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Systematic Reviews in Health Research Part 2: Use of the PRISMA Reporting Guideline to Map an Example in Primary Care

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Jennifer Salerno

February 22nd,2022

Michael G. DeGroote SCHOOL OF MEDICINE

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Systematic Reviews in Health Research Part 2: Use of the PRISMA Reporting Guideline to Map an Example in Primary Care

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Objectives

- Brief overview of systematic reviews and their purpose
- Introduce the PRISMA 2020 reporting guideline and highlight its applicability
- Demonstrate how the PRISMA reporting guideline can support the planning and development of a systematic review using an example in primary care

‘What’ and ‘Why’ of Systematic Reviews

- ✓ Simple terms: synthesis and summary of information using a structured and rigorous approach
  - e.g., involves a focused question using the PICO framework
  - P: population / I: intervention / C: comparator / O: outcome
- ✓ Used to inform future research priorities, identify research gaps, examine conflicting evidence
- ✓ Generate new knowledge for research and practice
- ✓ Used to respond to relevant clinical and policy questions efficiently

Several Variations on the PICO Framework

- Different review types that use a structured or 'systematic' approach
- Differ based on the type of questions asked and evidence used

Munn et al. What kind of systematic review should I conduct? A proposed typology and guidance for systematic reviewers in the medical and health sciences. BMC Medical Research in Methodology 2018:18:5.

Table 1 Types of reviews

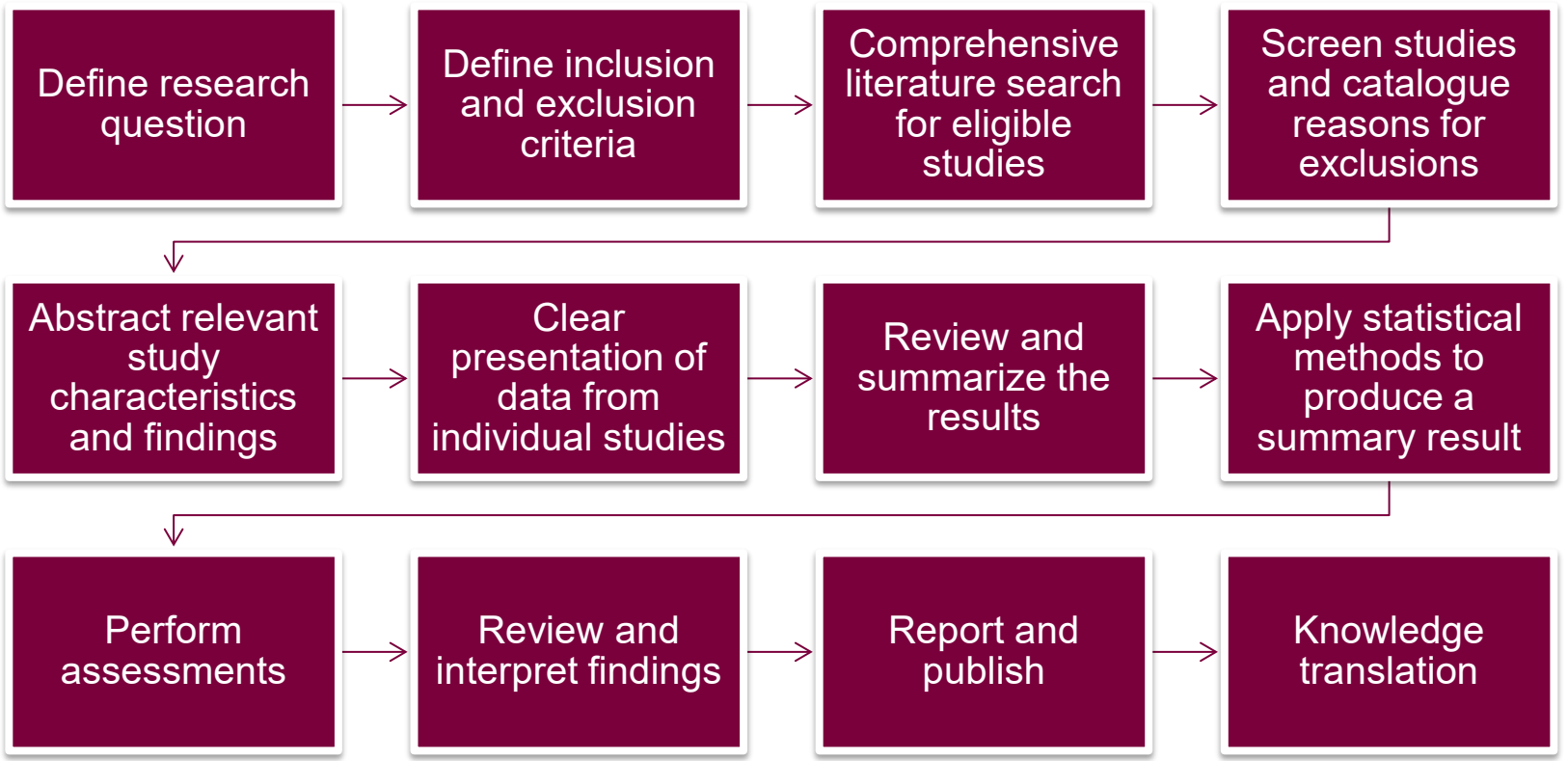
Review Type	Aim	Question Format	Question Example
Effectiveness	To evaluate the effectiveness of a certain treatment/practice in terms of its impact on outcomes	Population, Intervention, Comparator/s, Outcomes (PICO) [23]	What is the effectiveness of exercise for treating depression in adults compared to no treatment or a comparison treatment? [69]
Experiential (Qualitative)	To investigate the experience or meaningfulness of a particular phenomenon	Population, Phenomena of Interest, Context (PICo) [13]	What is the experience of undergoing high technology medical imaging (such as Magnetic Resonance Imaging) in adult patients in high income countries? [70]
Costs/Economic Evaluation	To determine the costs associated with a particular approach/treatment strategy, particularly in terms of cost effectiveness or benefit	Population, Intervention, Comparator/s, Outcomes, Context (PICOC) [14]	What is the cost effectiveness of self-monitoring of blood glucose in type 2 diabetes mellitus in high income countries? [71]
Prevalence and/or Incidence	To determine the prevalence and/or incidence of a certain condition	Condition, Context, Population (CoCoPop) [15]	What is the prevalence/incidence of claustrophobia and claustrophobic reactions in adult patients undergoing MRI? [72]
Diagnostic Test Accuracy	To determine how well a diagnostic test works in terms of its sensitivity and specificity for a particular diagnosis	Population, Index Test, Reference Test, Diagnosis of Interest (PIRD) [16]	What is the diagnostic test accuracy of nutritional tools (such as the Malnutrition Screening Tool) compared to the Patient Generated Subjective Global Assessment amongst patients with colorectal cancer to identify undernutrition? [73]
Etiology and/or Risk	To determine the association between particular exposures/risk factors and outcomes	Population, Exposure, Outcome (PEO) [17]	Are adults exposed to radon at risk for developing lung cancer? [74]
Expert opinion/policy	To review and synthesize current expert opinion, text or policy on a certain phenomena	Population, Intervention or Phenomena of Interest, Context (PICo) [18]	What are the policy strategies to reduce maternal mortality in pregnant and birthing women in Cambodia, Thailand, Malaysia and Sri Lanka? [75]
Psychometric	To evaluate the psychometric properties of a certain test, normally to determine how the reliability and validity of a particular test or assessment.	Construct of interest or the name of the measurement instrument(s), Population, Type of measurement instrument, Measurement properties [31, 32]	What is the reliability, validity, responsiveness and interpretability of methods (manual muscle testing, isokinetic dynamometry, hand held dynamometry) to assess muscle strength in adults? [76]
Prognostic	To determine the overall prognosis for a condition, the link between specific prognostic factors and an outcome and/or prognostic/prediction models and prognostic tests.	Population, Prognostic Factors (or models of interest), Outcome (PFO) [20, 34–36]	In adults with low back pain, what is the association between individual recovery expectations and disability outcomes? [77]
Methodology	To examine and investigate current research methods and potentially their impact on research quality.	Types of Studies, Types of Data, Types of Methods, Outcomes [39] (SDMO)	What is the effect of masked (blind) peer review for quantitative studies in terms of the study quality as reported in published reports? (question modified from Jefferson 2007) [40]

In 'What' Way is a Review……*Systematic?*

- Follows a pre-specified process
  - Tells others '*what was done*'
- Clearly articulated, promotes transparency
- Fosters reproducibility, others can replicate
- Provides a framework to assess trustworthiness and applicability of findings
  - Tells others '*what was found*'
- Complete, comprehensive, robust

Defining Features of a Systematic Review

- Summary of the key components of a systematic review
- Illustrates the structured process of conducting a systematic review



‘Why’ Do We Need a Systematic Approach?

Minimize bias!

PRISMA

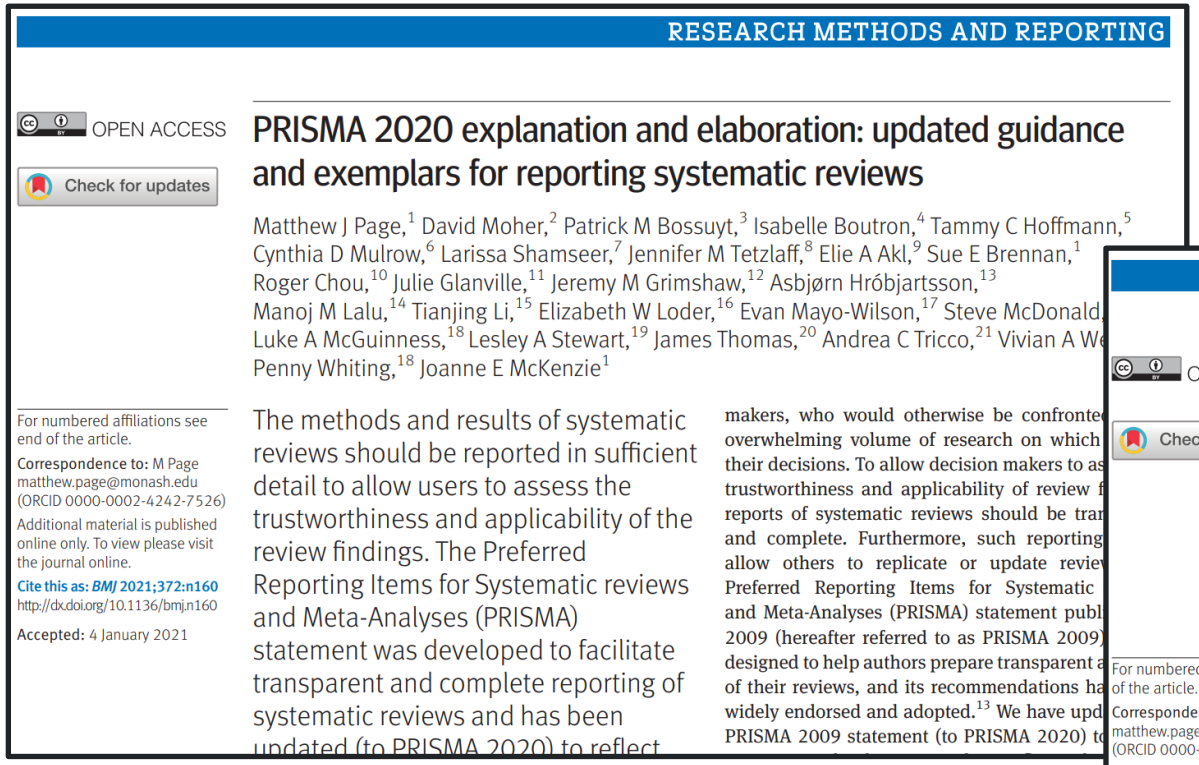
PRISMA
TRANSPARENT REPORTING of SYSTEMATIC REVIEWS and META-ANALYSES

- **P**referred **R**eporting **I**tems for **S**ystematic Reviews and **M**eta-**A**nalyses
- Available at: http://www.prisma-statement.org/
- Aim: to ensure that all relevant information ‘is’ or ‘will be’ reported in a systematic review
- Outlines a minimum set of reporting items
- Audience: authors (e.g., researchers, students, clinicians) and reviewers (e.g., editors, grant panels, policy makers, decision-makers)

PRISMA

- ✓ Primarily used for reviews on the effects of health interventions
- ✓ All study types, regardless of synthesis type
- ✓ Original systematic reviews, updated systematic reviews, ongoing or 'living' systematic reviews
- ✓ How to use the reporting guideline:
  - Use PRISMA 2020 as the foundation, *plus*
  - PRISMA extensions, *plus*
  - Additional guidance (*as needed*)

PRISMA Suite



RESEARCH METHODS AND REPORTING

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Check for updates

PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews

Matthew J Page,[1] David Moher,[2] Patrick M Bossuyt,[3] Isabelle Boutron,[4] Tammy C Hoffmann,[5] Cynthia D Mulrow,[6] Larissa Shamseer,[7] Jennifer M Tetzlaff,[8] Elie A Akl,[9] Sue E Brennan,[1] Roger Chou,[10] Julie Glanville,[11] Jeremy M Grimshaw,[12] Asbjørn Hróbjartsson,[13] Manoj M Lalu,[14] Tianjing Li,[15] Elizabeth W Loder,[16] Evan Mayo-Wilson,[17] Steve McDonald, Luke A McGuinness,[18] Lesley A Stewart,[19] James Thomas,[20] Andrea C Tricco,[21] Vivian A We Penny Whiting,[18] Joanne E McKenzie[1]

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Additional material is published online only. To view please visit the journal online.

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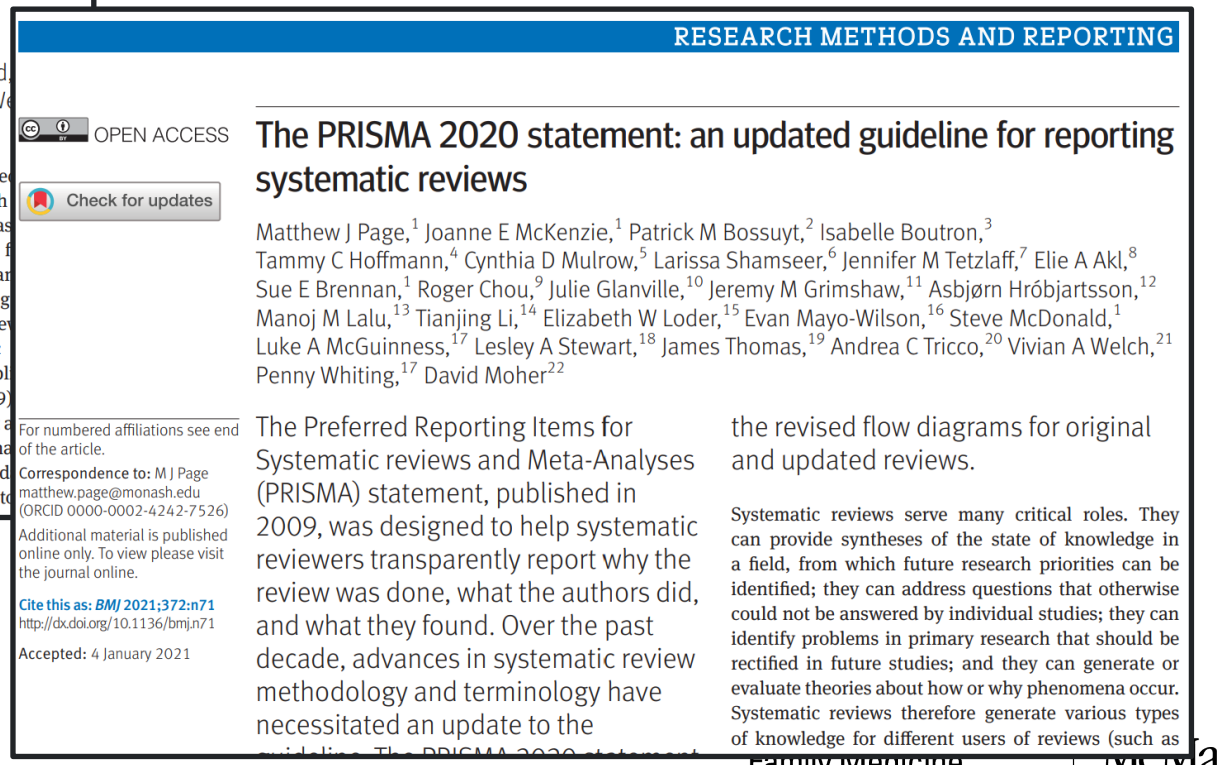
Accepted: 4 January 2021

The methods and results of systematic reviews should be reported in sufficient detail to allow users to assess the trustworthiness and applicability of the review findings. The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement was developed to facilitate transparent and complete reporting of systematic reviews and has been updated (to PRISMA 2020) to reflect

makers, who would otherwise be confronte overwhelming volume of research on which their decisions. To allow decision makers to as trustworthiness and applicability of review f reports of systematic reviews should be tra and complete. Furthermore, such reporting allow others to replicate or update revie Preferred Reporting Items for Systematic and Meta-Analyses (PRISMA) statement publ 2009 (hereafter referred to as PRISMA 2009) designed to help authors prepare transparent a of their reviews, and its recommendations ha widely endorsed and adopted.[13] We have upd PRISMA 2009 statement (to PRISMA 2020) t



RESEARCH METHODS AND REPORTING

OPEN ACCESS

Check for updates

The PRISMA 2020 statement: an updated guideline for reporting systematic reviews

Matthew J Page,[1] Joanne E McKenzie,[1] Patrick M Bossuyt,[2] Isabelle Boutron,[3] Tammy C Hoffmann,[4] Cynthia D Mulrow,[5] Larissa Shamseer,[6] Jennifer M Tetzlaff,[7] Elie A Akl,[8] Sue E Brennan,[1] Roger Chou,[9] Julie Glanville,[10] Jeremy M Grimshaw,[11] Asbjørn Hróbjartsson,[12] Manoj M Lalu,[13] Tianjing Li,[14] Elizabeth W Loder,[15] Evan Mayo-Wilson,[16] Steve McDonald,[1] Luke A McGuinness,[17] Lesley A Stewart,[18] James Thomas,[19] Andrea C Tricco,[20] Vivian A Welch,[21] Penny Whiting,[17] David Moher[22]

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Accepted: 4 January 2021

The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement, published in 2009, was designed to help systematic reviewers transparently report why the review was done, what the authors did, and what they found. Over the past decade, advances in systematic review methodology and terminology have necessitated an update to the guideline. The PRISMA 2020 statement

the revised flow diagrams for original and updated reviews.

Systematic reviews serve many critical roles. They can provide syntheses of the state of knowledge in a field, from which future research priorities can be identified; they can address questions that otherwise could not be answered by individual studies; they can identify problems in primary research that should be rectified in future studies; and they can generate or evaluate theories about how or why phenomena occur. Systematic reviews therefore generate various types of knowledge for different users of reviews (such as

Website: http://www.prisma-statement.org/

PRISMA 27-Item Checklist (http://www.prisma-statement.org/)

TITLE		
Title	1	Identify the report as a systematic review.
ABSTRACT		
Abstract	2	See the PRISMA 2020 for Abstracts checklist.
INTRODUCTION		
Rationale	3	Describe the rationale for the review in the context of existing knowledge.
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.
METHODS		
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.
Information ources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.

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PRISMA 27-Item Checklist (http://www.prisma-statement.org/)

RESULTS		
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.
Study characteristics	17	Cite each included study and present its characteristics.
Risk of bias in studies	18	Present assessments of risk of bias for each included study.
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.
	20c	Present results of all investigations of possible causes of heterogeneity among study results.
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.
DISCUSSION		
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.
	23b	Discuss any limitations of the evidence included in the review.
	23c	Discuss any limitations of the review processes used.
	23d	Discuss implications of the results for practice, policy, and future research.
OTHER INFORMATION		
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.
	24c	Describe and explain any amendments to information provided at registration or in the protocol.
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.
Competing interests	26	Declare any competing interests of review authors.
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.

Primary Care Example

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- Demonstrate the usefulness of the PRISMA reporting guideline and checklist in the planning and development of a systematic review
  - Example on virtual care: DFM Pilot Project, PI: K Bracken
- Map the PRISMA reporting recommendations #1 to #15 to the example
  - E.g., link the PRISMA checklist items to the project proposal
- Further elaboration, interactive (*Q&A with you!), and take questions along the way…

Item: Identify the report as a systematic review

Question: How did the authors identify the proposal?

Title: Virtual care for the treatment and management of common medical conditions in children and adults: A systematic review

Item: Describe the rationale for the review in the context of existing knowledge

*__Question:__ What is the author's rationale for the review?

Background / rationale:

The emergence of COVID-19 and limitations to face-to-face encounters for healthcare treatment and management have led to the sudden implementation of care provision by virtual means. All medical specialties from primary care through to subspeciality medicine have been in some way impacted by pandemic imposed in person care limitations which has resulted in novel virtual care models seemingly overnight. Given the duration of the pandemic and visioning of a more hybrid model of health care delivery than existed pre-pandemic, there is an urgent need to inform and improve virtual care processes and the planning of health care delivery [1].

Before adopting virtual care provision as part of the bedrock of the Canadian Health Care System, evidence on the clinical effectiveness across broader clinical health service areas to ensure that patient outcomes are not adversely affected [6] and to assess if there are putative improvements to health system efficiencies such as access to care and integration of care services is needed [7].

Item: Provide an explicit statement of the objectives or question using the PICO framework

***Question:** What are the PICO question elements in the virtual care example?

Question:
What is the effectiveness of virtual care compared to in-person care on patient outcomes and health system efficiencies in the treatment and management of common conditions seen in generalist areas of medicine in children and adults?

Item: Specify the inclusion and exclusion criteria (e.g., study characteristics according to the PICO)

***Question:** What are the study characteristics defining the *inclusion criteria* in the virtual care example?

Inclusion Criteria:

- Studies published between Jan 1, 2019 and 2022 (date of last search).
- Studies that report on the clinical effectiveness of virtual care.
- Virtual care delivered using a communication technology (e.g., phone, internet, teleconferencing) synchronously or asynchronously to a patient at a location distant from the provider.
- Team based models of care where the physician leads the virtual encounter.
- Disciplines providing virtual care to adults and children including psychiatry, mental health, general internal medicine, primary care, family medicine including obstetrics for the treatment of conditions commonly managed by generalists and primary care physicians.
- Comparative studies of any type: randomized controlled trials and observational studies; also systematic reviews and meta-analysis.
- Studies that report at least one outcome of interest.

Item: Specify all information sources used to identify studies (e.g., databases, reference lists) and present the search strategies in full including any filters or limits used

Question: What are the *information sources* to be used?

Search Strategy:
Potentially relevant studies will be identified between the years of 2019-2022 by performing a systematic literature search in the following OVID databases supported by McMaster: MEDLINE, Embase, Emcare, and PsycInfo. The search years were selected to include contemporary studies, relevant technologies and virtual care practices at the onset of the COVID-19 pandemic and studies which were conducted during the pandemic and recently published. The search terms will be developed after careful review of the literature for relevant terms and in consultation with McMaster Library Services. A literature search update will be performed after 9 months since the last search date in line with best practices of 6-12 months [9].

Item: Specify the methods used to decide whether a study met the inclusion criteria of the review: how many reviewers screened each title and abstract / each full-text retrieved, did they worked independently, how will disagreements be handled

***Question:** What is the author's plan for study selection?

Study Selection:
Potential studies for inclusion will be screened based on title and abstract using Covidence by two independent reviewers. Disagreements in the screening stage will be resolved by discussion among reviewers and a third review by the PI will be performed for any persistent disagreements. Selection of full text articles for potential study inclusion will be assessed by two independent reviewers and reasons for exclusions will be documented using a custom form. Disagreements at this stage will be resolved in a similar fashion, noted above. Reference lists of included studies will also be reviewed for potential studies for inclusion. The number of citations identified, exclusions and reasons, number of studies included in the review will be presented using a flow diagram. A separate table of excluded studies and their reasons will be provided.

AMSTAR 2

- **A** **M**ea**S**urement **T**ool to **A**ssess systematic **R**eviews
- Available: https://amstar.ca

RESEARCH METHODS AND REPORTING

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AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both

Beverley J Shea,[1,2,3] Barnaby C Reeves,[4] George Wells,[3,5] Micere Thuku1,[2] Candyce Hamel,[1] Julian Moran,[6] David Moher,[1,3] Peter Tugwell1,[2,3,7] Vivian Welch,[2,3] Elizabeth Kristjansson,[8] David A Henry[9,10,11]

5. Did the review authors perform study selection in duplicate?

For Yes, either ONE of the following:

- at least two reviewers independently agreed on selection of eligible studies and achieved consensus on which studies to include
- OR two reviewers selected a sample of eligible studies and achieved good agreement (at least 80 percent), with the remainder selected by one reviewer.

Item: Specify the methods of data collection including how many reviewers performed data collection, did they work independently, how will disagreements be handled, and any processes for obtaining/confirming data

Question: What is the author's plan for data collection?

Data Collection:

Data from full-text articles meeting the inclusion criteria will be collected by two independent reviewers using a standardized data abstraction form. Disagreements on which data to extract will be resolved as described above. Pre-testing of the data abstraction form for inter-rater reliability will occur prior to implementation on a sample of papers included in the systematic review. Feedback and refinements to the abstraction form will take place to achieve uniformity.

AMSTAR 2

- **A MeaSurement Tool to Assess systematic Reviews**
- Available: https://amstar.ca

RESEARCH METHODS AND REPORTING

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AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both

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6. Did the review authors perform data extraction in duplicate?

For Yes, either ONE of the following:

- at least two reviewers achieved consensus on which data to extract from included studies
- OR two reviewers extracted data from a sample of eligible studies and achieved good agreement (at least 80 percent), with the remainder extracted by one reviewer.

Item: List and define all outcome domains and specify any processes to handle multiple results/measures, and list and define other variables for which information will be sought

Question: What are the *outcomes of interest* in this virtual care example?

Outcomes:

- Patient outcomes
  - Morbidity and mortality (including any delay in establishing a diagnosis leading to significant morbidity or death)
  - Symptom management (e.g., in depression and anxiety, respiratory exacerbations)
  - Condition management (e.g., hypertension, pregnancy)
  - Medication management
  - Health-related quality of life (e.g., use of specific tools such as SF-36)
- Patient and provider satisfaction (including access to care, use of technology)
- Healthcare utilization (access to and type of provider, continuity of care, comprehensiveness, integration of care, hospitalizations)
- Person-centred care

Item: Specify the methods used to assess risk of bias in the included studies, including details of the tools used

Question: What is the author's plan for risk of bias assessments?

Study Assessment:
Individual studies will be assessed for risk of bias according to standardized tools: ROB version 2 for RCTs [10], ROBINS-I for observational studies [11], and AMSTAR 2 for systematic reviews [12]. Two reviewers will independently perform the risk of bias assessment and any disagreements will be resolved according to the process outlined above.

ROB: Cochrane risk of bias for randomized trials.
ROBINS-I: Risk of bias in non-randomized studies – of interventions.
AMSTAR 2: A measurement tool to assess systematic reviews.

RoB 2: Risk of Bias Tool

- Randomized trials
- Bias vs. study quality
- ➢ **Study design, conduct, analysis**
- Framework for assessing the risk of bias across 5 bias domains:
- ➢ **Specific outcome**
- ➢ **Single study**
- ➢ **Single result**
- Advantages over other critical appraisal tools

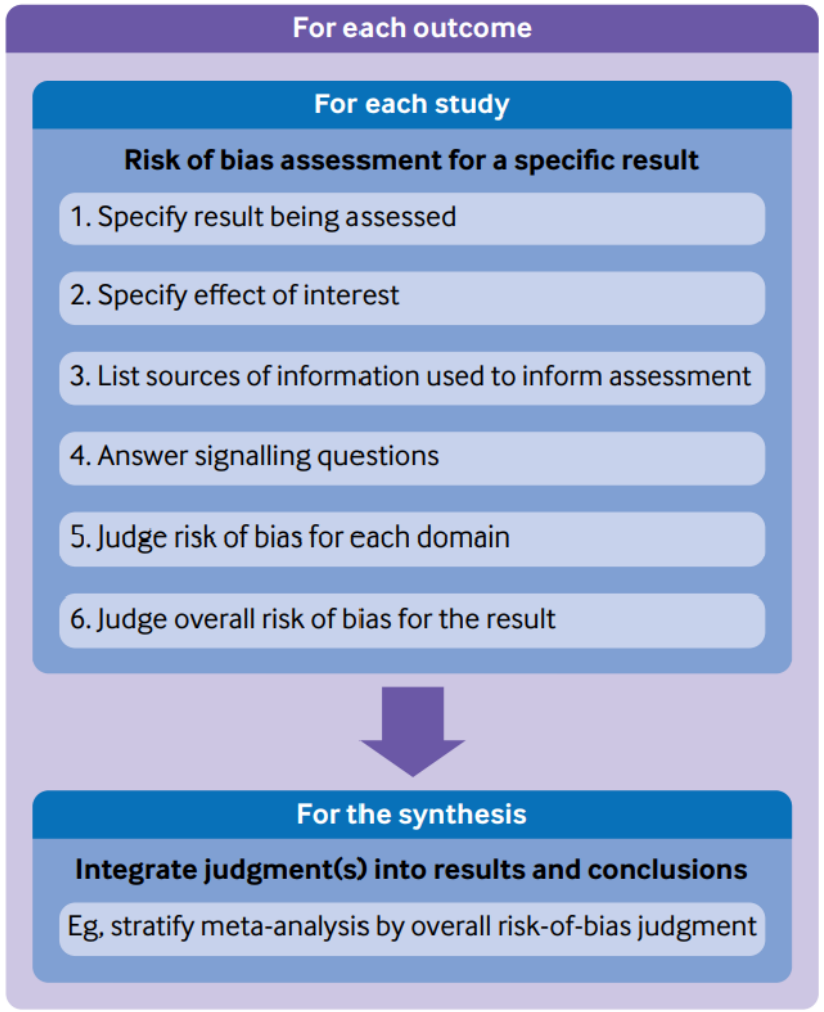

Fig 1 | Summary of the process of assessing risk of bias in a systematic review of randomised trials, using version 2 of the Cochrane risk-of-bias tool

Sterne et al. RoB 2: a revised tool for assessing risk of bias in randomized trials. BMJ 2019:366(14898):1-8.

Item: Specify for each outcome the effect measure used in the synthesis (e.g., risk ratio, mean difference) or presentation of results

***Question:** What effect measures will be estimated?

Synthesis Methods:

For studies in which quantitative data on outcomes is provided and if two or more studies have similar study designs and methods, a meta-analysis will be performed [9]. For studies with binary outcomes, a fixed effects risk ratio will be calculated and for continuous outcomes, a mean difference as the summary estimate will be calculated using Review Manager v.5.4.1 software. Heterogeneity across studies combined in a meta-analysis will be examined using the I^2 statistic with values of ≥0.6 indicating moderate to substantial heterogeneity. Heterogeneity will be addressed in the analysis (i.e., subgroup analysis). For outcomes in which there is qualitative data only, a narrative table and qualitative descriptive synthesis of the data will be performed. Instances of missing data for key outcomes will be addressed by contacting the PI of the study to provide the missing data.

Item: Describe the synthesis methods: data preparation, data presentation, meta-analysis, how heterogeneity among study results will be assessed, and any planned sensitivity analysis

***Question:** What is the author's plan for data synthesis?

Synthesis Methods:

For studies in which quantitative data on outcomes is provided and if two or more studies have similar study designs and methods, a meta-analysis will be performed [9]. For studies with binary outcomes, a fixed effects risk ratio will be calculated and for continuous outcomes, a mean difference as the summary estimate will be calculated using Review Manager v.5.4.1 software. Heterogeneity across studies combined in a meta-analysis will be examined using the I^2 statistic with values of ≥0.6 indicating moderate to substantial heterogeneity. Heterogeneity will be addressed in the analysis (i.e., subgroup analysis). For outcomes in which there is qualitative data only, a narrative table and qualitative descriptive synthesis of the data will be performed. Instances of missing data for key outcomes will be addressed by contacting the PI of the study to provide the missing data.

Item: Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases)

- E.g., selective non-publication bias and selective non-reporting of results
- Addressed using the GRADE approach and ROB 2 tool

Item: Describe any methods used to assess certainty in the body of evidence for an outcome (e.g., specify the tool, factors considered)

Question: What is the author's plan for assessing the certainty in the body of evidence?

Certainty Assessment:
The body of evidence by outcome will be assessed according to the GRADE assessment for RCTs and observational studies in which the body of evidence is ranked as very low, low, moderate, or high based on the GRADE criteria [14]. The GRADEpro software will be used to create the GRADE tables [15].

GRADE: Grading of Recommendations, Assessment, Development and Evaluation.

Evaluating the Certainty of Evidence Using the GRADE Approach

Study design	Initial quality of a body of evidence	Lower if	Higher if	Quality of a body of evidence
Randomized trials	High ⇒	Risk of Bias −1 Serious −2 Very serious Inconsistency −1 Serious −2 Very serious Indirectness −1 Serious −2 Very serious Imprecision −1 Serious −2 Very serious Publication bias −1 Likely −2 Very likely	Large effect +1 Large +2 Very large Dose response +1 Evidence of a gradient All plausible residual confounding +1 Would reduce a demonstrated effect +1 Would suggest a spurious effect if no effect was observed	High (four plus: ⊕⊕⊕⊕) Moderate (three plus: ⊕⊕⊕◯) Low (two plus: ⊕⊕◯◯) Very low (one plus: ⊕◯◯◯)
Observational studies	Low ⇒			

Balshem et al. GRADE guidelines: 3. Rating the quality of evidence. J Clin Epidemiol 2011;64:401-6.

Summary

- Together, we mapped the PRISMA reporting recommendations to the example on virtual care
  - In the following sections:
    - **Title:** reporting recommendation #1
    - **Introduction:** reporting recommendations #3 to #4
    - **Methods:** reporting recommendations #5 to #15

Key Takeaways

- PRISMA 2020 reporting guideline and checklist can be used to inform systematic review planning and development
  - In addition to informing authors of journal submission reporting requirements
- Several of the steps are informed by additional tools, frameworks and guidance
- Systematic reviews are a unique and structured approach to synthesize and summarize information to create new knowledge and help inform health decision-making