.

Methods and analysis: We searched MEDLINE (Ovid), Epistemonikos, Cochrane Database of Systematic Reviews (CDSR), and PROSPERO and did not identify any similar systematic review in this area. We will search databases, repositories, and websites of guideline developers and medical societies, including MEDLINE (Ovid), Embase (Ovid), DynaMed, the GIN international guideline library and registry of guidelines in development, BIGG international database of GRADE guidelines, ECRI Guideline Trust, or National Institute for Clinical Evidence (NICE) to identify all CPGs for perioperative care in an adult population in a general clinical setting. We will include CPGs, expert guidance, position papers, guidance documents, and consensus statements published in the last five years by experts or international organizations that provide guidance or recommendations in the available full text with no geographical or language limitation. Excluded will be those containing only good practice statements. Two independent reviewers will perform critical appraisal using the AGREE II tool. The data presented in a narrative and tabular form will include the results of the critical appraisal for all identified CPGs for all AGREE II domains and an assessment of the use of the GRADE approach.

Ethics and dissemination: Ethics approval is not required. We will disseminate the findings through professional networks and conference presentations and will publish the results.

Keywords: Perioperative care; Surgery; Recommendations; Guidelines; GRADE; AGREE II

Article Summary

Strengths and limitations of this study

We intend to comprehensively search for the best quality clinical practice guidelines (CPGs) for perioperative care in bibliographical databases MEDLINE (Ovid) and Embase (Ovid) and specific guideline databases and repositories.

We will identify the CPGs that cover a range of issues, such as assessing the risks of surgeries, prevention of adverse events, pain management, transfusion management, antibiotic prophylaxis, and more. The review will not focus on any specific type of surgery or patient population.

We will search for and include CPGs in all languages and geographical contexts in the last five years to provide an assessment of the rigor of development and methodological quality of current CPGs in perioperative care. We will also review the use of the GRADE approach.

The main aim and strength of the review will be in the comprehensive search strategy and the assessment of the methodological quality of the CPGs by professional methodologists using the AGREE II tool. We do not intend to extract the recommendations from the identified

relevant CPGs. We will, however, summarize the main strengths and weaknesses of the process of CPG development in perioperative care and suggest ways of improvement.

INTRODUCTION

The worldwide increase in the prevalence of chronic diseases places an enormous clinical and financial burden on healthcare providers.[1] For these reasons, the current acutely oriented healthcare systems have been transformed into more flexible systems capable of providing effective and high-quality chronic care, and preventive measures have also been proposed for patients and healthy populations.[2, 3] surgery is an integral part of global health care, with an estimated 234 million major surgical procedures performed annually.[4] The essential surgical and anesthetic services are increasingly acknowledged as possible vital factors in reducing death and disability for developing countries while remaining cost-effective.[5]

Perioperative care is a broad field covering an array of elective and emergency procedures.[6] It includes interventional, mini-invasive, diagnostic, or therapeutic care in close cooperation with nursing care. Patients must be carefully evaluated for risks, and each intervention must be weighed for benefits, patient values, complications, and cost-effectiveness. Clinical practice guidelines (CPG) may streamline perioperative management of patients and improve outcomes, may even form policy and legislation. A systematic review of CPGs for perioperative care may help assess their quality and thus help choose the best available guideline for adoption or adaptation across the world.

The AGREE II instrument[7], published by the AGREE Collaboration in 2010, is used to appraise the quality of CPGs. It also helps guideline working groups by providing a methodologic and reporting strategy for CPG development[8], together with the GIN-McMaster Guideline Development Checklist.[9] It ascertains the measure of "confidence that the potential biases of guideline development have been addressed adequately and that the recommendations are both internally and externally valid, and are feasible for practice".[8] Currently, the most rigorous and transparent methodology for developing CPGs is the Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) approach.[10] However, other systems, primarily based on the assessment of the research design of primary studies, exist and are in use, as are various modifications of the GRADE approach.

In 2003, the AGREE Collaboration, a group of international guideline developers and researchers, undertook a project of developing the first AGREE Instrument to develop a tool to assess the quality of guidelines.[11] It was a 23-item tool organized into six quality domains. Following this first endeavor, a sub-section of the AGREE Collaboration, the AGREE Next Steps Research Consortium, was established to improve the AGREE's reliability and validity further.[12, 13] The Consortium published the currently widely used AGREE II tool in 2010, replacing the original instrument, and developed a user's manual to facilitate the ability of users to apply the instrument with confidence. Since then, the tool has received recognition worldwide, and various extensions have been developed and tested.[14] Guideline developers are also using the tool as a reporting checklist.[15]

Guidelines for perioperative care exist with various degrees of methodological quality. We intend to critically appraise them using the AGREE II tool and investigate the use of the

GRADE approach. We searched MEDLINE (Ovid), Epistemonikos, Cochrane Database of Systematic Reviews (CDSR), and PROSPERO and did not identify any similar systematic review in this area. However, such reviews exist for other topics, specific populations, or more narrowly defined perioperative care aspects.

This work is a part of the Czech National project of CPG development,[16] the first such national endeavor in the country. We chose perioperative care based on the growing need for evidence-based recommendations in the Czech Republic in consultation with the key stakeholders (the Ministry of Health, heads of appropriate Czech professional organizations, health insurance deputies). Based on this work, an adaptation of a high-quality CPG will occur under the Czech Ministry of Health.

Research question/objective:

We framed the review question for this systematic review using the 'Population and Clinical Areas, Interventions, Comparators, Attributes of CPGs and Recommendation characteristics' (PICAR) elements[17]:

What is the methodological quality of clinical practice guidelines containing recommendations for perioperative care in the adult population for the general surgical setting?

METHODS AND ANALYSIS

Eligibility criteria

Population and clinical indications
We will include clinical practice guidelines for general perioperative care in the adult population (specific age defined by the CPGs, e.g., typically 16 or 18). We will exclude CPGs targeting particular populations or conditions (e.g., only gynecologic patients, to prevent dementia, head and neck cancer, opioid-naïve patients).

Intervention and Comparators
We will aim to identify CPGs in the general area of perioperative care for non-specialized surgeries (not specific for any given type of surgery). The CPG should cover a broad spectrum of questions for pre-, intra-, and postoperative care, such as assessing the risks of surgeries, prevention of adverse events, pain management, transfusion management, antibiotic prophylaxis, maintenance of normothermia, fluid and intake management, advice and mental preparation of patients, any supplements needed, anticoagulant therapy, control during surgery, and more, and apply to any surgical setting. We will include a CPG if its scope covers at least 3 of these or similar areas. We will exclude CPGs targeting only one type of clinical specialist, disease, surgery, or setting (e.g., the role of neuroimaging, for total hip replacement only).

Attributes of eligible CPGs
We will include any self-identified CPGs, expert guidance, position papers, guidance documents, and consensus statements published in the last five years by experts in the field or

international organizations on the given topic and population, that provide guidance or recommendations in the full text with no geographical, or language limitation. We will include only the latest version of the CPG. Excluded will be CPGs with unavailable full text (we will record and report exclusions).

Recommendation characteristics
The CPG should contain recommendations and methods of their development, i.e., we will exclude documents that self-proclaim as guidelines in which it is not clear which parts of the text are recommendations or how any of the provided statements were developed. Excluded will be papers containing only good practice statements.[18] Good practice statements, as opposed to recommendations, do not depict certainty of evidence or strength of recommendation and do not follow the rigorous methodology typical for recommendations. However, sometimes the GDG finds a statement needs to be issued for various reasons, but to search for evidence would be a waste of the group's time. Guideline authors are discouraged from issuing good practice statements.[19]

Patient and Public Involvement

No patients will be involved in this review.

Types of resources and search strategy

The databases and guideline repositories to be searched include MEDLINE (Ovid), Embase (Ovid), DynaMed, the GIN international guideline library and registry of guidelines in development, BIGG international database of GRADE guidelines or ECRI Guideline Trust. Sources of unpublished documents and grey literature to be searched include websites of guidelines developers as National Institute for Clinical Evidence (NICE), Scottish Intercollegiate Guidelines Network (SIGN), Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften (AWMF), KCE Belgian Health Care Knowledge Centre, Haute Autorité de Santé (HAS), Institute for Clinical Systems Improvement (ISCI); or websites of other governmental or non-governmental organizations and medical societies/associations.

The search strategy will comprise of the following keywords and related terms: (pre-operative* OR preoperative* OR pre-surg* OR presurg* OR perioperative* OR peri-operative* OR intraoperative* OR intra-operative* OR intrasurg* OR intra-surg* OR peroperative* OR per-operative* OR postoperative* or post-operative* or post-surg* or postsurg*) AND (care* OR caring OR treat* OR nurs* OR monitor* OR recover* OR medicine). Corresponding MeSH or Emtree terms will also be used when applicable.

We will import all identified CPGs into EndNote X9.2, any duplicates removed, titles/abstracts, and then full texts screened by two independent reviewers against the eligibility criteria. We will present search results in a PRISMA flowchart.[20]

Data extraction

At least two independent reviewers will assess all CPGs, and extract data independently. If needed, we will contact guideline developers to clarify any uncertainty. When appraising and

extracting data from CPGs written in languages other than English, we will ask experienced reviewers who are fluent in the given language from acquaintances and affiliated centers around the world or use paid translation services. The data to be extracted will include:

- Guideline field and scope
- Year of publication
- Publishing region
- The version of the guideline
- Guideline language
- Developing organization
- System of rating evidence used in the guideline

Quality assessment

We will assess all eligible CPGs using the complete AGREE II tool to determine the quality of the guideline development process. Two reviewers will independently assess the CPGs using the AGREE II instrument and discuss any conflicts with a third senior reviewer. Then, they will have the opportunity to alter their scoring, if necessary. All review authors are trained in using AGREE II instrument. The junior methodologists will be supervised as needed.

AGREE II is a 23-item instrument divided into six domains: scope and purpose, stakeholder involvement, the rigor of development, clarity of presentation, applicability, and editorial independence. We will use the instrument to appraise each identified CPG and score each item using a 7-point Likert scale, ranging from strongly disagree (1) to strongly agree (7). In addition, an overall assessment score will be given to each CPG.

Data analysis and presentation

The extracted data will be analyzed and summarized in tabular and narrative form. We will provide a table with the characteristics of the identified relevant CPGs and the system used for grading the evidence and recommendations. We will narratively summarize the features of the grading systems used, the rationale behind them, and how they may have influenced the overall quality of the respective CPGs.

We will report and analyze the rigor of development as depicted by the scores of the AGREE II tool, specifically, the sums of scores of each item for each of the six domains from each reviewer, and the percentage of the total scaled from the number. We will use the same approach to assess the overall score.

We will determine the guideline quality based on the scaled domain scores. We will calculate the inter-rater reliability (via the intraclass correlation coefficient (ICC)) for each domain to determine the reviewer agreement.

The planned start date of the review is January 2022, and we aim to finish by the end of 2022. We will report the results of this systematic review using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis statement.[20] We will report and explain any changes in the methods described in this protocol. We used the PRISMA-P checklist when

writing our report.[21] We fully intend to publish all results of the proposed systematic review in a scholarly open-access journal.

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Footnotes

Contributions: Conceptualization, MK and LK; Methodology, MK, LK, SS, TN; Validation, MK; Writing – Original Draft Preparation, LK, PB, JB; Writing – Review & Editing, PB, JB, TN, SS, MK, JK; Supervision, MK; Funding Acquisition, LK; Search strategy, SS.

Competing interests: The authors declare no financial conflict of interest. JK is a director of Center of Evidence-Based Education & Arts Therapies, Faculty of Education, Palacky University, MK and LK are director and acting deputy director of the Czech National Centre for Evidence-Based Healthcare and Knowledge Translation. LK, MK (head methodologist), PB, JB, SS and TN are involved in a Czech national project for the development of clinical practice guidelines as methodologists.

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Patient consent for publication: Not required.

Provenance and peer review: Not commissioned; externally peer reviewed.

Reporting checklist for protocol of a systematic review and meta analysis.

Based on the PRISMA-P guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

Upload your completed checklist as an extra file when you submit to a journal.

In your methods section, say that you used the PRISMA-Preporting guidelines, and cite them as:

Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart LA. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 statement. Syst Rev. 2015;4(1):1.

		Reporting Item	Page Number
Title			
Identification	#1a	Identify the report as a protocol of a systematic review	1
Update	#1b	If the protocol is for an update of a previous systematic review, identify as such	n/a
Registration			
	#2	If registered, provide the name of the registry (such as PROSPERO) and registration number	n/a
Authors			
Contact	#3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contribution	#3b	Describe contributions of protocol authors and identify the guarantor of the review	1

Amendments			
	#4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	6
Support			
Sources	#5a	Indicate sources of financial or other support for the review	7
Sponsor	#5b	Provide name for the review funder and / or sponsor	7
Role of sponsor or funder	#5c	Describe roles of funder(s), sponsor(s), and / or institution(s), if any, in developing the protocol	7
Introduction			
Rationale	#6	Describe the rationale for the review in the context of what is already known	2
Objectives	#7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	4
Methods			
Eligibility criteria	#8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	4
Information sources	#9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	4-5
Search strategy	#10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	5
Study records - data management	#11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	n/a
Study records - selection process	#11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	5
Study records - data	#11c	Describe planned method of extracting data from reports (such as	5

collection process		piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	
Data items	#12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	5
Outcomes and prioritization	#13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	n/a
Risk of bias in individual studies	#14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	5
Data synthesis	#15a	Describe criteria under which study data will be quantitatively synthesised	5-6
Data synthesis	#15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I2, Kendall's τ)	n/a
Data synthesis	#15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	n/a
Data synthesis	#15d	If quantitative synthesis is not appropriate, describe the type of summary planned	6
Meta-bias(es)	#16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	n/a
Confidence in cumulative evidence	#17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	n/a