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Identifying Indicators Sensitive to Primary Healthcare Nurse Practitioner Practice: A Review of Systematic Reviews Protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2020-043213
Article Type:	Protocol
Date Submitted by the Author:	27-Jul-2020
Complete List of Authors:	Kilpatrick, Kelley; McGill University, Ingram School of Nursing, Faculty of Medicine Tchouaket, Eric; Université du Québec en Outaouais - Sciences infirmières Chouinard, Maud-Christine; Université du Québec à Chicoutimi, Sciences de la santé Savard, Isabelle; Université du Québec en Outaouais - Sciences infirmières Bouabdillah, Naima; Université du Québec à Trois-Rivières - Sciences infirmières Houle, Julie; Université du Québec à Trois-Rivières - Sciences infirmières St-Louis, Geneviève; Centre intégré universitaire de santé et de services sociaux de la Mauricie-et-du-Centre-du-Québec, Support and Development of Professional Practices in Nursing and Assistance Care and Infection Prevention Associate Directorate Jabbour, Mira; Centre intégré universitaire de santé et de services sociaux de l'Est-de-l'Île-de-Montréal du Québec, Maisonneuve-Rosemont Hospital Site Atallah, Renee; McGill University Ingram School of Nursing
Keywords:	PRIMARY CARE, Quality in health care < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, STATISTICS & RESEARCH METHODS

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Identifying Indicators Sensitive to Primary Healthcare Nurse Practitioner Practice: A Review of Systematic Reviews Protocol

Kelley Kilpatrick, RN, PhD, Eric Tchouaket, PhD, Maud-Christine Chouinard, RN, PhD, Isabelle Savard, NP, MSc, Naima Bouabdillah, RN, PhD, Julie Houle, RN, PhD, Geneviève St-Louis, RN, Mira Jabbour, RD, MSc, Renée Atallah, MSc

Corresponding author:

Kelley Kilpatrick, RN, PhD
Associate Professor

Susan E. French Chair in Nursing Research and Innovative Practice, Ingram School of Nursing, Faculty of Medicine, McGill University, 680 Sherbrooke Street West, Office 1811, Montreal, Quebec, Canada, H3A 2M7

Tel.: 011-514-398-3416 Email: kelly.kilpatrick@mcgill.ca

Authors' full address:

Eric Tchouaket, PhD
Associate Professor

Department of Nursing, Université du Québec en Outaouais (UQO), St-Jérôme Campus
5 Saint-Joseph Street, Room J-3204, Saint-Jérôme, Québec, Canada, J7Z 0B7

Tel.: 011-450-530-7616, ext. 4039 Email : eric.tchouaket@uqo.ca

Maud-Christine Chouinard, RN, PhD,
Professor,

Université du Québec à Chicoutimi (UQAC), Département des sciences de la santé (Health Sciences Department),

Bureau V1-1065, 555, boulevard de l'Université, Chicoutimi, Québec, Canada G7H 2B1

Tel : 0-11-418 545-5011 ext.5344 Email : maud-christine_chouinard@uqac.ca

Isabelle Savard, PHCNP, MSc
Professor,

Department of Nursing, Université du Québec en Outaouais (UQO), St-Jérôme Campus
5 Saint-Joseph Street, Room J-3204, Saint-Jérôme, Québec, Canada, J7Z 0B7

Tel.: 011- 450 530-7616 , poste 4818 Email: isabelle.savard@uqo.ca

Naima Bouabdillah, RN, PhD,
Professor,

Department of Nursing, Université du Québec à Trois-Rivières

3351, boulevard des Forges, Room 4859, Trois-Rivières, Québec, Canada G9A 5H7

Tel: 1-819-3765011 ext. 3440 Email: Naima.Bouabdillah@uqtr.ca

Julie Houle, RN, PhD,
Professor,

Department of Nursing, Université du Québec à Trois-Rivières,

Scientific director of medical and clinical research at Centre intégré universitaire en santé et services sociaux de la Mauricie et du Centre du Québec (CIUSSS MCQ)

3351, boulevard des Forges, Room 4802, Trois-Rivières, Québec, Canada G9A 5H7

ABSTRACT

Introduction: Primary healthcare nurse practitioners (PHCNPs) practice in a wide range of clinical settings and with diverse patient populations. Several systematic reviews have examined outcomes of PHCNP roles. However, there is a lack of consistency in the definitions used for the PHCNP role across the reviews. The identification of indicators sensitive to PHCNP practice from the perspective of patients, providers and the healthcare system will allow researchers, clinicians and decision-makers to understand how these providers contribute to outcomes of care.

Methods and analysis: A review of systematic reviews is proposed to describe the current state of knowledge about indicators sensitive to PHCNP practice using recognized role definitions. Outcomes of interest include any outcome indicator measuring the effectiveness of PHCNPs. We will limit our search to 2010 onwards to capture the most up-to-date trends. The following electronic databases will be searched: AMED, CINAHL, Cochrane Library Database of Systematic Reviews and Controlled Trials Register, DARE, EMBASE, Global Health, HEED, HealthStar, Joanna Briggs Institute, Medline, Pubmed, and Web of Science. The search strategies will be reviewed by an academic librarian. Reference lists of all relevant reviews will be reviewed. Grey literature databases will be searched for the period of 2010 and onwards, and include: CADTH Information Services, Grey Matters, Organization for Economic Co-operation and Development, ProQuest Dissertation and Theses, and World Health Organization. The PROSPERO International Prospective Register of Systematic Reviews will be searched to identify registered review protocols. The review protocol was developed using PRISMA-P recommendations. A narrative synthesis will be used to summarize study findings.

Ethics and dissemination: No ethical approval is required for the study. The data used in the study will be abstracted from published systematic reviews. Dissemination strategies will include peer-reviewed publication, conference presentations, and presentations to key stakeholders.

PROSPERO registration number: Submitted (acknowledgement of receipt [198182])

Word count: 299/300

KEYWORDS: Indicators, nurse practitioner, primary healthcare, review of systematic reviews

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3	109	Article Summary
4	110	
5	111	Strengths and Limitations
6	112	
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8	113	• Inconsistent role definitions for nurse practitioner roles limits the generalizability of research
9	114	findings across countries. Our review of systematic reviews will help to bridge that knowledge
10	115	gap by including a recognized definition for nurse practitioner roles.
11	116	• There will be no language restrictions for studies included in the review of systematic reviews.
12	117	• No quantitative analyses are planned.
13	118	• Because the review focuses on studies that clearly define the nurse practitioner role, the
14	119	overview may exclude studies that examine nurse practitioner roles but did not provide clear
15	120	role definitions.
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BACKGROUND

Internationally, the primary healthcare nurse practitioner (PHCNP) role has been examined across countries and healthcare settings (e.g., long-term care, primary care, home care) to understand how PHCNPs provide care.¹⁻⁴ PHCNPs are nurses prepared at the graduate level with in-depth clinical expertise who provide primary healthcare services to different populations.⁵ Researchers (e.g., Donald et al., 2014; Martin-Misener et al., 2015; Newhouse et al., 2011; Swan et al., 2015)⁶⁻⁹ have conducted several systematic reviews of PHCNP roles to understand their contributions to patient care. Laurant and colleagues (2009) completed a review of systematic reviews of the effectiveness of nonphysician clinicians including PHCNPs.¹⁰ These researchers identified 18 systematic reviews but noted that an “exact description of the nurses’ roles was lacking in the majority of reviews”.^{10, p. 445} In 2014, Kilpatrick et al. conducted a review of reviews to examine the impact of graduate-prepared nurses (nurse practitioners and clinical nurse specialists) regardless of their clinical practice setting.¹¹ This review of reviews identified four systematic reviews examining 24 outcomes across reviews including 18 patient, one provider and five healthcare system outcomes for the two advanced practice nursing roles in acute and primary care.¹¹ Globally, PHCNP roles are expanding into new areas of practice. An important gap remains in identifying indicators that document the contributions of PHCNPs across settings. Thus, to understand PHCNP contributions to patient care and synthesize the available evidence, we propose to build on previous research by conducting a review of systematic reviews of studies that incorporates a recognized PHCNP role definition to identify indicators sensitive to PHCNP practice. These findings will inform the evaluation of PHCNP practice. Our research question is: What indicators are sensitive to the practice of primary healthcare nurse practitioners (PHCNPs) from the patient, provider and health system perspectives?

In this paper, we propose to outline the methodology used in the review of systematic reviews. We aim to evaluate and synthesize systematic reviews to identify outcome indicators sensitive to the practice of PHCNPs from the patient, provider and health system perspectives. More specifically,

Objective 1: To assess the quality of systematic reviews of the impact of PHCNP practice from the patient, provider and health system perspectives.

Objective 2: To identify indicators sensitive to the practice of PHCNPs from the patient, provider and health system perspectives.

METHODS

We will conduct an overview of systematic reviews to describe the current state of knowledge about indicators sensitive to PHCNP practice from the patient, provider and health system perspectives.¹² The review protocol was developed using PRISMA-P recommendations of Shamseer et al. (2015).¹³

Inclusion Criteria

Types of Studies

All relevant published and unpublished systematic reviews that were reported from 2010 and onwards with no restrictions on jurisdiction or language. To be identified as a systematic review, the authors need to identify a specific research question or provide sufficient information so the reviewer can identify all the components of a research question (i.e., PICOS) related to indicators

professional (e.g., physicians), best care, or adherence to clinical practice guideline. Data extractors will extract a brief description of the control group.

Types of Outcomes

Outcomes of interest in this review of reviews include any outcome indicator that measures the effectiveness of PHCNPs. These measures include patient (e.g., health status, quality of life, patient satisfaction) or provider (e.g., quality of care, job satisfaction) or health system (e.g., length of hospital stay, rehospitalisation, resource use, costs) outcomes. We will extract data related to effect sizes, and include the actual effect size (i.e., odds ratio, relative risk, mean differences), confidence intervals, level of statistical significance, and the number of studies included in the analysis.¹⁰

Exclusion Criteria

Reviews that were developed to address broad research questions (e.g., literature reviews, scoping reviews, integrative reviews) will be excluded.

Nurse midwives will be excluded from the review of reviews because the regulatory requirements in different countries do not all require these roles to be filled by nurses, and nurse midwife roles are not consistently identified as advanced practice nursing roles across countries.

Reviews will be excluded if PHCNP impact cannot be isolated and is not reported separately from other types of nurses or team members. A list of all excluded reviews will be developed specifying reasons for exclusion.

Database Search

Evidence in approximately half of published reviews is outdated after five years.¹⁸ Thus, we will limit our search to 2010 onwards to capture the most up-to-date trends. The following electronic databases will be searched: Allied and Complementary Database (AMED), CINAHL, Cochrane Library Database of Systematic Reviews and Controlled Trials Register, Database of Abstracts of Reviews of Effects (DARE), EMBASE, Global Health, Health Economics Evaluation Database (HEED), HealthStar, Joanna Briggs Institute, Medline, Pubmed, and Web of Science. The preliminary search strategies to be used for each electronic database are included in Appendix 1. These strategies will be reviewed by an academic librarian. In addition, the reference lists of all relevant reviews will be reviewed.

The grey literature databases will be searched for the period of 2010 and onwards, and will include: CADTH Information Services, Grey Matters, Organization for Economic Co-operation and Development (OECD), ProQuest Dissertation and Theses, and World Health Organization (Appendix 2). The PROSPERO International Prospective Register of Systematic Reviews will be searched to identify registered review protocols. Authors of registered PROSPERO reviews will be contacted to ascertain the status of study. For each website, the content will be searched using the same search terms as those used for the published literature. If there is not an inherent search function on the website, a search will be conducted of all webpages and weblinks. The preliminary search strategy for the unpublished literature is included in Appendix 2.

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Study Selection

All reviewers will be trained to use the screening instrument and the inclusion/exclusion criteria. The retained studies will be uploaded into EndNote and the RAYYAN software.¹⁹ Duplicates will be removed. Two reviewers will independently screen titles and abstracts using the predefined inclusion and exclusion criteria and recommend exclusion or further full text review. Any discrepancies will be discussed among the reviewers. If there is insufficient information in the abstract or no abstract is available, a full text review will be completed. Any coding discrepancies will be discussed between the reviewers until agreement is reached on the inclusion or exclusion of the review. A third reviewer will act as a tie-breaker if the first reviewers do not come to a consensus. A full text review will be completed for all the reviews included after the initial screening again using the predefined inclusion and exclusion criteria.

Data Extraction

For those full text papers that pass inclusion criteria, the data will be extracted by one coder and reviewed by a second coder. A structured tool will be developed for the study and pilot-tested by the investigators.²⁰ We will extract data from the methods and results section. The extracted data will include aim or focus of the review; review characteristics (e.g., year); number and name of electronic databases searched; characteristics of the participants and intervention (i.e. complementary, alternative, transition or mixed roles); number and types of studies included in the review; specification of patient, provider and health system outcomes and how the outcomes are measured; and funding source.²¹ The results of the meta-analyses, if conducted, will be included in the data extraction. If the data are not available in the review they will be identified as ‘unknown’ in the data extraction form.

Assessment of Review Quality

Each review will be graded using the AMSTAR 2 criteria to assess its methodologic quality. Two reviewers will independently rate each review using the AMSTAR 2 criteria.²² Inter-rater agreement will be estimated using the kappa statistic.²³ Any disagreements will be discussed among the reviewers until consensus is reached. A summary table with the AMSTAR ratings will be generated.

Outcomes

The primary outcomes of the review of reviews are those that assess patient, provider and health system outcomes directly evaluating PHCNP roles.

These will be examined separately for type of PHCNP role (i.e., complementary, alternative, transition, mixed).

Data Synthesis

Narrative synthesis will be used to summarize the findings. An iterative process will be used to identify patterns and relationships across reviews and across years that the reviews were conducted.²⁴ Summary tables will be developed to outline the key characteristics of the reviews (e.g., year of publication, countries where primary studies were conducted), outcomes (i.e., patient, provider, health system), level of role substitution (i.e., complementary, alternative, transition, mixed), quality assessment, and findings

(positive, negative, nul). A record will be kept of all review-related decisions. No quantitative analyses are planned because of the potential overlap in studies included in the different reviews.¹²

Anticipated Contributions

PHCNPs practice in a wide range of setting and with diverse patient populations, including vulnerable populations.²⁵ The identification of indicators sensitive to the practice of PHCNPs from the perspective of patients, providers and the healthcare system will allow researchers, clinicians and decision-makers to understand how these providers contribute to outcomes of care. Gaining an understanding of the patient perspective is particularly important in the context of patient centered care and adapting services to the needs of vulnerable populations (e.g., residents in long-term care, patients with mental health conditions or low socio-economic status). Once identified, PHCNPs, other clinicians and decision-makers can track these indicators and determine if PHCNP roles are used optimally to respond to patient care needs. Using these indicators, subsequent research can be undertaken to support more rigorous economic evaluations of these roles, an important gap in the current literature.^{26 27}

Acknowledgements

This study was funded by the Le Réseau intersectoriel de recherche en santé de l'Université du Québec (RISUQ) (Project Grant Number 304168 (30416801); Principal investigator: ET). KK and ET are supported by the Fonds de recherche du Québec-Santé (Research Scholar Junior 2 [KK] and Junior 1 [ET] salary awards.

Contributors

KK, ET, MCC, IF, NB, JH, GSL, MJ, RA made substantial contributions to study conception and design. All authors were involved in drafting the manuscript, and making revisions for critical intellectual content. All authors gave final approval of the version to be published.

Funding

Le Réseau intersectoriel de recherche en santé de l'Université du Québec (RISUQ) (Project Grant Number: 304168 (30416801); Principal investigator: ET). The funder played no role in: study design and interpretation; development of the manuscript.

Competing interests

We declare no competing interests.

Patient and public involvement

Not applicable.

Ethical approval

Not applicable: Data extracted from published articles.

Data sharing

Datasets used and analyzed in the present study are available from corresponding author Kelley Kilpatrick upon reasonable request.

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Appendix 1: Preliminary search strategies for published literature.

Title: Identifying Indicators Sensitive to Primary Healthcare Nurse Practitioner Practice: A Review of Systematic Reviews

Question: What indicators are sensitive to the practice of primary healthcare nurse practitioners (PHCNPs) from the patient, provider and health system perspectives?

Aim: To evaluate and synthesize systematic reviews to identify outcome indicators sensitive to the practice of primary PHCNPs from the patient, provider and health system perspectives.

Search Strategy:

P: Patients of any age, groups or communities receiving PHCNP care in all types (e.g., teaching and non-teaching, public and private), sizes (e.g., small, medium, large) and locations (e.g., rural and urban) of community or care agencies (e.g., long-term care, primary care practices, home care).
= Search strategy concept 1: Primary Care

I: Care provided by PHCNPs in all sectors.
= Search strategy concept 2: Advanced Practice Nursing.

C: Data related to the comparator (i.e., control) group will be extracted to describe the group to which care is compared. Comparator groups can include usual care, care provided by another health care professional (e.g., physicians), best care, or adherence to clinical practice guideline.

O: Any outcome indicator that measures the effectiveness of PHCNPs. These measures include patient (e.g., health status, quality of life, patient satisfaction) or provider (e.g., quality of care, job satisfaction) or health system (e.g., length of hospital stay, rehospitalisation, resource use, costs) outcomes.
= Search strategy concept 3: Outcomes, comprised of 6 sub-concepts: 1) Quality/ Best practice; 2) Promotion; 3) Prevention; 4) Indicators; 5) Access; 6) Equity.

S: All relevant published and unpublished systematic reviews that were reported from 2010 and onwards with no restrictions on jurisdiction or language.
= Search strategy concept 4. NB: This component of the search strategy is based part of the CADTH hedge for systematic reviews and meta-analyses (<https://www.cadth.ca/resources/finding-evidence/strings-attached-cadths-database-search-filters#syst>) combined with the hedge developed by Lunny C. et al. for overviews of reviews (Journal of Clinical Epidemiology 2016; 74: 107-118).

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37 "Homes for the Aged"[MH] OR
38 "Housing for the Elderly"[MH] OR
39 "Long-Term Care"[MH] OR
40 "Respite Care"[MH] OR
41 "Nursing"[MH] OR
42 "Nursing, Team"[MH] OR
43 "Nursing Care"[MH] OR
44 "Patient Care Team"[MH] OR
45 "Health Personnel"[MH] OR
46 "Professional Practice"[MH] OR
47 "Professional Autonomy"[MH] OR
48 "Primary healthcare"[tiab] OR
49 "Primary health care"[tiab] OR
50 "Primary health-care"[tiab] OR
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"Primary care"[tiab] OR
"Primary care nursing"[tiab] OR
"Primary care nurse"[tiab] OR
"Primary care nurses"[tiab] OR
"Primary care physician"[tiab] OR
"Primary care physicians"[tiab] OR
"Primary care doctor"[tiab] OR
"Primary care doctors"[tiab] OR
"Primary care service"[tiab] OR
"Primary care services"[tiab] OR
"Primary care clinic"[tiab] OR
"Primary care clinics"[tiab] OR
"Primary care facility"[tiab] OR
"Primary care facilities"[tiab] OR
"Primary care practice"[tiab] OR
"Primary care practices"[tiab] OR
"Primary care program"[tiab] OR
"Primary care programs"[tiab] OR
"Family physician"[tiab] OR
"Family physicians"[tiab] OR
"Family doctor"[tiab] OR
"Family doctors"[tiab] OR
"Family medicine"[tiab] OR
"Family practice"[tiab] OR
"Family practices"[tiab] OR
"Family clinic"[tiab] OR
"Family clinics"[tiab] OR
"general practice"[tiab] OR
"general practices"[tiab] OR
"general practitioner"[tiab] OR
"general practitioners"[tiab] OR
"General practice clinic"[tiab] OR
"General practice clinics"[tiab] OR
"General practice program"[tiab] OR
"General practice programs"[tiab] OR
"General practice doctor"[tiab] OR
"General practice doctors"[tiab] OR
"General practice nursing"[tiab] OR
"General practice nurse"[tiab] OR
"General practice nurses"[tiab] OR
"General practice physician"[tiab] OR
"General practice physicians"[tiab] OR
"intermediate care"[tiab] OR
"Intermediate care facility"[tiab] OR
"Intermediate care facilities"[tiab] OR
"ambulatory care"[tiab] OR
"Ambulatory care facility"[tiab] OR
"Ambulatory care facilities"[tiab] OR

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"Ambulatory care physician"[tiab] OR
"Ambulatory care physicians"[tiab] OR
"Ambulatory care nursing"[tiab] OR
"Ambulatory care nurse"[tiab] OR
"Ambulatory care nurses"[tiab] OR
"Ambulatory care service"[tiab] OR
"Ambulatory care services"[tiab] OR
"Ambulatory care clinic"[tiab] OR
"Ambulatory care clinics"[tiab] OR
"Office nursing"[tiab] OR
"Office nurse"[tiab] OR
"Office nurses"[tiab] OR
"Outpatient"[tiab] OR
"Outpatients"[tiab] OR
"Outpatient care"[tiab] OR
"Outpatient department"[tiab] OR
"Outpatient departments"[tiab] OR
"Outpatient service"[tiab] OR
"Outpatient services"[tiab] OR
"Outpatient clinic"[tiab] OR
"Outpatient clinics"[tiab] OR
"Outpatient facility"[tiab] OR
"Outpatient facilities"[tiab] OR
"Outpatient care service"[tiab] OR
"Outpatient care services"[tiab] OR
"Outpatient care clinic"[tiab] OR
"Outpatient care clinics"[tiab] OR
"Outpatient care facility"[tiab] OR
"Outpatient care facilities"[tiab] OR
"Community health service"[tiab] OR
"Community health services"[tiab] OR
"Community mental health service"[tiab] OR
"Community mental health services"[tiab] OR
"Delivery of health care"[tiab] OR
"Delivery of healthcare"[tiab] OR
"Delivery of health-care"[tiab] OR
"Health care delivery"[tiab] OR
"Healthcare delivery"[tiab] OR
"Health-care delivery"[tiab] OR
"Community care"[tiab] OR
"Community health nursing"[tiab] OR
"Community health nurse"[tiab] OR
"Community health nurses"[tiab] OR
"Community health plan"[tiab] OR
"Community health plans"[tiab] OR
"Community health planning"[tiab] OR
"Community health plannings"[tiab] OR
"Community health center"[tiab] OR

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3 "Community health centers"[tiab] OR
4 "Community health centre"[tiab] OR
5 "Community health centres"[tiab] OR
6 "CLSC"[tiab] OR
7 "CLSCs"[tiab] OR
8 "CLSC's"[tiab] OR
9
10 "Local community service center"[tiab] OR
11 "Local community service centers"[tiab] OR
12 "Local community service centre"[tiab] OR
13 "Local community service centres"[tiab] OR
14 "Centres locaux de services communautaires"[tiab] OR
15 "Centre local de services communautaires"[tiab] OR
16 "Groupe de médecine familiale"[tiab] OR
17 "Groupes de médecine familiale"[tiab] OR
18 "Family medicine group"[tiab] OR
19 "Family medicine groups"[tiab] OR
20 "Community medicine"[tiab] OR
21 "Community physician"[tiab] OR
22 "Community physicians"[tiab] OR
23 "Community doctor"[tiab] OR
24 "Community doctors"[tiab] OR
25 "Community Nursing"[tiab] OR
26 "Community Nurse"[tiab] OR
27 "Community Nurses"[tiab] OR
28 "Community service"[tiab] OR
29 "Community services"[tiab] OR
30 "Community clinic"[tiab] OR
31 "Community clinics"[tiab] OR
32 "Community facility"[tiab] OR
33 "Community facilities"[tiab] OR
34 "Community practice"[tiab] OR
35 "Community practices"[tiab] OR
36 "Community program"[tiab] OR
37 "Community programs"[tiab] OR
38 "Community care physician"[tiab] OR
39 "Community care physicians"[tiab] OR
40 "Community care doctor"[tiab] OR
41 "Community care doctors"[tiab] OR
42 "Community care nursing"[tiab] OR
43 "Community care nurse"[tiab] OR
44 "Community care nurses"[tiab] OR
45 "Community care service"[tiab] OR
46 "Community care services"[tiab] OR
47 "Community care clinic"[tiab] OR
48 "Community care clinics"[tiab] OR
49 "Community care facility"[tiab] OR
50 "Community care facilities"[tiab] OR
51 "Community care practice"[tiab] OR
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1
2
3 "Community care practices"[tiab] OR
4 "Community care program"[tiab] OR
5 "Community care programs"[tiab] OR
6 "Group practice"[tiab] OR
7 "Group practices"[tiab] OR
8 "Walk-in practice"[tiab] OR
9 "Walk-in practices"[tiab] OR
10 "Walk in practice"[tiab] OR
11 "Walk in practices"[tiab] OR
12 "Walk-in clinic"[tiab] OR
13 "Walk-in clinics"[tiab] OR
14 "Walk in clinic"[tiab] OR
15 "Walk in clinics"[tiab] OR
16 "Walk-in program"[tiab] OR
17 "Walk-in programs"[tiab] OR
18 "Walk in program"[tiab] OR
19 "Walk in programs"[tiab] OR
20 "Nursing station"[tiab] OR
21 "Nursing stations"[tiab] OR
22 "rural health"[tiab] OR
23 "rural health service"[tiab] OR
24 "rural health services"[tiab] OR
25 "rural health nursing"[tiab] OR
26 "rural health nurse"[tiab] OR
27 "rural health nurses"[tiab] OR
28 "Rural nursing"[tiab] OR
29 "Rural nurse"[tiab] OR
30 "Rural nurses"[tiab] OR
31 "Suburban Health Service"[tiab] OR
32 "Suburban Health Services"[tiab] OR
33 "Suburban"[tiab] OR
34 "Remote"[tiab] OR
35 "Remote consult"[tiab] OR
36 "Remote consults"[tiab] OR
37 "Remote consultation"[tiab] OR
38 "Remote consultations"[tiab] OR
39 "Telerehabilitation"[tiab] OR
40 "Telerehabilitations"[tiab] OR
41 "Tele-rehabilitation"[tiab] OR
42 "Tele-rehabilitations"[tiab] OR
43 "Telenursing"[tiab] OR
44 "Telenurse"[tiab] OR
45 "Telenurses"[tiab] OR
46 "Tele-nursing"[tiab] OR
47 "Tele-nurse"[tiab] OR
48 "Tele-nurses"[tiab] OR
49 "Telemedicine"[tiab] OR
50 "tele-medicine"[tiab] OR
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"Home care service"[tiab] OR
 "Home care services"[tiab] OR
 "Home care"[tiab] OR
 "Continuity of care"[tiab] OR
 "Care continuity"[tiab] OR
 "Counseling"[tiab] OR
 "Counselling"[tiab] OR
 "Distance Counseling"[tiab] OR
 "Distance Counselling"[tiab] OR
 "Health Services administration"[tiab] OR
 "Administration of health services"[tiab] OR
 "Home Health"[tiab] OR
 "Home Health Nursing"[tiab] OR
 "Home Health Nurse"[tiab] OR
 "Home Health Nurses"[tiab] OR
 "Home Nursing"[tiab] OR
 "Home Nurse"[tiab] OR
 "Home Nurses"[tiab] OR
 "Nursing home"[tiab] OR
 "Nursing homes"[tiab] OR
 "Elderly nursing home"[tiab] OR
 "Elderly nursing homes"[tiab] OR
 "Elder care"[tiab] OR
 "Elder living home"[tiab] OR
 "Elder living homes"[tiab] OR
 "Retirement home"[tiab] OR
 "Retirement homes"[tiab] OR
 "Résidence pour personnes âgées"[tiab] OR
 "Résidences pour personnes âgées"[tiab] OR
 "Centre d'hébergement"[tiab] OR
 "Centres d'hébergement"[tiab] OR
 "Centre de soins de longue durée"[tiab] OR
 "Centres de soins de longue durée"[tiab] OR
 "Centre d'hébergement de soins de longue durée"[tiab] OR
 "Centres d'hébergement de soins de longue durée"[tiab] OR
 "CHSLD"[tiab] OR
 "CHSLDs"[tiab] OR
 "CHSLD's"[tiab] OR
 "Ressource intermédiaire"[tiab] OR
 "Ressources intermédiaires"[tiab] OR
 "Long-term care home"[tiab] OR
 "Long-term care homes"[tiab] OR
 "Long term care home"[tiab] OR
 "Long term care homes"[tiab] OR
 "Long-term care center"[tiab] OR
 "Long-term care centers"[tiab] OR
 "Long term care center"[tiab] OR
 "Long term care centers"[tiab] OR

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3 "Long-term care centre"[tiab] OR
4 "Long-term care centres"[tiab] OR
5 "Long term care centre"[tiab] OR
6 "Long term care centres"[tiab] OR
7 "Soins de longue durée à domicile"[tiab] OR
8 "Long-stay home care"[tiab] OR
9 "Residential care"[tiab] OR
10 "Residential care center"[tiab] OR
11 "Residential care centers"[tiab] OR
12 "Residential care centre"[tiab] OR
13 "Residential care centres"[tiab] OR
14 "interactive consult"[tiab] OR
15 "interactive consults"[tiab] OR
16 "interactive consultation"[tiab] OR
17 "interactive consultations"[tiab] OR
18 "interactive service"[tiab] OR
19 "interactive services"[tiab] OR
20 "Respite Care"[tiab] OR
21 "Nursing staff"[tiab] OR
22 "Staff Nurse"[tiab] OR
23 "Staff Nurses"[tiab] OR
24 "Nurse"[tiab] OR
25 "Nurses"[tiab] OR
26 "Nursing"[tiab] OR
27 "Nursing team"[tiab] OR
28 "Nursing teams"[tiab] OR
29 "Nursing-led"[tiab] OR
30 "Nursing led"[tiab] OR
31 "Nurse-led"[tiab] OR
32 "Nurse led"[tiab] OR
33 "Nurses-led"[tiab] OR
34 "Nurses led"[tiab] OR
35 "Nursing-run"[tiab] OR
36 "Nursing run"[tiab] OR
37 "Nurse-run"[tiab] OR
38 "Nurse run"[tiab] OR
39 "Nurses-run"[tiab] OR
40 "Nurses run"[tiab] OR
41 "Nursing-managed"[tiab] OR
42 "Nursing managed"[tiab] OR
43 "Nurse-managed"[tiab] OR
44 "Nurse managed"[tiab] OR
45 "Nurses-managed"[tiab] OR
46 "Nurses managed"[tiab] OR
47 "Nursing management"[tiab] OR
48 "Nurse management"[tiab] OR
49 "Nurses management"[tiab] OR
50 "Nursing-delivered"[tiab] OR
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"Nursing delivered"[tiab] OR
 "Nurse-delivered"[tiab] OR
 "Nurse delivered"[tiab] OR
 "Nurses-delivered"[tiab] OR
 "Nurses delivered"[tiab] OR
 "Nursing care"[tiab] OR
 "Multidiscipline team"[tiab] OR
 "multidiscipline teams"[tiab] OR
 "multidisciplinary team"[tiab] OR
 "multidisciplinary teams"[tiab] OR
 "multi-discipline team"[tiab] OR
 "multi-discipline teams"[tiab] OR
 "multi-disciplinary team"[tiab] OR
 "multi-disciplinary teams"[tiab] OR
 "interdiscipline team"[tiab] OR
 "interdiscipline teams"[tiab] OR
 "interdisciplinary team"[tiab] OR
 "interdisciplinary teams"[tiab] OR
 "inter-discipline team"[tiab] OR
 "inter-discipline teams"[tiab] OR
 "inter-disciplinary team"[tiab] OR
 "inter-disciplinary teams"[tiab] OR
 "interprofessional team"[tiab] OR
 "interprofessional teams"[tiab] OR
 "inter-professional team"[tiab] OR
 "inter-professional teams"[tiab] OR
 "Teamwork"[tiab] OR
 "team"[tiab] OR
 "teams"[tiab] OR
 "Patient care team"[tiab] OR
 "Patient care teams"[tiab] OR
 "Health care team"[tiab] OR
 "Health care teams"[tiab] OR
 "Healthcare team"[tiab] OR
 "Healthcare teams"[tiab] OR
 "Health-care team"[tiab] OR
 "Health-care teams"[tiab] OR
 "Health personnel"[tiab] OR
 "Healthcare professional"[tiab] OR
 "Healthcare professionals"[tiab] OR
 "Health care professional"[tiab] OR
 "Health care professionals"[tiab] OR
 "Health-care professional"[tiab] OR
 "Health-care professionals"[tiab] OR
 "Healthcare provider"[tiab] OR
 "Healthcare providers"[tiab] OR
 "Health care provider"[tiab] OR
 "Health care providers"[tiab] OR

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3 "Health-care provider"[tiab] OR
4 "Health-care providers"[tiab] OR
5 "Health professional"[tiab] OR
6 "Health professionals"[tiab] OR
7 "Professional practice"[tiab] OR
8 "Professional practices"[tiab] OR
9 "Professional autonomy"[tiab])
10
11 AND
12 ("Advanced Practice Nursing"[MH] OR
13 "Nurse Practitioners"[MH] OR
14 "Family Nurse Practitioners"[MH] OR
15 "advanced practice nursing"[tiab] OR
16 "advanced practice nurse"[tiab] OR
17 "advanced practice nurses"[tiab] OR
18 ("APN"[tiab] AND "nursing"[tiab]) OR
19 ("APN"[tiab] AND "nurse"[tiab]) OR
20 ("APN"[tiab] AND "nurses"[tiab]) OR
21 "advanced nursing practice"[tiab] OR
22 "advanced nursing practices"[tiab] OR
23 "advanced nurse practitioner"[tiab] OR
24 "advanced nurse practitioners"[tiab] OR
25 ("ANP"[tiab] AND "nursing"[tiab]) OR
26 ("ANP"[tiab] AND "nurse"[tiab]) OR
27 ("ANP"[tiab] AND "nurses"[tiab]) OR
28 "advanced practice registered nursing"[tiab] OR
29 "advanced practice registered nurse"[tiab] OR
30 "advanced practice registered nurses"[tiab] OR
31 ("APRN"[tiab] AND "nursing"[tiab]) OR
32 ("APRN"[tiab] AND "nurse"[tiab]) OR
33 ("APRN"[tiab] AND "nurses"[tiab]) OR
34 "Nurse practitioner"[tiab] OR
35 "Nurse practitioners"[tiab] OR
36 ("NP"[tiab] AND "nursing"[tiab]) OR
37 ("NP"[tiab] AND "nurse"[tiab]) OR
38 ("NP"[tiab] AND "nurses"[tiab]) OR
39 "Primary healthcare nurse practitioner"[tiab] OR
40 "Primary healthcare nurse practitioners"[tiab] OR
41 "Primary health care nurse practitioner"[tiab] OR
42 "Primary health care nurse practitioners"[tiab] OR
43 "Primary health-care nurse practitioner"[tiab] OR
44 "Primary health-care nurse practitioners"[tiab] OR
45 ("PHCNP"[tiab] AND "Nursing"[tiab]) OR
46 ("PHCNP"[tiab] AND "Nurse"[tiab]) OR
47 ("PHCNP"[tiab] AND "Nurses"[tiab]) OR
48 "Primary care nurse practitioner"[tiab] OR
49 "Primary care nurse practitioners"[tiab] OR
50 ("PCNP"[tiab] AND "Nursing"[tiab]) OR
51 ("PCNP"[tiab] AND "Nurse"[tiab]) OR
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("PCNP"[tiab] AND "Nurses"[tiab]) OR
 "Family nurse practitioner"[tiab] OR
 "Family nurse practitioners"[tiab] OR
 ("FNP"[tiab] AND "Nursing"[tiab]) OR
 ("FNP"[tiab] AND "Nurse"[tiab]) OR
 ("FNP"[tiab] AND "Nurses"[tiab]) OR
 "Emergency nurse practitioner"[tiab] OR
 "Emergency nurse practitioners"[tiab] OR
 ("ENP"[tiab] AND "Nursing"[tiab]) OR
 ("ENP"[tiab] AND "Nurse"[tiab]) OR
 ("ENP"[tiab] AND "Nurses"[tiab]))
 AND
 ("Advance Directive Adherence"[MH] OR
 "Appointments and Schedules"[MH] OR
 "Biomarkers"[MH] OR
 "Blood Pressure"[MH] OR
 "Cholesterol"[MH] OR
 "Chronic Disease"[MH] OR
 "Consumer Behavior"[MH] OR
 "Costs and Cost Analysis"[MH] OR
 "Delivery of Health Care"[MH] OR
 "Diagnostic Tests, Routine"[MH] OR
 "Glycated Hemoglobin A"[MH] OR
 "Guideline Adherence"[MH] OR
 "Health Resources"[MH] OR
 "Health Services"[MH] OR
 "Health Status Indicators"[MH] OR
 "Health status"[MH] OR
 "Job Satisfaction"[MH] OR
 "Mortality"[MH] OR
 "Outcome and Process Assessment, Health Care"[MH] OR
 "Outcome Assessment, Health Care"[MH] OR
 "Pain"[MH] OR
 "Patient Satisfaction"[MH] OR
 "Personal Satisfaction"[MH] OR
 "Prescriptions"[MH] OR
 "Professional Role"[MH] OR
 "Quality of Health Care"[MH] OR
 "Referral and Consultation"[MH] OR
 "Task Performance and Analysis"[MH] OR
 "Treatment Adherence and Compliance"[MH] OR
 "Advance Directive Adherence"[tiab] OR
 "Schedule"[tiab] OR
 "Schedules"[tiab] OR
 "Appointment"[tiab] OR
 "Appointments"[tiab] OR
 "Attendance"[tiab] OR
 "Biomarker"[tiab] OR

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1
2
3 "Biomarkers"[tiab] OR
4 "Blood Pressure"[tiab] OR
5 "Care Process"[tiab] OR
6 "Care Processes"[tiab] OR
7 "Cholesterol"[tiab] OR
8 "Chronic disease"[tiab] OR
9 "Chronic diseases"[tiab] OR
10 "Chronic illness"[tiab] OR
11 "Chronic illnesses"[tiab] OR
12 "Chronic condition"[tiab] OR
13 "Chronic conditions"[tiab] OR
14 "clinical outcome"[tiab] OR
15 "clinical outcomes"[tiab] OR
16 "clinical parameter"[tiab] OR
17 "clinical parameters"[tiab] OR
18 "Compliant"[tiab] OR
19 "Compliance"[tiab] OR
20 "Consumer Behavior"[tiab] OR
21 "Consumer Behaviors"[tiab] OR
22 "Consumer Behaviour"[tiab] OR
23 "Consumer Behaviours"[tiab] OR
24 "Cost"[tiab] OR
25 "Costs"[tiab] OR
26 "Cost analysis"[tiab] OR
27 "Cost analyses"[tiab] OR
28 "Delivery of healthcare"[tiab] OR
29 "Delivery of health care"[tiab] OR
30 "Delivery of health-care"[tiab] OR
31 "Healthcare delivery"[tiab] OR
32 "Health care delivery"[tiab] OR
33 "Health-care delivery"[tiab] OR
34 "Routine test"[tiab] OR
35 "Routine tests"[tiab] OR
36 "Routine testing"[tiab] OR
37 "Diagnostic Test"[tiab] OR
38 "Diagnostic Tests"[tiab] OR
39 "Diagnostic Testing"[tiab] OR
40 "Routine diagnostic test"[tiab] OR
41 "Routine diagnostic tests"[tiab] OR
42 "Routine diagnostic testing"[tiab] OR
43 "economic evaluation"[tiab] OR
44 "economic evaluations"[tiab] OR
45 "economic analysis"[tiab] OR
46 "economic analyses"[tiab] OR
47 "Emergency Service"[tiab] OR
48 "Emergency Services"[tiab] OR
49 "Glycated Hemoglobin A"[tiab] OR
50 "Glycated Haemoglobin A"[tiab] OR
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"Guideline Adherence"[tiab] OR
 "HbA1C"[tiab] OR
 "high-density lipoprotein"[tiab] OR
 "high density lipoprotein"[tiab] OR
 "hdl"[tiab] OR
 "healthcare"[tiab] OR
 "health-care"[tiab] OR
 "health care"[tiab] OR
 "indicator"[tiab] OR
 "indicators"[tiab] OR
 "Health Planning"[tiab] OR
 "Health Plannings"[tiab] OR
 "Health Resource"[tiab] OR
 "Health Resources"[tiab] OR
 "Health Service"[tiab] OR
 "Health Services"[tiab] OR
 "Health status indicator"[tiab] OR
 "Health status indicators"[tiab] OR
 "Health status"[tiab] OR
 "hospital admission"[tiab] OR
 "hospital admissions"[tiab] OR
 "hospital referral"[tiab] OR
 "hospital referrals"[tiab] OR
 "Hypertension"[tiab] OR
 "Job Satisfaction"[tiab] OR
 "low-density lipoprotein"[tiab] OR
 "low density lipoprotein"[tiab] OR
 "ldl"[tiab] OR
 "Lipid profile"[tiab] OR
 "Lipid profiles"[tiab] OR
 "Manpower"[tiab] OR
 "Mortality"[tiab] OR
 "Mortalities"[tiab] OR
 "Death"[tiab] OR
 "Deaths"[tiab] OR
 "Outcome Assessment"[tiab] OR
 "Outcome Assessments"[tiab] OR
 Healthcare process assessment[tiab] OR
 Healthcare process assessments[tiab] OR
 Health care process assessment[tiab] OR
 Health care process assessments[tiab] OR
 Health-care process assessment[tiab] OR
 Health-care process assessments[tiab] OR
 "Pain"[tiab] OR
 "Pains"[tiab] OR
 "Patient Satisfaction"[tiab] OR
 "Personal Satisfaction"[tiab] OR
 "prefer"[tiab] OR

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1
2
3 "preferred"[tiab] OR
4 "preference"[tiab] OR
5 "preferences"[tiab] OR
6 "Prescribe"[tiab] OR
7 "Prescribed"[tiab] OR
8 "prescription"[tiab] OR
9 "prescriptions"[tiab] OR
10 "Process of care"[tiab] OR
11 "Processes of care"[tiab] OR
12 "Professional Role"[tiab] OR
13 "Professional Roles"[tiab] OR
14 "quality indicator"[tiab] OR
15 "quality indicators"[tiab] OR
16 "Quality of Health Care"[tiab] OR
17 "Quality of Health-Care"[tiab] OR
18 "Quality of Healthcare"[tiab] OR
19 "Health Care Quality"[tiab] OR
20 "Health-Care Quality"[tiab] OR
21 "Healthcare Quality"[tiab] OR
22 "Quality of life"[tiab] OR
23 "QOL"[tiab] OR
24 "Health-related quality of life"[tiab] OR
25 "Health related quality of life"[tiab] OR
26 "HRQOL"[tiab] OR
27 "Consultation"[tiab] OR
28 "Consultations"[tiab] OR
29 "Referral"[tiab] OR
30 "Referrals"[tiab] OR
31 "return visit"[tiab] OR
32 "return visits"[tiab] OR
33 "return appointment"[tiab] OR
34 "return appointments"[tiab] OR
35 "follow-up visit"[tiab] OR
36 "follow-up visits"[tiab] OR
37 "follow up visit"[tiab] OR
38 "follow up visits"[tiab] OR
39 "follow-up appointment"[tiab] OR
40 "follow-up appointments"[tiab] OR
41 "Follow up appointment"[tiab] OR
42 "Follow up appointments"[tiab] OR
43 "satisfaction"[tiab] OR
44 "satisfied"[tiab] OR
45 "satisfactory"[tiab] OR
46 "Task Analysis"[tiab] OR
47 "Task Analyses"[tiab] OR
48 "Task Performance"[tiab] OR
49 "Treatment Compliance"[tiab] OR
50 "Treatment compliant"[tiab] OR
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"treatment-compliant"[tiab] OR
 "Treatment Adherence"[tiab] OR
 "treatment adherent"[tiab] OR
 "treatment-adherent"[tiab] OR
 "Wellness"[tiab]
 OR
 "Anthropometry"[MH] OR
 "Body Weight"[MH] OR
 "Culturally Competent Care"[MH] OR
 "diet"[MH] OR
 "Diet, Food, and Nutrition"[MH] OR
 "Exercise"[MH] OR
 "Health Education"[MH] OR
 "Health Promotion"[MH] OR
 "Healthy Lifestyle"[MH] OR
 "Mental Health"[MH] OR
 "Nutrition Assessment"[MH] OR
 "Nutritional Status"[MH] OR
 "poverty"[MH] OR
 "Preventive Health Services"[MH] OR
 "Smoking Cessation"[MH] OR
 "Smoking Prevention"[MH] OR
 "Smoking"[MH] OR
 "Teaching"[MH] OR
 "Tobacco Smoke Pollution"[MH] OR
 "Tobacco Use"[MH] OR
 "Condition specific"[tiab] OR
 "Condition-specific"[tiab] OR
 "physical activity"[tiab] OR
 "anthropometric"[tiab] OR
 "anthropometrics"[tiab] OR
 "anthropometrical"[tiab] OR
 "anthropometrically"[tiab] OR
 "Anthropometry"[tiab] OR
 "Body Weight"[tiab] OR
 "Culturally Competent Care"[tiab] OR
 "Culturally-competent care"[tiab] OR
 "culturally diverse"[tiab] OR
 "culturally-diverse"[tiab] OR
 "Diet"[tiab] OR
 "Diets"[tiab] OR
 "Dietary"[tiab] OR
 "Dietetics"[tiab] OR
 "Dietetical"[tiab] OR
 "Dietetically"[tiab] OR
 "Food regimen"[tiab] OR
 "Food regimens"[tiab] OR
 "Dietary regimen"[tiab] OR

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3 "Dietary regimens"[tiab] OR
4 "Dietary restriction"[tiab] OR
5 "Dietary restrictions"[tiab] OR
6 "emotional health"[tiab] OR
7 "Exercise"[tiab] OR
8 "Health Education"[tiab] OR
9 "Health Promotion"[tiab] OR
10 "promotion of health"[tiab] OR
11 "healthy habit"[tiab] OR
12 "healthy habits"[tiab] OR
13 "Lifestyle"[tiab] OR
14 "Life-style"[tiab] OR
15 "Life style"[tiab] OR
16 Healthy life habit[tiab] OR
17 Healthy life habits[tiab] OR
18 "healthy living"[tiab] OR
19 "stress level"[tiab] OR
20 "stress levels"[tiab] OR
21 "low income"[tiab] OR
22 "low-income"[tiab] OR
23 "Mental Health"[tiab] OR
24 "Nutrition Assessment"[tiab] OR
25 "Nutrition"[tiab] OR
26 "Nutritional Status"[tiab] OR
27 "nutritional"[tiab] OR
28 "poverty"[tiab] OR
29 "socioeconomic status"[tiab] OR
30 "socio-economic status"[tiab] OR
31 "Preventive Health Service"[tiab] OR
32 "Preventive Health Services"[tiab] OR
33 "Health prevention"[tiab] OR
34 "Promotion"[tiab] OR
35 "second-hand smoke"[tiab] OR
36 "second hand smoke"[tiab] OR
37 "Smoke"[tiab] OR
38 "Smokes"[tiab] OR
39 "Smoked"[tiab] OR
40 "Smoker"[tiab] OR
41 "Smokers"[tiab] OR
42 "Smoking Cessation"[tiab] OR
43 "Smoking Prevention"[tiab] OR
44 "Quit smoking"[tiab] OR
45 "Quitting smoking"[tiab] OR
46 "Stop smoking"[tiab] OR
47 "Stopping smoking"[tiab] OR
48 "Smoking"[tiab] OR
49 "Teach"[tiab] OR
50 "Taught"[tiab] OR
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"Teaching"[tiab] OR
"Tobacco Use"[tiab] OR
"Weight"[tiab]
OR
"Immunization"[MH] OR
"Maternal Health Services"[MH] OR
"Primary Prevention"[MH] OR
"Secondary Prevention"[MH] OR
"Sexually Transmitted Diseases"[MH] OR
"Vaccination"[MH] OR
"Pediatrics"[MH] OR
"Child Development"[MH] OR
"Human Development"[MH] OR
"Adolescent"[MH] OR
"Immunization"[tiab] OR
"Immunisation"[tiab] OR
"Immunize"[tiab] OR
"Immunizes"[tiab] OR
"Immunized"[tiab] OR
"Immunise"[tiab] OR
"Immunises"[tiab] OR
"Immunised"[tiab] OR
"laboratory test"[tiab] OR
"Maternal Health Service"[tiab] OR
"Maternal Health Services"[tiab] OR
"pregnancy"[tiab] OR
"Prevent"[tiab] OR
"Prevents"[tiab] OR
"Prevented"[tiab] OR
"Prevention"[tiab] OR
"Primary Prevention"[tiab] OR
"Secondary Prevention"[tiab] OR
"sexually transmitted"[tiab] OR
"sexually-transmitted"[tiab] OR
"Vaccination"[tiab] OR
"Vaccine"[tiab] OR
"Vaccines"[tiab] OR
"Vaccinate"[tiab] OR
"Vaccinates"[tiab] OR
"Vaccinated"[tiab] OR
"Pediatric"[tiab] OR
"Pediatrics"[tiab] OR
"Paediatric"[tiab] OR
"Paediatrics"[tiab] OR
"Childhood development"[tiab] OR
"Child development"[tiab] OR
"Childhood"[tiab] OR
"Human development"[tiab] OR

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1
2
3 "healthy development"[tiab] OR
4 "youth"[tiab] OR
5 "youths"[tiab] OR
6 "adolescence"[tiab]
7 "adolescent"[tiab]
8 "adolescents"[tiab]
9
10 OR
11 "Acute Coronary Syndrome"[MH] OR
12 "Adjustment Disorders"[MH] OR
13 "Alcohol Drinking"[MH] OR
14 "Alcohol-Related Disorders"[MH] OR
15 "Anxiety Disorders"[MH] OR
16 "Blood Glucose"[MH] OR
17 "Cancer Survivors"[MH] OR
18 "Cardiovascular Diseases"[MH] OR
19 "Coronary Disease"[MH] OR
20 "Depressive Disorder"[MH] OR
21 "Diabetes Mellitus"[MH] OR
22 "diabetes, gestational"[MH] OR
23 "Diabetic Foot"[MH] OR
24 "Health Care Evaluation Mechanisms"[MH] OR
25 "Health Information Interoperability"[MH] OR
26 "Heart Failure"[MH] OR
27 "Ischemia"[MH] OR
28 "Mental Disorders"[MH] OR
29 "Neoplasms"[MH] OR
30 "pain management"[MH] OR
31 "pain"[MH] OR
32 "Papanicolaou Test"[MH] OR
33 "Patient Reported Outcome Measures"[MH] OR
34 "Physical Examination"[MH] OR
35 "Pulmonary Disease, Chronic Obstructive"[MH] OR
36 "Quality Indicators, Health Care"[MH] OR
37 "Rehabilitation"[MH] OR
38 "Self care"[MH] OR
39 "Self Efficacy"[MH] OR
40 "Stroke"[MH] OR
41 "Dementia"[MH] OR
42 "Acute Coronary Syndrome"[tiab] OR
43 "Acute Coronary Syndromes"[tiab] OR
44 "ACS"[tiab] OR
45 "ACSs"[tiab] OR
46 "Adjustment Disorder"[tiab] OR
47 "Adjustment Disorders"[tiab] OR
48 "Alcohol Drinking"[tiab] OR
49 "Alcohol-Related Disorder"[tiab] OR
50 "Alcohol-Related Disorders"[tiab] OR
51 "Alcohol Related Disorder"[tiab] OR
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"Blood sugars"[tiab] OR
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"Cardiovascular disease"[tiab] OR
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"CVD"[tiab] OR
"CVDs"[tiab] OR
"complication"[tiab] OR
"complications"[tiab] OR
"copd"[tiab] OR
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"Chronic Obstructive Pulmonary Disorder"[tiab] OR
"Chronic Obstructive Pulmonary Disorders"[tiab] OR
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"Coronary artery diseases"[tiab] OR
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"Depressive Disorder"[tiab] OR
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"Diabetes"[tiab] OR
"Diabetic Foot"[tiab] OR
"foot complication"[tiab] OR
"foot complications"[tiab] OR
"gestational diabetes"[tiab] OR
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"glycaemia"[tiab] OR
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"Health Care Evaluation Mechanism"[tiab] OR
"Health Care Evaluation Mechanisms"[tiab] OR

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3 "Health-Care Evaluation Mechanism"[tiab] OR
4 "Health-Care Evaluation Mechanisms"[tiab] OR
5 "Health Information Interoperability"[tiab] OR
6 Interoperability of Health Information[tiab] OR
7 Inter-operability of Health Information[tiab] OR
8 "Interoperability"[tiab] OR
9 "Inter-operability"[tiab] OR
10 "Interoperable"[tiab] OR
11 "Inter-operable"[tiab] OR
12 "Heart Failure"[tiab] OR
13 "Congestive heart failure"[tiab] OR
14 "CHF"[tiab] OR
15 "Ischemia"[tiab] OR
16 "Ischemias"[tiab] OR
17 "ischemic stroke"[tiab] OR
18 "ischemic strokes"[tiab] OR
19 "Ischaemia"[tiab] OR
20 "Ischaemias"[tiab] OR
21 "ischaemic stroke"[tiab] OR
22 "ischaemic strokes"[tiab] OR
23 "Mental Disorder"[tiab] OR
24 "Mental Disorders"[tiab] OR
25 "mental health"[tiab] OR
26 "mentally healthy"[tiab] OR
27 "Mental illness"[tiab] OR
28 "Mental illnesses"[tiab] OR
29 "Mentally ill"[tiab] OR
30 "Neoplasm"[tiab] OR
31 "Neoplasms"[tiab] OR
32 "Oncology"[tiab] OR
33 "Oncologist"[tiab] OR
34 "Oncologists"[tiab] OR
35 "pain management"[tiab] OR
36 "management of pain"[tiab] OR
37 "managing pain"[tiab] OR
38 "managed pain"[tiab] OR
39 "pain"[tiab] OR
40 "pains"[tiab] OR
41 "Pap test"[tiab] OR
42 "Pap tests"[tiab] OR
43 "Papanicolaou Test"[tiab] OR
44 "Papanicolaou Tests"[tiab] OR
45 "Patient Reported Experience Measure"[tiab] OR
46 "Patient Reported Experience Measures"[tiab] OR
47 "Patient Reported Outcome Measure"[tiab] OR
48 "Patient Reported Outcome Measures"[tiab] OR
49 "Patient-Reported Experience Measure"[tiab] OR
50 "Patient-Reported Experience Measures"[tiab] OR
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"Patient-Reported Outcome Measure"[tiab] OR
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 "Physical Exam"[tiab] OR
 "Physical Exams"[tiab] OR
 "Physical Examination"[tiab] OR
 "Physical Examinations"[tiab] OR
 "PREM"[tiab] OR
 "PREMs"[tiab] OR
 "PROM"[tiab] OR
 "PROMs"[tiab] OR
 "promotion"[tiab] OR
 "psychosocial"[tiab] OR
 "psycho social"[tiab] OR
 "psycho-social"[tiab] OR
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 "Healthcare Quality Indicator"[tiab]
 "Healthcare Quality Indicators"[tiab]
 "Health-care Quality Indicator"[tiab]
 "Health-care Quality Indicators"[tiab]
 "Quality indicator of health care"[tiab]
 "Quality indicators of health care"[tiab]
 "Quality indicator of healthcare"[tiab]
 "Quality indicators of healthcare"[tiab]
 "Quality indicator of health-care"[tiab]
 "Quality indicators of health-care"[tiab]
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 "Self Efficacy"[tiab] OR
 "self-care"[tiab] OR
 "self-efficacy"[tiab] OR
 "Stroke"[tiab] OR
 "Strokes"[tiab] OR
 "cerebrovascular accident"[tiab] OR
 "cerebrovascular accidents"[tiab] OR
 "CVA"[tiab] OR
 "CVAs"[tiab] OR
 "Dementia"[tiab] OR
 "Dementias"[tiab]
 OR
 "Allied Health Personnel"[MH] OR
 "ambulatory care"[MH] OR
 "Ambulatory Care Information Systems"[MH] OR
 "Appointments and Schedules"[MH] OR
 "Clinical Competence"[MH] OR
 "Duration of Therapy"[MH] OR

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3 "Education"[MH] OR
4 "Educational Measurement"[MH] OR
5 "Evidence-Based Practice"[MH] OR
6 "Harm Reduction"[MH] OR
7 "Health Behavior"[MH] OR
8 "Health Care Costs"[MH] OR
9 "Health Care Economics and Organizations"[MH] OR
10 "Health Care Facilities, Manpower, and Services"[MH] OR
11 "Health Care Quality, Access, and Evaluation"[MH] OR
12 "Health Knowledge, Attitudes, Practice"[MH] OR
13 "Health Plan Implementation"[MH] OR
14 "Health Services Accessibility"[MH] OR
15 "Healthcare Disparities"[MH] OR
16 "Hospital Shared Services"[MH] OR
17 "House Calls"[MH] OR
18 "Length of Stay"[MH] OR
19 "Office Visits"[MH] OR
20 "Patient Acceptance of Health Care"[MH] OR
21 "patient admission"[MH] OR
22 "Patient Advocacy"[MH] OR
23 "Prescriptions"[MH] OR
24 "Referral and Consultation"[MH] OR
25 "Training Support"[MH] OR
26 "Universal Health Care"[MH] OR
27 "Allied Health Personnel"[tiab] OR
28 "Access to care"[tiab] OR
29 "care access"[tiab] OR
30 "Access to health-care"[tiab] OR
31 "Access to healthcare"[tiab] OR
32 "Access to health care"[tiab] OR
33 "Health Personnel"[tiab] OR
34 "ambulatory care"[tiab] OR
35 "Ambulatory Care Information System"[tiab] OR
36 "Ambulatory Care Information Systems"[tiab] OR
37 "Schedule"[tiab] OR
38 "Schedules"[tiab] OR
39 "Scheduled"[tiab] OR
40 "Appointment"[tiab] OR
41 "Appointments"[tiab] OR
42 "Clinical Competence"[tiab] OR
43 "Clinical Competency"[tiab] OR
44 "Clinical Competencies"[tiab] OR
45 "Cost outcome"[tiab] OR
46 "Cost outcomes"[tiab] OR
47 "Cost"[tiab] OR
48 "Costs"[tiab] OR
49 "direct cost"[tiab] OR
50 "direct costs"[tiab] OR
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"indirect cost"[tiab] OR
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 "Duration of Therapy"[tiab] OR
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 "Evidence-based policies"[tiab] OR
 "Evidence-Based Practice"[tiab] OR
 "Evidence-Based Practices"[tiab] OR
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 "Reduction of harm"[tiab] OR
 "Harm prevention"[tiab] OR
 "Prevention of harm"[tiab] OR
 "Health Behavior"[tiab] OR
 "Health Behaviors"[tiab] OR
 "Health Behaviour"[tiab] OR
 "Health Behaviours"[tiab] OR
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 "Health Care Cost"[tiab] OR
 "Health Care Costs"[tiab] OR
 "Health-Care Cost"[tiab] OR
 "Health-Care Costs"[tiab] OR
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 "Health Care Organization"[tiab] OR
 "Health Care Organizations"[tiab] OR
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 "Health-Care Organizations"[tiab] OR
 "HealthCare Economics"[tiab] OR
 "Health Care Economics"[tiab] OR
 "Health-Care Economics"[tiab] OR
 "HealthCare Facility"[tiab] OR
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 "Health Care Facility"[tiab] OR
 "Health Care Facilities"[tiab] OR
 "Health-Care Manpower"[tiab] OR
 "Health Care Manpower"[tiab] OR

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3 "HealthCare Service"[tiab] OR
4 "HealthCare Services"[tiab] OR
5 "Health-Care Service"[tiab] OR
6 "Health-Care Services"[tiab] OR
7 "Health Care Service"[tiab] OR
8 "Health Care Services"[tiab] OR
9 "HealthCare Quality"[tiab] OR
10 "Health-Care Quality"[tiab] OR
11 "Health Care Quality"[tiab] OR
12 "Quality HealthCare"[tiab] OR
13 "Quality Health-Care"[tiab] OR
14 "Quality Health Care"[tiab] OR
15 "Health Care Access"[tiab] OR
16 "Health-Care Access"[tiab] OR
17 "HealthCare Access"[tiab] OR
18 "HealthCare Evaluation"[tiab] OR
19 "HealthCare Evaluations"[tiab] OR
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22 "Health-Care Evaluation"[tiab] OR
23 "Health-Care Evaluations"[tiab] OR
24 "Evaluation of Health Care"[tiab] OR
25 "Evaluation of Health-Care"[tiab] OR
26 "Evaluation of HealthCare"[tiab] OR
27 "Evaluations of Health Care"[tiab] OR
28 "Evaluations of Health-Care"[tiab] OR
29 "Evaluations of HealthCare"[tiab] OR
30 "Evaluate Health Care"[tiab] OR
31 "Evaluate Health-Care"[tiab] OR
32 "Evaluate HealthCare"[tiab] OR
33 "Evaluates Health Care"[tiab] OR
34 "Evaluates Health-Care"[tiab] OR
35 "Evaluates HealthCare"[tiab] OR
36 "Evaluated Health Care"[tiab] OR
37 "Evaluated Health-Care"[tiab] OR
38 "Evaluated HealthCare"[tiab] OR
39 "Evaluating Health Care"[tiab] OR
40 "Evaluating Health-Care"[tiab] OR
41 "Evaluating HealthCare"[tiab] OR
42 "Health Knowledge"[tiab] OR
43 "Knowledge of Health"[tiab] OR
44 "Health Attitude"[tiab] OR
45 "Health Attitudes"[tiab] OR
46 "Health Plan Implementation"[tiab] OR
47 "Health Resource Utilization"[tiab] OR
48 "Utilization of Health Resources"[tiab] OR
49 "Health Resource Utilisation"[tiab] OR
50 "Utilisation of Health Resources"[tiab] OR
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"Health Resource Usage"[tiab] OR
 "Usage of health Resources"[tiab] OR
 "Health Resource Usages"[tiab] OR
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 "Health Service Accessibility"[tiab] OR
 "Health Services Accessibility"[tiab] OR
 "Accessibility of Health Services"[tiab] OR
 "Access to Health Services"[tiab] OR
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 "Healthcare Disparities"[tiab] OR
 "Health Care Disparities"[tiab] OR
 "Health-Care Disparities"[tiab] OR
 "healthy environment"[tiab] OR
 "healthy environments"[tiab] OR
 "Hospital Shared Service"[tiab] OR
 "Hospital Shared Services"[tiab] OR
 "House Call"[tiab] OR
 "House Calls"[tiab] OR
 "Length of Stay"[tiab] OR
 "Lengths of Stay"[tiab] OR
 "LOS"[tiab] OR
 "Office Visit"[tiab] OR
 "Office Visits"[tiab] OR
 "Patient Acceptance"[tiab] OR
 "patient admission"[tiab] OR
 "patient admissions"[tiab] OR
 "Admission of patient"[tiab] OR
 "Admission of patients"[tiab] OR
 "Patient Advocacy"[tiab] OR
 "Prescription"[tiab] OR
 "Prescriptions"[tiab] OR
 "Consultation"[tiab] OR
 "Consultations"[tiab] OR
 "Referral"[tiab] OR
 "Referrals"[tiab] OR
 "return visit"[tiab] OR
 "return visits"[tiab] OR
 "Training Support"[tiab] OR
 "Universal Health-Care"[tiab] OR
 "Universal Health Care"[tiab] OR
 "Universal HealthCare"[tiab] OR
 "unplanned"[tiab]
 OR
 "Delivery of Health Care"[MH] OR
 "Frailty"[MH] OR
 "Global Health"[MH] OR

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2
3 "Health Equity"[MH] OR
4 "Health Literacy"[MH] OR
5 "Health Status Disparities"[MH] OR
6 "Healthcare Disparities"[MH] OR
7 "Income"[MH] OR
8 "Insurance Coverage"[MH] OR
9 "International Classification of Functioning, Disability and Health"[MH] OR
10 "Marital Status"[MH] OR
11 "Minority Health"[MH] OR
12 "Oceanic Ancestry Group"[MH] OR
13 "Patient Selection"[MH] OR
14 "Population Dynamics"[MH] OR
15 "Population Groups"[MH] OR
16 "Poverty Areas"[MH] OR
17 "Refusal to Treat"[MH] OR
18 "Religion"[MH] OR
19 "Social Discrimination"[MH] OR
20 "Socioeconomic Factors"[MH] OR
21 "Treatment Failure"[MH] OR
22 "Aboriginal"[tiab] OR
23 "Communication Barriers"[tiab] OR
24 "Delivery of HealthCare"[tiab] OR
25 "Delivery of Health Care"[tiab] OR
26 "Delivery of Health-Care"[tiab] OR
27 "HealthCare Delivery"[tiab] OR
28 "Health Care Delivery"[tiab] OR
29 "Health-Care Delivery"[tiab] OR
30 "Disability Evaluation"[tiab] OR
31 "Discrimination"[tiab] OR
32 "equity"[tiab] OR
33 "Frailty"[tiab] OR
34 "Global Health"[tiab] OR
35 "Health Equity"[tiab] OR
36 "Health Literacy"[tiab] OR
37 "Health Status Disparity"[tiab] OR
38 "Health Status Disparities"[tiab] OR
39 "Income"[tiab] OR
40 "Incomes"[tiab] OR
41 "Insurance coverage"[tiab] OR
42 "Insurance coverages"[tiab] OR
43 "Insurance cover"[tiab] OR
44 "Insurance covers"[tiab] OR
45 "Insurance covered"[tiab] OR
46 "International Classification of Functioning, Disability and Health"[tiab] OR
47 "inequal"[tiab] OR
48 "inequality"[tiab] OR
49 "inequalities"[tiab] OR
50 "Marital status"[tiab] OR
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"Minority Health"[tiab] OR
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 "Oceanic Ancestry Group"[tiab] OR
 "Oceanic Ancestry Groups"[tiab] OR
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 "Population groups"[tiab] OR
 "Poverty"[tiab] OR
 "Poverty area"[tiab] OR
 "Poverty areas"[tiab] OR
 "Refusal to Treat"[tiab] OR
 "Refusal-to-Treat"[tiab] OR
 "Religion"[tiab] OR
 "Religions"[tiab] OR
 "safety net"[tiab] OR
 "Safety-net"[tiab] OR
 "Gender Minority"[tiab] OR
 "Gender Minorities"[tiab] OR
 "Sexual Minority"[tiab] OR
 "Sexual Minorities"[tiab] OR
 "Sexual Orientation"[tiab] OR
 "Sexual Orientations"[tiab] OR
 "Social Discrimination"[tiab] OR
 "Social Discriminations"[tiab] OR
 "Social support"[tiab] OR
 "treatment failure"[tiab] OR
 "treatment failures"[tiab] OR
 "Treatment preference"[tiab] OR
 "Treatment preferences"[tiab] OR
 "Vulnerability"[tiab] OR
 "Vulnerabilities"[tiab] OR
 "Vulnerable"[tiab] OR
 "Healthcare Disparity"[tiab] OR
 "Health Care Disparity"[tiab] OR
 "Health-Care Disparity"[tiab] OR
 "Healthcare Disparities"[tiab] OR
 "Health-care Disparities"[tiab] OR
 "Health care Disparities"[tiab])
 AND
 (systematic[sb] or
 meta-analysis[pt] or
 meta-analysis as topic[mh] or
 meta-analysis[mh] or
 meta analy*[tw] or
 metanaly*[tw] or

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metaanaly*[tw] or
met analy*[tw] or
integrative research[tiab] or
integrative review*[tiab] or
integrative overview*[tiab] or
research integration*[tiab] or
research overview*[tiab] or
collaborative review*[tiab] or
collaborative overview*[tiab] or
systematic review*[tiab] or
((overview*[ti] or review[ti] or synthesis[ti] or summary[ti] or cochrane[ti] or analysis[ti]) and
(reviews[ti] or meta-analyses[ti] or articles[ti] or umbrella[ti])) or
"umbrella review"[tiab] or
(meta-review[tiab] or meta review[tiab]) or
((overview*[ti] or reviews[ti]) and (systematic[ti] or cochrane[ti])) or
(reviews[tiab] and (meta [tiab] or published[tiab] or quality[tiab] or included[tiab] or summar*[tiab])) or
("cochrane reviews"[tiab]) or
(evidence[ti] and (reviews[ti] or meta-analyses[ti]))

Appendix 2: Preliminary search strategies for unpublished literature

CADTH Information Services, Grey Matters: a practical tool for searching health-related grey literature
<https://www.cadth.ca/resources/finding-evidence/grey-matters>

Organization for Economic Co-operation and Development (OECD)
<http://www.oecd.org/>

ProQuest Dissertation and Theses
<https://about.proquest.com/products-services/pqdtglobal.html>

World Health Organization
<https://www.who.int/>

00 - GENERAL, MULTIDISCIPLINARY

East View Information Services
<http://www.eastview.com>

GreyNet International, Grey literature Network Service
<http://www.greynet.org>

Grijze Literatuur in Nederland, GLIN
<http://www.publiekwijzer.nl/bestanden.php?id=zoeknaar&db=3.2>

Italian Grey Literature Database
<http://polarcnr.area.ge.cnr.it/cataloghi/bice/index.php?type=Grigia>

National Repository of Grey Literature, NRGL
<http://www.nusl.cz/?lang=en>

OpenGrey Repository, System for Information on Grey Literature in Europe
<http://www.opengrey.eu>

[NEW ENTRY](#)

06 - BIOLOGICAL & MEDICAL SCIENCES

Cochrane Reviews
<http://www.cochrane.org/reviews/en/mr000010.html>

Doctor of Nursing Practice, DNP
<http://libguides.rutgers.edu/content.php?pid=449135&sid=3680427>

Duke University Medical Center Library
<http://guides.mcclibrary.duke.edu/greyliterature>

Gray Literature in Health Research
<http://researchguides.dml.georgetown.edu/content.php?pid=352972&sid=2887419>

Grey Horizon, A Grey Literature Current Awareness Tool in Cancer Care
<http://grey-horizon.blogspot.nl/>

Grey Literature for Dentistry
<http://guides.library.utoronto.ca/dentistry>

Grey Literature in the Health Sciences
<http://guides.library.upenn.edu/healthgreylit?hs=a>

Grey Literature Report - New York Academy of Medicine

<http://www.greylit.org>

HealthKnowledge

<http://www.healthknowledge.org.uk/public-health-textbook/research-methods/1a-epidemiology/grey-literature>

Lister Hill Library of the Health Sciences

<http://libguides.lhl.uab.edu/GreyLit>

Mesothelioma Guide

<https://www.mesotheliomaguide.com/mesothelioma/causes/asbestos-and-cancer/>

Mesothelioma.net

<http://www.mesothelioma.net>

Norris Medical Library - Grey Literature Resource Guide

http://norris.usc.libguides.com/grey_literature

Nursing and Allied Health Resource Section, NAHRS

<http://sites.google.com/site/nahrsnursingresources/Home/grey-literature-1>

Social Policy and Practice

<http://bathhealthnews.blogspot.com/2009/11/new-database-social-policy-practice.html>

Health Sciences Library and Informatics Center

<http://libguides.health.unm.edu/content.php?pid=200149>

University of Waterloo

http://www.lib.uwaterloo.ca/discipline/health_kin/grey_literature.html

PRISMA-P 2015 Checklist

This checklist has been adapted for use with protocol submissions to *Systematic Reviews* from Table 3 in Moher D et al: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews* 2015 4:1

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
ADMINISTRATIVE INFORMATION					
Title					
Identification	1a	Identify the report as a protocol of a systematic review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	<input type="checkbox"/>	<input type="checkbox"/>	NA
Registration	2	If registered, provide the name of the registry (e.g., PROSPERO) and registration number in the Abstract	<input checked="" type="checkbox"/>	<input type="checkbox"/>	101
Authors					
Contact	3a	Provide name, institutional affiliation, and e-mail address of all protocol authors; provide physical mailing address of corresponding author	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8-69
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	298-301
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	<input type="checkbox"/>	<input type="checkbox"/>	NA
Support					
Sources	5a	Indicate sources of financial or other support for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	303-306
Sponsor	5b	Provide name for the review funder and/or sponsor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	303-306
Role of sponsor/funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	<input checked="" type="checkbox"/>	<input type="checkbox"/>	303-306
INTRODUCTION					
Rationale	6	Describe the rationale for the review in the context of what is already known	<input checked="" type="checkbox"/>	<input type="checkbox"/>	121-143
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	145-153
METHODS					

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
Eligibility criteria	8	Specify the study characteristics (e.g., PICO, study design, setting, time frame) and report characteristics (e.g., years considered, language, publication status) to be used as criteria for eligibility for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	159-221
Information sources	9	Describe all intended information sources (e.g., electronic databases, contact with study authors, trial registers, or other grey literature sources) with planned dates of coverage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	222-239
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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	240-250, Appendix 1
STUDY RECORDS					
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	155-279
Selection process	11b	State the process that will be used for selecting studies (e.g., two independent reviewers) through each phase of the review (i.e., screening, eligibility, and inclusion in meta-analysis)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	155-279
Data collection process	11c	Describe planned method of extracting data from reports (e.g., piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	252-261
Data items	12	List and define all variables for which data will be sought (e.g., PICO items, funding sources), any pre-planned data assumptions and simplifications	<input checked="" type="checkbox"/>	<input type="checkbox"/>	160-168
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	206-212
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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	160-168; 262-266
DATA					
Synthesis	15a	Describe criteria under which study data will be quantitatively synthesized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	272-279
	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 (e.g., I^2 , Kendall's tau)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	272-279
	15c	Describe any proposed additional analyses (e.g., sensitivity or subgroup analyses, meta-regression)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	201-205; 272-279
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	<input checked="" type="checkbox"/>	<input type="checkbox"/>	272-279
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (e.g., publication bias across studies, selective reporting within studies)	<input type="checkbox"/>	<input type="checkbox"/>	NA
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (e.g., GRADE)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	262-266

BMJ Open

Identifying Indicators Sensitive to Primary Healthcare Nurse Practitioner Practice: A Review of Systematic Reviews Protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2020-043213.R1
Article Type:	Protocol
Date Submitted by the Author:	24-Oct-2020
Complete List of Authors:	Kilpatrick, Kelley; McGill University, Ingram School of Nursing, Faculty of Medicine and Health Sciences Tchouaket, Eric; Université du Québec en Outaouais - Sciences infirmières Chouinard, Maud-Christine; Université du Québec à Chicoutimi, Sciences de la santé Savard, Isabelle; McGill University, Ingram School of Nursing, Faculty of Medicine and Health Sciences Bouabdillah, Naima; Université du Québec à Trois-Rivières - Sciences infirmières Houle, Julie; Université du Québec à Trois-Rivières - Sciences infirmières St-Louis, Geneviève; Centre intégré universitaire de santé et de services sociaux de la Mauricie-et-du-Centre-du-Québec, Support and Development of Professional Practices in Nursing and Assistance Care and Infection Prevention Associate Directorate Jabbour, Mira; Centre intégré universitaire de santé et de services sociaux de l'Est-de-l'Île-de-Montréal du Québec, Maisonneuve-Rosemont Hospital Site Atallah, Renee; McGill University, Ingram School of Nursing, Faculty of Medicine and Health Sciences
Primary Subject Heading:	Nursing
Secondary Subject Heading:	Health services research
Keywords:	PRIMARY CARE, Quality in health care < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, STATISTICS & RESEARCH METHODS

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Identifying Indicators Sensitive to Primary Healthcare Nurse Practitioner Practice: A Review of Systematic Reviews Protocol

Kelley Kilpatrick, RN, PhD, Eric Tchouaket, PhD, Maud-Christine Chouinard, RN, PhD, Isabelle Savard, NP, MSc, Naima Bouabdillah, RN, PhD, Julie Houle, RN, PhD, Geneviève St-Louis, RN, Mira Jabbour, RD, MSc, Renée Atallah, MSc

Corresponding author:

Kelley Kilpatrick, RN, PhD

Associate Professor

Susan E. French Chair in Nursing Research and Innovative Practice, Ingram School of Nursing, Faculty of Medicine, McGill University, 680 Sherbrooke Street West, Office 1811, Montreal, Quebec, Canada, H3A 2M7

Tel.: 011-514-398-3416 Email: kelly.kilpatrick@mcgill.ca

Authors' full address:

Eric Tchouaket, PhD

Associate Professor

Department of Nursing, Université du Québec en Outaouais (UQO), St-Jérôme Campus

5 Saint-Joseph Street, Room J-3204, Saint-Jérôme, Québec, Canada, J7Z 0B7

Tel.: 011-450-530-7616, ext. 4039 Email : eric.tchouaket@uqo.ca

Maud-Christine Chouinard, RN, PhD,

Professor,

Université du Québec à Chicoutimi (UQAC), Département des sciences de la santé (Health Sciences

Department),

Bureau V1-1065, 555, boulevard de l'Université, Chicoutimi, Québec, Canada G7H 2B1

Tel : 0-11-418 545-5011 ext.5344 Email : maud-christine_chouinard@uqac.ca

Isabelle Savard, PHCNP, MSc

Doctoral Student,

Ingram School of Nursing, Faculty of Medicine and Health Sciences, McGill University, 680 Sherbrooke

Street West, Office 1811, Montreal, Quebec, Canada, H3A 2M7

Tel.: 011- 450 530-7616 , poste 4818 Email: isabelle.savard@uqo.ca

Naima Bouabdillah, RN, PhD,

Professor,

Department of Nursing, Université du Québec à Trois-Rivières

3351, boulevard des Forges, Room 4859, Trois-Rivières, Québec, Canada G9A 5H7

Tel: 1-819-3765011 ext. 3440 Email: Naima.Bouabdillah@uqtr.ca

Julie Houle, RN, PhD,

Professor,

Department of Nursing, Université du Québec à Trois-Rivières,

Scientific director of medical and clinical research at Centre intégré universitaire en

santé et services sociaux de la Mauricie et du Centre du Québec (CIUSSS MCQ)

3351, boulevard des Forges, Room 4802, Trois-Rivières, Québec, Canada G9A 5H7

ABSTRACT

Introduction: Primary healthcare nurse practitioners (PHCNPs) practice in a wide range of clinical settings and with diverse patient populations. Several systematic reviews have examined outcomes of PHCNP roles. However, there is a lack of consistency in the definitions used for the PHCNP role across the reviews. The identification of indicators sensitive to PHCNP practice from the perspective of patients, providers and the healthcare system will allow researchers, clinicians and decision-makers to understand how these providers contribute to outcomes of care.

Methods and analysis: A review of systematic reviews is proposed to describe the current state of knowledge about indicators sensitive to PHCNP practice using recognized role definitions. Outcomes of interest include any outcome indicator measuring the effectiveness of PHCNPs. We will limit our search to 2010 onwards to capture the most up-to-date trends. The following electronic databases will be searched: AMED, CINAHL, Cochrane Library Database of Systematic Reviews and Controlled Trials Register, DARE, EMBASE, Global Health, HEED, Health Evidence, HealthStar, Health Systems Evidence, Joanna Briggs Institute, Medline, PDQ-Evidence, Pubmed, and Web of Science. The search strategies will be reviewed by an academic librarian. Reference lists of all relevant publications will be reviewed. Grey literature will be searched from 2010 onwards, and will include: CADTH Information Services, CADTH's Grey Matters tool, OpenGrey, Organization for Economic Co-operation and Development, ProQuest Dissertation and Theses, and World Health Organization. The PROSPERO International Prospective Register of Systematic Reviews will be searched to identify registered review protocols. The review protocol was developed using PRISMA-P recommendations. A narrative synthesis will be used to summarize study findings.

Ethics and dissemination: No ethical approval is required for the study. The data used in the study will be abstracted from published systematic reviews. Dissemination strategies will include peer-reviewed publication, conference presentations, and presentations to key stakeholders.

PROSPERO registration number: CRD42020198182

Word count: 300/300

KEYWORDS: Indicators, nurse practitioner, primary healthcare, review of systematic reviews

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Article Summary

Strengths and Limitations

- Inconsistent role definitions for nurse practitioner roles limits the generalizability of research findings across countries. Our review of systematic reviews will help to bridge that knowledge gap by including a recognized definition for nurse practitioner roles.
- There will be no language restrictions for studies included in the review of systematic reviews.
- No quantitative analyses are planned.
- Because the review focuses on studies that clearly define the nurse practitioner role, the overview may exclude studies that examine nurse practitioner roles but did not provide clear role definitions.

BACKGROUND

Internationally, the primary healthcare nurse practitioner (PHCNP) role has been examined across countries and healthcare settings (e.g., long-term care, primary care, home care) to understand how PHCNPs provide care.¹⁻⁴ PHCNPs are nurses prepared at the graduate level with in-depth clinical expertise who provide primary healthcare services to different populations.⁵ Researchers (e.g., Donald et al., 2014; Martin-Misener et al., 2015; Newhouse et al., 2011; Swan et al., 2015)⁶⁻⁹ have conducted several systematic reviews of PHCNP roles to understand their contributions to patient care. Laurant and colleagues (2009) completed a review of systematic reviews of the effectiveness of nonphysician clinicians including PHCNPs.¹⁰ These researchers identified 18 systematic reviews but noted that an “exact description of the nurses’ roles was lacking in the majority of reviews”.^{10, p. 445} In 2014, Kilpatrick et al. conducted a review of reviews to examine the impact of graduate-prepared nurses (nurse practitioners and clinical nurse specialists) regardless of their clinical practice setting.¹¹ This review of reviews identified four systematic reviews examining 24 outcomes across reviews including 18 patient, one provider and five healthcare system outcomes for the two advanced practice nursing roles in acute and primary care.¹¹ Internationally, system-level dimensions have consistently been identified in the delivery of safe, efficient and effective primary healthcare (PHC),¹²⁻¹⁴ among them, access, comprehensiveness, continuity of care, coordination of care, equity, integration of care, and patient-centeredness. A recent review of systematic reviews of PHC quality indicators identified 727 quality indicators where almost 75% of the indicators focused on process indicators (e.g., treatment).¹⁵ This umbrella review highlighted that subsequent reviews needed to identify the measurement characteristics of quality indicators (e.g., denominator and calculation method of a quality indicator) to capture the contributions of PHC providers. In addition, workforce data to measure the contributions of non-physician providers including PCHNPs is needed globally.^{16, 17} Internationally, PHCNP roles are expanding into new areas of practice to support the delivery of patient-centered PHC. An important gap remains in identifying indicators that have been used to document the contributions of PHCNPs across settings. Thus, to understand PHCNP contributions to patient care and synthesize the available evidence, we propose to build on previous research by conducting a review of systematic reviews of studies that incorporates a recognized PHCNP role definition to identify indicators sensitive to PHCNP practice. These findings will inform the evaluation of PHCNP practice. Our research question is: What indicators are sensitive to the practice of primary healthcare nurse practitioners (PHCNPs) from the patient, provider and health system perspectives?

In this paper, we propose to outline the methodology used in the review of systematic reviews. We aim to evaluate and synthesize systematic reviews to identify outcome indicators sensitive to the practice of PHCNPs from the patient, provider and health system perspectives. More specifically,

Objective 1: To assess the quality of systematic reviews of the impact of PHCNP practice from the patient, provider and health system perspectives.

Objective 2: To identify indicators sensitive to the practice of PHCNPs from the patient, provider and health system perspectives.

METHODS

We will conduct an overview of systematic reviews to describe the current state of knowledge about indicators sensitive to PHCNP practice from the patient, provider and health system perspectives.¹⁸ The review protocol was developed using PRISMA-P recommendations of Shamseer et al. (2015).¹⁹

of patients from one care site to another (e.g., hospital to home or to a skilled nursing facility) or from one level of care to another.²³ Some PHCNPs provide services that are a combination of complementary and alternative roles. These will be categorized as mixed roles.

Types of Comparators

Data related to the comparator (i.e., control) group will be extracted to describe the group to which care is compared. Comparator groups can include usual care, care provided by another health care professional (e.g., physicians), best care, or adherence to clinical practice guideline. Data extractors will extract a brief description of the control group.

Types of Outcomes

Outcomes of interest in this review of reviews include any outcome indicator that measures the effectiveness of PHCNPs. These measures include patient (e.g., health status, quality of life, patient satisfaction) or provider (e.g., quality of care, job satisfaction) or health system (e.g., length of hospital stay, rehospitalisation, resource use, costs) outcomes. We will extract data related to effect sizes, and include the actual effect size (i.e., odds ratio, relative risk, mean differences), confidence intervals, level of statistical significance, and the number of studies included in the analysis.¹⁰

Exclusion Criteria

Reviews that were developed to address broad research questions (e.g., literature reviews, scoping reviews, integrative reviews) will be excluded.

Nurse midwives will be excluded from the review of reviews because the regulatory requirements in different countries do not all require these roles to be filled by nurses, and nurse midwife roles are not consistently identified as advanced practice nursing roles across countries.

Reviews will be excluded if PHCNP impact cannot be isolated and is not reported separately from other types of nurses or team members. A list of all excluded reviews will be developed specifying reasons for exclusion.

Database Search

Evidence in approximately half of published reviews is outdated after five years.²⁴ Thus, we will limit our search to 2010 onwards to capture the most up-to-date trends. The following electronic databases will be searched: Allied and Complementary Database (AMED), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Library Database of Systematic Reviews and Controlled Trials Register, Database of Abstracts of Reviews of Effects (DARE), EMBASE, Global Health, Health Economics Evaluation Database (HEED), Health Evidence, HealthStar, Health Systems Evidence, Joanna Briggs Institute, Medline, PDQ-Evidence, Pubmed, and Web of Science. The preliminary search strategies to be adapted for each electronic database are included in Appendix 1. These strategies will be reviewed by an academic librarian. In addition, the reference lists of all relevant reviews will be reviewed.

Outcomes

The primary outcomes of the review of reviews are those that assess patient, provider and health system outcomes directly evaluating PHCNP roles.

These will be examined separately for type of PHCNP role (i.e., complementary, alternative, transition, mixed).

Data Synthesis

Narrative synthesis will be used to summarize the findings. As proposed by Olry de Labry et al. (2017) and Ramalho et al. (2019), outcomes of care provided by PHCNPs will be categorized according to clinical indicators of care quality (e.g., glycated hemoglobin for patients with diabetes), medications prescribed for chronic conditions (process), health promotion (e.g., healthy lifestyle), and illness prevention activities (e.g., influenza vaccination).^{15 31} An iterative process will be used to identify patterns and relationships across reviews and across years that the reviews were conducted.³² Summary tables will be developed to outline the key characteristics of the reviews (e.g., year of publication, countries where primary studies were conducted), outcomes (i.e., patient, provider, health system), level of role substitution (i.e., complementary, alternative, transition, mixed), quality assessment, and findings (positive, negative, nul). A record will be kept of all review-related decisions. No quantitative analyses are planned because of the potential overlap in studies included in the different reviews.¹⁸

Patient and public involvement

This review of systematic reviews was undertaken without patient involvement. Patients were not invited to comment on the study protocol design. Patients were not invited to contribute to the writing nor the editing of this manuscript. An expert patient will be consulted as to how this work may inform patient relevant outcomes or how a patient might interpret results. The results of this work will be disseminated to key stakeholders including decision makers, healthcare professionals and patients via conferences, publications and presentations.

Anticipated Contributions

PHCNPs practice in a wide range of setting and with diverse patient populations, including vulnerable populations.³³ The identification of indicators sensitive to the practice of PHCNPs from the perspective of patients, providers and the healthcare system will allow researchers, clinicians and decision-makers to understand how these providers contribute to outcomes of care. Gaining an understanding of the patient perspective is particularly important in the context of patient centered care and adapting services to the needs of vulnerable populations (e.g., residents in long-term care, patients with mental health conditions or low socio-economic status). Once identified, PHCNPs, other clinicians and decision-makers can track these indicators and determine if PHCNP roles are used optimally to respond to patient care needs. Using these indicators, subsequent research can be undertaken to support more rigorous economic evaluations of these roles, an important gap in the current literature.^{34 35}

Ethics and dissemination

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321 No ethical approval is required for the study. The data used in the study will be abstracted from
322 published systematic reviews. Dissemination strategies will include peer-reviewed publication,
323 conference presentations, and presentations to key stakeholders.
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For peer review only

Acknowledgements

This study was funded by the Le Réseau intersectoriel de recherche en santé de l'Université du Québec (RISUQ) (Project Grant Number 304168 (30416801); Principal investigator: ET). KK and ET are supported by the Fonds de recherche du Québec-Santé (Research Scholar Junior 2 [KK] and Junior 1 [ET]) salary awards.

Contributors

KK, ET, MCC, IS, NB, JH, GSL, MJ, RA made substantial contributions to study conception and design. All authors were involved in drafting the manuscript, and making revisions for critical intellectual content. All authors gave final approval of the version to be published.

Funding

Le Réseau intersectoriel de recherche en santé de l'Université du Québec (RISUQ) (Project Grant Number: 304168 (30416801); Principal investigator: ET). The funder played no role in: study design and interpretation; development of the manuscript.

Competing interests

We declare no competing interests.

Ethical approval

Not applicable: Data extracted from published articles.

Data sharing

Datasets used and analyzed in the present study are available from corresponding author Kelley Kilpatrick upon reasonable request.

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Appendix 1: Preliminary search strategies for published literature.

- Title:** Identifying Indicators Sensitive to Primary Healthcare Nurse Practitioner Practice: A Review of Systematic Reviews
- Question:** What indicators are sensitive to the practice of primary healthcare nurse practitioners (PHCNPs) from the patient, provider and health system perspectives?
- Aim:** To evaluate and synthesize systematic reviews to identify outcome indicators sensitive to the practice of primary PHCNPs from the patient, provider and health system perspectives.
- Search Strategy:**
- P:** Patients of any age, groups or communities receiving care from PHCNPs in all types (e.g., teaching and non-teaching, public and private), sizes (e.g., small, medium, large) and locations (e.g., rural and urban) of community or care agencies (e.g., long-term care, primary care practices, home care).
= Search strategy concept 1: Primary Healthcare.
- I:** Care provided by PHCNPs in all sectors.
= Search strategy concept 2: Advanced Practice Nursing.
- C:** Data related to the comparator (i.e., control) group will be extracted to describe the group to which care is compared. Comparator groups can include usual care, care provided by another health care professional (e.g., physicians), best care, or adherence to clinical practice guideline.
- O:** Any outcome indicator that measures the effectiveness of PHCNPs. These measures include patient (e.g., health status, quality of life, patient satisfaction) or provider (e.g., quality of care, job satisfaction) or health system (e.g., length of hospital stay, rehospitalisation, resource use, costs) outcomes.
= Search strategy concept 3: Outcomes, comprised of 6 sub-concepts: 1) Quality/ Best practice; 2) Promotion; 3) Prevention; 4) Indicators; 5) Access; 6) Equity.
- S:** All relevant published and unpublished systematic reviews that were reported from 2010 and onwards with no restrictions on jurisdiction or language.
= Search strategy concept 4. NB: This component of the search strategy is based on part of the CADTH hedge for systematic reviews and meta-analyses (<https://www.cadth.ca/resources/finding-evidence/strings-attached-cadths-database-search-filters#syst>) combined with the hedge developed by Lunny C. et al. for overviews of reviews (Journal of Clinical Epidemiology 2016; 74: 107-118).

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42 "Routine diagnostic testing"[tiab] OR
43 "economic evaluation"[tiab] OR
44 "economic evaluations"[tiab] OR
45 "economic analysis"[tiab] OR
46 "economic analyses"[tiab] OR
47 "Emergency Service"[tiab] OR
48 "Emergency Services"[tiab] OR
49 "Glycated Hemoglobin A"[tiab] OR
50 "Glycated Haemoglobin A"[tiab] OR
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"Guideline Adherence"[tiab] OR
 "HbA1C"[tiab] OR
 "high-density lipoprotein"[tiab] OR
 "high density lipoprotein"[tiab] OR
 "hdl"[tiab] OR
 "healthcare"[tiab] OR
 "health-care"[tiab] OR
 "health care"[tiab] OR
 "indicator"[tiab] OR
 "indicators"[tiab] OR
 "Health Planning"[tiab] OR
 "Health Plannings"[tiab] OR
 "Health Resource"[tiab] OR
 "Health Resources"[tiab] OR
 "Health Service"[tiab] OR
 "Health Services"[tiab] OR
 "Health status indicator"[tiab] OR
 "Health status indicators"[tiab] OR
 "Health status"[tiab] OR
 "hospital admission"[tiab] OR
 "hospital admissions"[tiab] OR
 "hospital referral"[tiab] OR
 "hospital referrals"[tiab] OR
 "Hypertension"[tiab] OR
 "Job Satisfaction"[tiab] OR
 "low-density lipoprotein"[tiab] OR
 "low density lipoprotein"[tiab] OR
 "ldl"[tiab] OR
 "Lipid profile"[tiab] OR
 "Lipid profiles"[tiab] OR
 "Manpower"[tiab] OR
 "Mortality"[tiab] OR
 "Mortalities"[tiab] OR
 "Death"[tiab] OR
 "Deaths"[tiab] OR
 "Outcome Assessment"[tiab] OR
 "Outcome Assessments"[tiab] OR
 Healthcare process assessment[tiab] OR
 Healthcare process assessments[tiab] OR
 Health care process assessment[tiab] OR
 Health care process assessments[tiab] OR
 Health-care process assessment[tiab] OR
 Health-care process assessments[tiab] OR
 "Pain"[tiab] OR
 "Pains"[tiab] OR
 "Patient Satisfaction"[tiab] OR
 "Personal Satisfaction"[tiab] OR
 "prefer"[tiab] OR

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"preferred"[tiab] OR
"preference"[tiab] OR
"preferences"[tiab] OR
"Prescribe"[tiab] OR
"Prescribed"[tiab] OR
"prescription"[tiab] OR
"prescriptions"[tiab] OR
"Process of care"[tiab] OR
"Processes of care"[tiab] OR
"Professional Role"[tiab] OR
"Professional Roles"[tiab] OR
"quality indicator"[tiab] OR
"quality indicators"[tiab] OR
"Quality of Health Care"[tiab] OR
"Quality of Health-Care"[tiab] OR
"Quality of Healthcare"[tiab] OR
"Health Care Quality"[tiab] OR
"Health-Care Quality"[tiab] OR
"Healthcare Quality"[tiab] OR
"Quality of life"[tiab] OR
"QOL"[tiab] OR
"Health-related quality of life"[tiab] OR
"Health related quality of life"[tiab] OR
"HRQOL"[tiab] OR
"Consultation"[tiab] OR
"Consultations"[tiab] OR
"Referral"[tiab] OR
"Referrals"[tiab] OR
"return visit"[tiab] OR
"return visits"[tiab] OR
"return appointment"[tiab] OR
"return appointments"[tiab] OR
"follow-up visit"[tiab] OR
"follow-up visits"[tiab] OR
"follow up visit"[tiab] OR
"follow up visits"[tiab] OR
"follow-up appointment"[tiab] OR
"follow-up appointments"[tiab] OR
"Follow up appointment"[tiab] OR
"Follow up appointments"[tiab] OR
"satisfaction"[tiab] OR
"satisfied"[tiab] OR
"satisfactory"[tiab] OR
"Task Analysis"[tiab] OR
"Task Analyses"[tiab] OR
"Task Performance"[tiab] OR
"Treatment Compliance"[tiab] OR
"Treatment compliant"[tiab] OR

"treatment-compliant"[tiab] OR
 "Treatment Adherence"[tiab] OR
 "treatment adherent"[tiab] OR
 "treatment-adherent"[tiab] OR
 "Wellness"[tiab]
 OR
 "Anthropometry"[MH] OR
 "Body Weight"[MH] OR
 "Culturally Competent Care"[MH] OR
 "diet"[MH] OR
 "Diet, Food, and Nutrition"[MH] OR
 "Exercise"[MH] OR
 "Health Education"[MH] OR
 "Health Promotion"[MH] OR
 "Healthy Lifestyle"[MH] OR
 "Mental Health"[MH] OR
 "Nutrition Assessment"[MH] OR
 "Nutritional Status"[MH] OR
 "poverty"[MH] OR
 "Preventive Health Services"[MH] OR
 "Smoking Cessation"[MH] OR
 "Smoking Prevention"[MH] OR
 "Smoking"[MH] OR
 "Teaching"[MH] OR
 "Tobacco Smoke Pollution"[MH] OR
 "Tobacco Use"[MH] OR
 "Condition specific"[tiab] OR
 "Condition-specific"[tiab] OR
 "physical activity"[tiab] OR
 "anthropometric"[tiab] OR
 "anthropometrics"[tiab] OR
 "anthropometrical"[tiab] OR
 "anthropometrically"[tiab] OR
 "Anthropometry"[tiab] OR
 "Body Weight"[tiab] OR
 "Culturally Competent Care"[tiab] OR
 "Culturally-competent care"[tiab] OR
 "culturally diverse"[tiab] OR
 "culturally-diverse"[tiab] OR
 "Diet"[tiab] OR
 "Diets"[tiab] OR
 "Dietary"[tiab] OR
 "Dietetics"[tiab] OR
 "Dietetical"[tiab] OR
 "Dietetically"[tiab] OR
 "Food regimen"[tiab] OR
 "Food regimens"[tiab] OR
 "Dietary regimen"[tiab] OR

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1
2
3 "Dietary regimens"[tiab] OR
4 "Dietary restriction"[tiab] OR
5 "Dietary restrictions"[tiab] OR
6 "emotional health"[tiab] OR
7 "Exercise"[tiab] OR
8 "Health Education"[tiab] OR
9 "Health Promotion"[tiab] OR
10 "promotion of health"[tiab] OR
11 "healthy habit"[tiab] OR
12 "healthy habits"[tiab] OR
13 "Lifestyle"[tiab] OR
14 "Life-style"[tiab] OR
15 "Life style"[tiab] OR
16 Healthy life habit[tiab] OR
17 Healthy life habits[tiab] OR
18 "healthy living"[tiab] OR
19 "stress level"[tiab] OR
20 "stress levels"[tiab] OR
21 "low income"[tiab] OR
22 "low-income"[tiab] OR
23 "Mental Health"[tiab] OR
24 "Nutrition Assessment"[tiab] OR
25 "Nutrition"[tiab] OR
26 "Nutritional Status"[tiab] OR
27 "nutritional"[tiab] OR
28 "poverty"[tiab] OR
29 "socioeconomic status"[tiab] OR
30 "socio-economic status"[tiab] OR
31 "Preventive Health Service"[tiab] OR
32 "Preventive Health Services"[tiab] OR
33 "Health prevention"[tiab] OR
34 "Promotion"[tiab] OR
35 "second-hand smoke"[tiab] OR
36 "second hand smoke"[tiab] OR
37 "Smoke"[tiab] OR
38 "Smokes"[tiab] OR
39 "Smoked"[tiab] OR
40 "Smoker"[tiab] OR
41 "Smokers"[tiab] OR
42 "Smoking Cessation"[tiab] OR
43 "Smoking Prevention"[tiab] OR
44 "Quit smoking"[tiab] OR
45 "Quitting smoking"[tiab] OR
46 "Stop smoking"[tiab] OR
47 "Stopping smoking"[tiab] OR
48 "Smoking"[tiab] OR
49 "Teach"[tiab] OR
50 "Taught"[tiab] OR
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"Teaching"[tiab] OR
 "Tobacco Use"[tiab] OR
 "Weight"[tiab]
 OR
 "Immunization"[MH] OR
 "Maternal Health Services"[MH] OR
 "Primary Prevention"[MH] OR
 "Secondary Prevention"[MH] OR
 "Sexually Transmitted Diseases"[MH] OR
 "Vaccination"[MH] OR
 "Pediatrics"[MH] OR
 "Child Development"[MH] OR
 "Human Development"[MH] OR
 "Adolescent"[MH] OR
 "Immunization"[tiab] OR
 "Immunisation"[tiab] OR
 "Immunize"[tiab] OR
 "Immunizes"[tiab] OR
 "Immunized"[tiab] OR
 "Immunise"[tiab] OR
 "Immunises"[tiab] OR
 "Immunised"[tiab] OR
 "laboratory test"[tiab] OR
 "Maternal Health Service"[tiab] OR
 "Maternal Health Services"[tiab] OR
 "pregnancy"[tiab] OR
 "Prevent"[tiab] OR
 "Prevents"[tiab] OR
 "Prevented"[tiab] OR
 "Prevention"[tiab] OR
 "Primary Prevention"[tiab] OR
 "Secondary Prevention"[tiab] OR
 "sexually transmitted"[tiab] OR
 "sexually-transmitted"[tiab] OR
 "Vaccination"[tiab] OR
 "Vaccine"[tiab] OR
 "Vaccines"[tiab] OR
 "Vaccinate"[tiab] OR
 "Vaccinates"[tiab] OR
 "Vaccinated"[tiab] OR
 "Pediatric"[tiab] OR
 "Pediatrics"[tiab] OR
 "Paediatric"[tiab] OR
 "Paediatrics"[tiab] OR
 "Childhood development"[tiab] OR
 "Child development"[tiab] OR
 "Childhood"[tiab] OR
 "Human development"[tiab] OR

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1
2
3 "healthy development"[tiab] OR
4 "youth"[tiab] OR
5 "youths"[tiab] OR
6 "adolescence"[tiab]
7 "adolescent"[tiab]
8 "adolescents"[tiab]
9
10 OR
11 "Acute Coronary Syndrome"[MH] OR
12 "Adjustment Disorders"[MH] OR
13 "Alcohol Drinking"[MH] OR
14 "Alcohol-Related Disorders"[MH] OR
15 "Anxiety Disorders"[MH] OR
16 "Blood Glucose"[MH] OR
17 "Cancer Survivors"[MH] OR
18 "Cardiovascular Diseases"[MH] OR
19 "Coronary Disease"[MH] OR
20 "Depressive Disorder"[MH] OR
21 "Diabetes Mellitus"[MH] OR
22 "diabetes, gestational"[MH] OR
23 "Diabetic Foot"[MH] OR
24 "Health Care Evaluation Mechanisms"[MH] OR
25 "Health Information Interoperability"[MH] OR
26 "Heart Failure"[MH] OR
27 "Ischemia"[MH] OR
28 "Mental Disorders"[MH] OR
29 "Neoplasms"[MH] OR
30 "pain management"[MH] OR
31 "pain"[MH] OR
32 "Papanicolaou Test"[MH] OR
33 "Patient Reported Outcome Measures"[MH] OR
34 "Physical Examination"[MH] OR
35 "Pulmonary Disease, Chronic Obstructive"[MH] OR
36 "Quality Indicators, Health Care"[MH] OR
37 "Rehabilitation"[MH] OR
38 "Self care"[MH] OR
39 "Self Efficacy"[MH] OR
40 "Stroke"[MH] OR
41 "Dementia"[MH] OR
42 "Acute Coronary Syndrome"[tiab] OR
43 "Acute Coronary Syndromes"[tiab] OR
44 "ACS"[tiab] OR
45 "ACs"[tiab] OR
46 "Adjustment Disorder"[tiab] OR
47 "Adjustment Disorders"[tiab] OR
48 "Alcohol Drinking"[tiab] OR
49 "Alcohol-Related Disorder"[tiab] OR
50 "Alcohol-Related Disorders"[tiab] OR
51 "Alcohol Related Disorder"[tiab] OR
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"Alcohol Related Disorders"[tiab] OR
"Alcohol consumption"[tiab] OR
"Alcoholic"[tiab] OR
"Alcoholism"[tiab] OR
"Anxiety Disorder"[tiab] OR
"Anxiety Disorders"[tiab] OR
"Anxiety"[tiab] OR
"anxious"[tiab] OR
"Blood Glucose"[tiab] OR
"Blood sugar"[tiab] OR
"Blood sugars"[tiab] OR
"Cancer survivor"[tiab] OR
"Cancer survivors"[tiab] OR
"Cancer survival"[tiab] OR
"Cancer"[tiab] OR
"Cardiovascular disease"[tiab] OR
"Cardiovascular diseases"[tiab] OR
"CVD"[tiab] OR
"CVDs"[tiab] OR
"complication"[tiab] OR
"complications"[tiab] OR
"copd"[tiab] OR
"Chronic Obstructive Pulmonary Disease"[tiab] OR
"Chronic Obstructive Pulmonary Disorder"[tiab] OR
"Chronic Obstructive Pulmonary Disorders"[tiab] OR
"Coronary Disease"[tiab] OR
"Coronary Diseases"[tiab] OR
"Coronary artery disease"[tiab] OR
"Coronary artery diseases"[tiab] OR
"depression"[tiab] OR
"depressed"[tiab] OR
"depressive"[tiab] OR
"Depressive Disorder"[tiab] OR
"Depressive Disorders"[tiab] OR
"Diabetes Mellitus"[tiab] OR
"Diabetes"[tiab] OR
"Diabetic Foot"[tiab] OR
"foot complication"[tiab] OR
"foot complications"[tiab] OR
"gestational diabetes"[tiab] OR
"glycaemic"[tiab] OR
"glycaemia"[tiab] OR
"glycemic"[tiab] OR
"glycemia"[tiab] OR
"HealthCare Evaluation Mechanism"[tiab] OR
"HealthCare Evaluation Mechanisms"[tiab] OR
"Health Care Evaluation Mechanism"[tiab] OR
"Health Care Evaluation Mechanisms"[tiab] OR

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1
2
3 "Health-Care Evaluation Mechanism"[tiab] OR
4 "Health-Care Evaluation Mechanisms"[tiab] OR
5 "Health Information Interoperability"[tiab] OR
6 Interoperability of Health Information[tiab] OR
7 Inter-operability of Health Information[tiab] OR
8 "Interoperability"[tiab] OR
9 "Inter-operability"[tiab] OR
10 "Interoperable"[tiab] OR
11 "Inter-operable"[tiab] OR
12 "Heart Failure"[tiab] OR
13 "Congestive heart failure"[tiab] OR
14 "CHF"[tiab] OR
15 "Ischemia"[tiab] OR
16 "Ischemias"[tiab] OR
17 "ischemic stroke"[tiab] OR
18 "ischemic strokes"[tiab] OR
19 "Ischaemia"[tiab] OR
20 "Ischaemias"[tiab] OR
21 "ischaemic stroke"[tiab] OR
22 "ischaemic strokes"[tiab] OR
23 "Mental Disorder"[tiab] OR
24 "Mental Disorders"[tiab] OR
25 "mental health"[tiab] OR
26 "mentally healthy"[tiab] OR
27 "Mental illness"[tiab] OR
28 "Mental illnesses"[tiab] OR
29 "Mentally ill"[tiab] OR
30 "Neoplasm"[tiab] OR
31 "Neoplasms"[tiab] OR
32 "Oncology"[tiab] OR
33 "Oncologist"[tiab] OR
34 "Oncologists"[tiab] OR
35 "pain management"[tiab] OR
36 "management of pain"[tiab] OR
37 "managing pain"[tiab] OR
38 "managed pain"[tiab] OR
39 "pain"[tiab] OR
40 "pains"[tiab] OR
41 "Pap test"[tiab] OR
42 "Pap tests"[tiab] OR
43 "Papanicolaou Test"[tiab] OR
44 "Papanicolaou Tests"[tiab] OR
45 "Patient Reported Experience Measure"[tiab] OR
46 "Patient Reported Experience Measures"[tiab] OR
47 "Patient Reported Outcome Measure"[tiab] OR
48 "Patient Reported Outcome Measures"[tiab] OR
49 "Patient-Reported Experience Measure"[tiab] OR
50 "Patient-Reported Experience Measures"[tiab] OR
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"Patient-Reported Outcome Measure"[tiab] OR
 "Patient-Reported Outcome Measures"[tiab] OR
 "Physical Exam"[tiab] OR
 "Physical Exams"[tiab] OR
 "Physical Examination"[tiab] OR
 "Physical Examinations"[tiab] OR
 "PREM"[tiab] OR
 "PREMs"[tiab] OR
 "PROM"[tiab] OR
 "PROMs"[tiab] OR
 "promotion"[tiab] OR
 "psychosocial"[tiab] OR
 "psycho social"[tiab] OR
 "psycho-social"[tiab] OR
 "Health Care Quality Indicator"[tiab]
 "Health Care Quality Indicators"[tiab]
 "Healthcare Quality Indicator"[tiab]
 "Healthcare Quality Indicators"[tiab]
 "Health-care Quality Indicator"[tiab]
 "Health-care Quality Indicators"[tiab]
 "Quality indicator of health care"[tiab]
 "Quality indicators of health care"[tiab]
 "Quality indicator of healthcare"[tiab]
 "Quality indicators of healthcare"[tiab]
 "Quality indicator of health-care"[tiab]
 "Quality indicators of health-care"[tiab]
 "Quality Indicator"[tiab] OR
 "Quality Indicators"[tiab] OR
 "Rehabilitation"[tiab] OR
 "self care"[tiab] OR
 "Self Efficacy"[tiab] OR
 "self-care"[tiab] OR
 "self-efficacy"[tiab] OR
 "Stroke"[tiab] OR
 "Strokes"[tiab] OR
 "cerebrovascular accident"[tiab] OR
 "cerebrovascular accidents"[tiab] OR
 "CVA"[tiab] OR
 "CVAs"[tiab] OR
 "Dementia"[tiab] OR
 "Dementias"[tiab]
 OR
 "Allied Health Personnel"[MH] OR
 "ambulatory care"[MH] OR
 "Ambulatory Care Information Systems"[MH] OR
 "Appointments and Schedules"[MH] OR
 "Clinical Competence"[MH] OR
 "Duration of Therapy"[MH] OR

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- 2
- 3 "Education"[MH] OR
- 4 "Educational Measurement"[MH] OR
- 5 "Evidence-Based Practice"[MH] OR
- 6 "Harm Reduction"[MH] OR
- 7 "Health Behavior"[MH] OR
- 8 "Health Care Costs"[MH] OR
- 9
- 10 "Health Care Economics and Organizations"[MH] OR
- 11 "Health Care Facilities, Manpower, and Services"[MH] OR
- 12 "Health Care Quality, Access, and Evaluation"[MH] OR
- 13 "Health Knowledge, Attitudes, Practice"[MH] OR
- 14 "Health Plan Implementation"[MH] OR
- 15 "Health Services Accessibility"[MH] OR
- 16 "Healthcare Disparities"[MH] OR
- 17 "Hospital Shared Services"[MH] OR
- 18 "House Calls"[MH] OR
- 19 "Length of Stay"[MH] OR
- 20 "Office Visits"[MH] OR
- 21 "Patient Acceptance of Health Care"[MH] OR
- 22 "patient admission"[MH] OR
- 23 "Patient Advocacy"[MH] OR
- 24 "Prescriptions"[MH] OR
- 25 "Referral and Consultation"[MH] OR
- 26 "Training Support"[MH] OR
- 27 "Universal Health Care"[MH] OR
- 28 "Allied Health Personnel"[tiab] OR
- 29 "Access to care"[tiab] OR
- 30 "care access"[tiab] OR
- 31 "Access to health-care"[tiab] OR
- 32 "Access to healthcare"[tiab] OR
- 33 "Access to health care"[tiab] OR
- 34 "Health Personnel"[tiab] OR
- 35 "ambulatory care"[tiab] OR
- 36 "Ambulatory Care Information System"[tiab] OR
- 37 "Ambulatory Care Information Systems"[tiab] OR
- 38 "Schedule"[tiab] OR
- 39 "Schedules"[tiab] OR
- 40 "Scheduled"[tiab] OR
- 41 "Appointment"[tiab] OR
- 42 "Appointments"[tiab] OR
- 43 "Clinical Competence"[tiab] OR
- 44 "Clinical Competency"[tiab] OR
- 45 "Clinical Competencies"[tiab] OR
- 46 "Cost outcome"[tiab] OR
- 47 "Cost outcomes"[tiab] OR
- 48 "Cost"[tiab] OR
- 49 "Costs"[tiab] OR
- 50 "direct cost"[tiab] OR
- 51 "direct costs"[tiab] OR
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"indirect cost"[tiab] OR
 "indirect costs"[tiab] OR
 "Duration of Therapy"[tiab] OR
 "Therapy duration"[tiab] OR
 "Therapy durations"[tiab] OR
 "Length of therapy"[tiab] OR
 "Therapy length"[tiab] OR
 "Therapy lengths"[tiab] OR
 "Education"[tiab] OR
 "Educational Measurement"[tiab] OR
 "Educational Measurements"[tiab] OR
 "Evidence-based intervention"[tiab] OR
 "Evidence-based interventions"[tiab] OR
 "Evidence-based policy"[tiab] OR
 "Evidence-based policies"[tiab] OR
 "Evidence-Based Practice"[tiab] OR
 "Evidence-Based Practices"[tiab] OR
 "Harm Reduction"[tiab] OR
 "Reduction of harm"[tiab] OR
 "Harm prevention"[tiab] OR
 "Prevention of harm"[tiab] OR
 "Health Behavior"[tiab] OR
 "Health Behaviors"[tiab] OR
 "Health Behaviour"[tiab] OR
 "Health Behaviours"[tiab] OR
 "HealthCare Cost"[tiab] OR
 "HealthCare Costs"[tiab] OR
 "Health Care Cost"[tiab] OR
 "Health Care Costs"[tiab] OR
 "Health-Care Cost"[tiab] OR
 "Health-Care Costs"[tiab] OR
 "HealthCare Organization"[tiab] OR
 "HealthCare Organizations"[tiab] OR
 "Health Care Organization"[tiab] OR
 "Health Care Organizations"[tiab] OR
 "Health-Care Organization"[tiab] OR
 "Health-Care Organizations"[tiab] OR
 "HealthCare Economics"[tiab] OR
 "Health Care Economics"[tiab] OR
 "Health-Care Economics"[tiab] OR
 "HealthCare Facility"[tiab] OR
 "HealthCare Facilities"[tiab] OR
 "Health-Care Facility"[tiab] OR
 "Health-Care Facilities"[tiab] OR
 "Health Care Facility"[tiab] OR
 "Health Care Facilities"[tiab] OR
 "Health-Care Manpower"[tiab] OR
 "Health Care Manpower"[tiab] OR

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1
2
3 "HealthCare Service"[tiab] OR
4 "HealthCare Services"[tiab] OR
5 "Health-Care Service"[tiab] OR
6 "Health-Care Services"[tiab] OR
7 "Health Care Service"[tiab] OR
8 "Health Care Services"[tiab] OR
9 "HealthCare Quality"[tiab] OR
10 "Health-Care Quality"[tiab] OR
11 "Health Care Quality"[tiab] OR
12 "Quality HealthCare"[tiab] OR
13 "Quality Health-Care"[tiab] OR
14 "Quality Health Care"[tiab] OR
15 "Health Care Access"[tiab] OR
16 "Health-Care Access"[tiab] OR
17 "HealthCare Access"[tiab] OR
18 "HealthCare Evaluation"[tiab] OR
19 "HealthCare Evaluations"[tiab] OR
20 "Health Care Evaluation"[tiab] OR
21 "Health Care Evaluations"[tiab] OR
22 "Health-Care Evaluation"[tiab] OR
23 "Health-Care Evaluations"[tiab] OR
24 "Evaluation of Health Care"[tiab] OR
25 "Evaluation of Health-Care"[tiab] OR
26 "Evaluation of HealthCare"[tiab] OR
27 "Evaluations of Health Care"[tiab] OR
28 "Evaluations of Health-Care"[tiab] OR
29 "Evaluations of HealthCare"[tiab] OR
30 "Evaluate Health Care"[tiab] OR
31 "Evaluate Health-Care"[tiab] OR
32 "Evaluate HealthCare"[tiab] OR
33 "Evaluates Health Care"[tiab] OR
34 "Evaluates Health-Care"[tiab] OR
35 "Evaluates HealthCare"[tiab] OR
36 "Evaluated Health Care"[tiab] OR
37 "Evaluated Health-Care"[tiab] OR
38 "Evaluated HealthCare"[tiab] OR
39 "Evaluating Health Care"[tiab] OR
40 "Evaluating Health-Care"[tiab] OR
41 "Evaluating HealthCare"[tiab] OR
42 "Health Knowledge"[tiab] OR
43 "Knowledge of Health"[tiab] OR
44 "Health Attitude"[tiab] OR
45 "Health Attitudes"[tiab] OR
46 "Health Plan Implementation"[tiab] OR
47 "Health Resource Utilization"[tiab] OR
48 "Utilization of Health Resources"[tiab] OR
49 "Health Resource Utilisation"[tiab] OR
50 "Utilisation of Health Resources"[tiab] OR
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"Health Resource Usage"[tiab] OR
 "Usage of health Resources"[tiab] OR
 "Health Resource Usages"[tiab] OR
 "Usages of Health Resources"[tiab] OR
 "Health Service Accessibility"[tiab] OR
 "Health Services Accessibility"[tiab] OR
 "Accessibility of Health Services"[tiab] OR
 "Access to Health Services"[tiab] OR
 "Healthcare Disparity"[tiab] OR
 "Health Care Disparity"[tiab] OR
 "Health-Care Disparity"[tiab] OR
 "Healthcare Disparities"[tiab] OR
 "Health Care Disparities"[tiab] OR
 "Health-Care Disparities"[tiab] OR
 "healthy environment"[tiab] OR
 "healthy environments"[tiab] OR
 "Hospital Shared Service"[tiab] OR
 "Hospital Shared Services"[tiab] OR
 "House Call"[tiab] OR
 "House Calls"[tiab] OR
 "Length of Stay"[tiab] OR
 "Lengths of Stay"[tiab] OR
 "LOS"[tiab] OR
 "Office Visit"[tiab] OR
 "Office Visits"[tiab] OR
 "Patient Acceptance"[tiab] OR
 "patient admission"[tiab] OR
 "patient admissions"[tiab] OR
 "Admission of patient"[tiab] OR
 "Admission of patients"[tiab] OR
 "Patient Advocacy"[tiab] OR
 "Prescription"[tiab] OR
 "Prescriptions"[tiab] OR
 "Consultation"[tiab] OR
 "Consultations"[tiab] OR
 "Referral"[tiab] OR
 "Referrals"[tiab] OR
 "return visit"[tiab] OR
 "return visits"[tiab] OR
 "Training Support"[tiab] OR
 "Universal Health-Care"[tiab] OR
 "Universal Health Care"[tiab] OR
 "Universal HealthCare"[tiab] OR
 "unplanned"[tiab]
 OR
 "Delivery of Health Care"[MH] OR
 "Frailty"[MH] OR
 "Global Health"[MH] OR

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1
2
3 "Health Equity"[MH] OR
4 "Health Literacy"[MH] OR
5 "Health Status Disparities"[MH] OR
6 "Healthcare Disparities"[MH] OR
7 "Income"[MH] OR
8 "Insurance Coverage"[MH] OR
9 "International Classification of Functioning, Disability and Health"[MH] OR
10 "Marital Status"[MH] OR
11 "Minority Health"[MH] OR
12 "Oceanic Ancestry Group"[MH] OR
13 "Patient Selection"[MH] OR
14 "Population Dynamics"[MH] OR
15 "Population Groups"[MH] OR
16 "Poverty Areas"[MH] OR
17 "Refusal to Treat"[MH] OR
18 "Religion"[MH] OR
19 "Social Discrimination"[MH] OR
20 "Socioeconomic Factors"[MH] OR
21 "Treatment Failure"[MH] OR
22 "Aboriginal"[tiab] OR
23 "Communication Barriers"[tiab] OR
24 "Delivery of HealthCare"[tiab] OR
25 "Delivery of Health Care"[tiab] OR
26 "Delivery of Health-Care"[tiab] OR
27 "HealthCare Delivery"[tiab] OR
28 "Health Care Delivery"[tiab] OR
29 "Health-Care Delivery"[tiab] OR
30 "Disability Evaluation"[tiab] OR
31 "Discrimination"[tiab] OR
32 "equity"[tiab] OR
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35 "Health Equity"[tiab] OR
36 "Health Literacy"[tiab] OR
37 "Health Status Disparity"[tiab] OR
38 "Health Status Disparities"[tiab] OR
39 "Income"[tiab] OR
40 "Incomes"[tiab] OR
41 "Insurance coverage"[tiab] OR
42 "Insurance coverages"[tiab] OR
43 "Insurance cover"[tiab] OR
44 "Insurance covers"[tiab] OR
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46 "International Classification of Functioning, Disability and Health"[tiab] OR
47 "inequal"[tiab] OR
48 "inequality"[tiab] OR
49 "inequalities"[tiab] OR
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 "Sexual Orientations"[tiab] OR
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 "Social Discriminations"[tiab] OR
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Date of last revision: October 22, 2020

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(evidence[ti] and (reviews[ti] or meta-analyses[ti]))

Appendix 2: Preliminary search strategies for unpublished literature

CADTH Information Services, Grey Matters: a practical tool for searching health-related grey literature

<https://www.cadth.ca/resources/finding-evidence/grey-matters>

Organization for Economic Co-operation and Development (OECD)

<http://www.oecd.org/>

ProQuest Dissertation and Theses

<https://about.proquest.com/products-services/pqdtglobal.html>

World Health Organization

<https://www.who.int/>

00 - GENERAL, MULTIDISCIPLINARY

East View Information Services

<http://www.eastview.com>

GreyNet International, Grey literature Network Service

<http://www.greynet.org>

Grijze Literatuur in Nederland, GLIN

<http://www.publiekwijzer.nl/bestanden.php?id=zoeknaar&db=3.2>

Italian Grey Literature Database

<http://polarcnr.area.ge.cnr.it/cataloghi/bice/index.php?type=Grigia>

National Repository of Grey Literature, NRGL

<http://www.nusl.cz/?lang=en>

OpenGrey Repository, System for Information on Grey Literature in Europe

<http://www.opengrey.eu>

[NEW ENTRY](#)

06 - BIOLOGICAL & MEDICAL SCIENCES

Cochrane Reviews

<http://www.cochrane.org/reviews/en/mr000010.html>

Doctor of Nursing Practice, DNP

<http://libguides.rutgers.edu/content.php?pid=449135&sid=3680427>

Duke University Medical Center Library

<http://guides.mcclibrary.duke.edu/greyliterature>

Gray Literature in Health Research

<http://researchguides.dml.georgetown.edu/content.php?pid=352972&sid=2887419>

Grey Horizon, A Grey Literature Current Awareness Tool in Cancer Care

<http://grey-horizon.blogspot.nl/>

Grey Literature for Dentistry

<http://guides.library.utoronto.ca/dentistry>

Grey Literature in the Health Sciences

<http://guides.library.upenn.edu/healthgreylit?hs=a>

Grey Literature Report - New York Academy of Medicine

<http://www.greylit.org>

HealthKnowledge

<http://www.healthknowledge.org.uk/public-health-textbook/research-methods/1a-epidemiology/grey-literature>

Lister Hill Library of the Health Sciences

<http://libguides.lhl.uab.edu/GreyLit>

Mesothelioma Guide

<https://www.mesotheliomaguide.com/mesothelioma/causes/asbestos-and-cancer/>

Mesothelioma.net

<http://www.mesothelioma.net>

Norris Medical Library - Grey Literature Resource Guide

http://norris.usc.libguides.com/grey_literature

Nursing and Allied Health Resource Section, NAHRS

<http://sites.google.com/site/nahrsnursingresources/Home/grey-literature-1>

Social Policy and Practice

<http://bathhealthnews.blogspot.com/2009/11/new-database-social-policy-practice.html>

Health Sciences Library and Informatics Center

<http://libguides.health.unm.edu/content.php?pid=200149>

University of Waterloo

http://www.lib.uwaterloo.ca/discipline/health_kin/grey_literature.html

PRISMA-P 2015 Checklist

This checklist has been adapted for use with protocol submissions to *Systematic Reviews* from Table 3 in Moher D et al: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews* 2015 4:1

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
ADMINISTRATIVE INFORMATION					
Title					
Identification	1a	Identify the report as a protocol of a systematic review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	<input type="checkbox"/>	<input type="checkbox"/>	NA
Registration	2	If registered, provide the name of the registry (e.g., PROSPERO) and registration number in the Abstract	<input checked="" type="checkbox"/>	<input type="checkbox"/>	102
Authors					
Contact	3a	Provide name, institutional affiliation, and e-mail address of all protocol authors; provide physical mailing address of corresponding author	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8-69
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	332-335
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	<input type="checkbox"/>	<input type="checkbox"/>	NA
Support					
Sources	5a	Indicate sources of financial or other support for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	337-340
Sponsor	5b	Provide name for the review funder and/or sponsor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	337-340
Role of sponsor/funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	<input checked="" type="checkbox"/>	<input type="checkbox"/>	337-340
INTRODUCTION					
Rationale	6	Describe the rationale for the review in the context of what is already known	<input checked="" type="checkbox"/>	<input type="checkbox"/>	122-151
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	151-163
METHODS					

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
Eligibility criteria	8	Specify the study characteristics (e.g., PICO, study design, setting, time frame) and report characteristics (e.g., years considered, language, publication status) to be used as criteria for eligibility for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	165-231
Information sources	9	Describe all intended information sources (e.g., electronic databases, contact with study authors, trial registers, or other grey literature sources) with planned dates of coverage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	232-251
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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	252-262, Appendix 1
STUDY RECORDS					
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	165-297
Selection process	11b	State the process that will be used for selecting studies (e.g., two independent reviewers) through each phase of the review (i.e., screening, eligibility, and inclusion in meta-analysis)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	165-297
Data collection process	11c	Describe planned method of extracting data from reports (e.g., piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	264-274
Data items	12	List and define all variables for which data will be sought (e.g., PICO items, funding sources), any pre-planned data assumptions and simplifications	<input checked="" type="checkbox"/>	<input type="checkbox"/>	170-178
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	216-222
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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	170-178; 275-279
DATA					
Synthesis	15a	Describe criteria under which study data will be quantitatively synthesized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	286-297
	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 (e.g., I^2 , Kendall's tau)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	286-297
	15c	Describe any proposed additional analyses (e.g., sensitivity or subgroup analyses, meta-regression)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	211-215; 286-297
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	<input checked="" type="checkbox"/>	<input type="checkbox"/>	286-297
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (e.g., publication bias across studies, selective reporting within studies)	<input type="checkbox"/>	<input type="checkbox"/>	NA
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (e.g., GRADE)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	275-279

BMJ Open

Identifying Indicators Sensitive to Primary Healthcare Nurse Practitioner Practice: A Review of Systematic Reviews Protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2020-043213.R2
Article Type:	Protocol
Date Submitted by the Author:	29-Nov-2020
Complete List of Authors:	Kilpatrick, Kelley; McGill University, Ingram School of Nursing, Faculty of Medicine and Health Sciences Tchouaket, Eric; Université du Québec en Outaouais - Sciences infirmières Chouinard, Maud-Christine; Université du Québec à Chicoutimi, Sciences de la santé Savard, Isabelle; McGill University, Ingram School of Nursing, Faculty of Medicine and Health Sciences Bouabdillah, Naima; Université du Québec à Trois-Rivières - Sciences infirmières Houle, Julie; Université du Québec à Trois-Rivières - Sciences infirmières St-Louis, Geneviève; Centre intégré universitaire de santé et de services sociaux de la Mauricie-et-du-Centre-du-Québec, Support and Development of Professional Practices in Nursing and Assistance Care and Infection Prevention Associate Directorate Jabbour, Mira; Centre intégré universitaire de santé et de services sociaux de l'Est-de-l'Île-de-Montréal du Québec, Maisonneuve-Rosemont Hospital Site Atallah, Renee; McGill University, Ingram School of Nursing, Faculty of Medicine and Health Sciences
Primary Subject Heading:	Nursing
Secondary Subject Heading:	Health services research
Keywords:	PRIMARY CARE, Quality in health care < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, STATISTICS & RESEARCH METHODS

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Identifying Indicators Sensitive to Primary Healthcare Nurse Practitioner Practice: A Review of Systematic Reviews Protocol

Kelley Kilpatrick, RN, PhD, Eric Tchouaket, PhD, Maud-Christine Chouinard, RN, PhD, Isabelle Savard, NP, MSc, Naima Bouabdillah, RN, PhD, Julie Houle, RN, PhD, Geneviève St-Louis, RN, Mira Jabbour, RD, MSc, Renée Atallah, MSc

Corresponding author:

Kelley Kilpatrick, RN, PhD

Associate Professor

Susan E. French Chair in Nursing Research and Innovative Practice, Ingram School of Nursing, Faculty of Medicine, McGill University, 680 Sherbrooke Street West, Office 1811, Montreal, Quebec, Canada, H3A 2M7

Tel.: 011-514-398-3416 Email: kelly.kilpatrick@mcgill.ca

Authors' full address:

Eric Nguemeleu Tchouaket, PhD

Associate Professor

Department of Nursing, Université du Québec en Outaouais (UQO), St-Jérôme Campus

5 Saint-Joseph Street, Room J-3204, Saint-Jérôme, Québec, Canada, J7Z 0B7

Tel.: 011-450-530-7616, ext. 4039 Email : eric.tchouaket@uqo.ca

Maud-Christine Chouinard, RN, PhD,

Professor,

Université du Québec à Chicoutimi (UQAC), Département des sciences de la santé (Health Sciences Department),

Bureau V1-1065, 555, boulevard de l'Université, Chicoutimi, Québec, Canada G7H 2B1

Tel : 0-11-418 545-5011 ext.5344 Email : maud-christine_chouinard@uqac.ca

Isabelle Savard, PHCNP, MSc

Doctoral Student,

Ingram School of Nursing, Faculty of Medicine and Health Sciences, McGill University, 680 Sherbrooke Street West, Office 1811, Montreal, Quebec, Canada, H3A 2M7

Tel.: 011- 450 530-7616 , poste 4818 Email: isabelle.savard@uqo.ca

Naima Bouabdillah, RN, PhD,

Professor,

Department of Nursing, Université du Québec à Trois-Rivières

3351, boulevard des Forges, Room 4859, Trois-Rivières, Québec, Canada G9A 5H7

Tel: 1-819-3765011 ext. 3440 Email: Naima.Bouabdillah@uqtr.ca

Julie Houle, RN, PhD,

Professor,

Department of Nursing, Université du Québec à Trois-Rivières,

Scientific director of medical and clinical research at Centre intégré universitaire en santé et services sociaux de la Mauricie et du Centre du Québec (CIUSSS MCQ)

3351, boulevard des Forges, Room 4802, Trois-Rivières, Québec, Canada G9A 5H7

ABSTRACT

Introduction: Primary healthcare nurse practitioners (PHCNPs) practice in a wide range of clinical settings and with diverse patient populations. Several systematic reviews have examined outcomes of PHCNP roles. However, there is a lack of consistency in the definitions used for the PHCNP role across the reviews. The identification of indicators sensitive to PHCNP practice from the perspective of patients, providers and the healthcare system will allow researchers, clinicians and decision-makers to understand how these providers contribute to outcomes of care.

Methods and analysis: A review of systematic reviews is proposed to describe the current state of knowledge about indicators sensitive to PHCNP practice using recognized role definitions. Outcomes of interest include any outcome indicator measuring the effectiveness of PHCNPs. We will limit our search to 2010 onwards to capture the most up-to-date trends. The following electronic databases will be searched: AMED, CINAHL, Cochrane Library Database of Systematic Reviews and Controlled Trials Register, DARE, EMBASE, Global Health, HEED, Health Evidence, HealthStar, Health Systems Evidence, Joanna Briggs Institute, Medline, PDQ-Evidence, Pubmed, and Web of Science. The search strategies will be reviewed by an academic librarian. Reference lists of all relevant publications will be reviewed. Grey literature will be searched from 2010 onwards, and will include: CADTH Information Services, CADTH's Grey Matters tool, OpenGrey, Organization for Economic Co-operation and Development, ProQuest Dissertation and Theses, and World Health Organization. The PROSPERO International Prospective Register of Systematic Reviews will be searched to identify registered review protocols. The review protocol was developed using PRISMA-P recommendations. A narrative synthesis will be used to summarize study findings.

Ethics and dissemination: No ethical approval is required for the study. The data used in the study will be abstracted from published systematic reviews. Dissemination strategies will include peer-reviewed publication, conference presentations, and presentations to key stakeholders.

PROSPERO registration number: CRD42020198182

Word count: 300/300

KEYWORDS: Indicators, nurse practitioner, primary healthcare, review of systematic reviews

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Article Summary

Strengths and Limitations

- Our review of systematic reviews will include a recognized definition for nurse practitioner roles, thereby helping bridge knowledge gaps resulting from the use of inconsistent role definitions that limit research finding generalizability across countries.
- There will be no language restrictions for studies included in the review of systematic reviews.
- No quantitative analyses are planned.
- Because the review focuses on studies that clearly define the nurse practitioner role, the overview may exclude studies that examine nurse practitioner roles but did not provide clear role definitions.

BACKGROUND

Internationally, the primary healthcare nurse practitioner (PHCNP) role has been examined across countries and healthcare settings (e.g., long-term care, primary care, home care) to understand how PHCNPs provide care.¹⁻⁴ PHCNPs are nurses prepared at the graduate level with in-depth clinical expertise who provide primary healthcare services to different populations.⁵ Researchers (e.g., Donald et al., 2014; Martin-Misener et al., 2015; Newhouse et al., 2011; Swan et al., 2015)⁶⁻⁹ have conducted several systematic reviews of PHCNP roles to understand their contributions to patient care. Laurant and colleagues (2009) completed a review of systematic reviews of the effectiveness of nonphysician clinicians including PHCNPs.¹⁰ These researchers identified 18 systematic reviews but noted that an “exact description of the nurses’ roles was lacking in the majority of reviews”.^{10, p. 445} In 2014, Kilpatrick et al. conducted a review of reviews to examine the impact of graduate-prepared nurses (nurse practitioners and clinical nurse specialists) regardless of their clinical practice setting.¹¹ This review of reviews identified four systematic reviews examining 24 outcomes across reviews including 18 patient, one provider and five healthcare system outcomes for the two advanced practice nursing roles in acute and primary care.¹¹ Internationally, system-level dimensions have consistently been identified in the delivery of safe, efficient and effective primary healthcare (PHC),¹²⁻¹⁴ among them, access, comprehensiveness, continuity of care, coordination of care, equity, integration of care, and patient-centeredness. A recent review of systematic reviews of PHC quality indicators identified 727 quality indicators where almost 75% of the indicators focused on process indicators (e.g., treatment).¹⁵ This umbrella review highlighted that subsequent reviews needed to identify the measurement characteristics of quality indicators (e.g., denominator and calculation method of a quality indicator) to capture the contributions of PHC providers. In addition, workforce data to measure the contributions of non-physician providers including PCHNPs is needed globally.^{16, 17} Internationally, PHCNP roles are expanding into new areas of practice to support the delivery of patient-centered PHC. An important gap remains in identifying indicators that have been used to document the contributions of PHCNPs across settings. Thus, to understand PHCNP contributions to patient care and synthesize the available evidence, we propose to build on previous research by conducting a review of systematic reviews of studies that incorporates a recognized PHCNP role definition to identify indicators sensitive to PHCNP practice. These findings will inform the evaluation of PHCNP practice. Our research question is: What indicators are sensitive to the practice of primary healthcare nurse practitioners (PHCNPs) from the patient, provider and health system perspectives?

In this paper, we propose to outline the methodology used in the review of systematic reviews. We aim to evaluate and synthesize systematic reviews to identify outcome indicators sensitive to the practice of PHCNPs from the patient, provider and health system perspectives. More specifically,

Objective 1: To assess the quality of systematic reviews of the impact of PHCNP practice from the patient, provider and health system perspectives.

Objective 2: To identify indicators sensitive to the practice of PHCNPs from the patient, provider and health system perspectives.

METHODS

We will conduct an overview of systematic reviews to describe the current state of knowledge about indicators sensitive to PHCNP practice from the patient, provider and health system perspectives.¹⁸ The review protocol was developed using PRISMA-P recommendations of Shamseer et al. (2015).¹⁹

substituting (usually physicians). Those working in transition roles facilitate the safe and timely transfer of patients from one care site to another (e.g., hospital to home or to a skilled nursing facility) or from one level of care to another.²³ Some PHCNPs provide services that are a combination of complementary and alternative roles. These will be categorized as mixed roles.

Types of Comparators

Data related to the comparator (i.e., control) group will be extracted to describe the group to which care is compared. Comparator groups can include usual care, care provided by another health care professional (e.g., physicians), best care, or adherence to clinical practice guideline. Data extractors will extract a brief description of the control group.

Types of Outcomes

Outcomes of interest in this review of reviews include any outcome indicator that measures the effectiveness of PHCNPs. These measures include patient (e.g., health status, quality of life, patient satisfaction) or provider (e.g., quality of care, job satisfaction) or health system (e.g., length of hospital stay, rehospitalisation, resource use, costs) outcomes. We will extract data related to effect sizes, and include the actual effect size (i.e., odds ratio, relative risk, mean differences), confidence intervals, level of statistical significance, and the number of studies included in the analysis.¹⁰

Exclusion Criteria

Reviews that were developed to address broad research questions (e.g., literature reviews, scoping reviews, integrative reviews) will be excluded.

Nurse midwives will be excluded from the review of reviews because the regulatory requirements in different countries do not all require these roles to be filled by nurses, and nurse midwife roles are not consistently identified as advanced practice nursing roles across countries.

Reviews will be excluded if PHCNP impact cannot be isolated and is not reported separately from other types of nurses or team members. A list of all excluded reviews will be developed specifying reasons for exclusion.

Database Search

Evidence in approximately half of published reviews is outdated after five years.²⁴ Thus, we will limit our search to 2010 onwards to capture the most up-to-date trends. The following electronic databases will be searched: Allied and Complementary Database (AMED), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Library Database of Systematic Reviews and Controlled Trials Register, Database of Abstracts of Reviews of Effects (DARE), EMBASE, Global Health, Health Economics Evaluation Database (HEED), Health Evidence, HealthStar, Health Systems Evidence, Joanna Briggs Institute, Medline, PDQ-Evidence, Pubmed, and Web of Science. The preliminary search strategies to be adapted for each electronic database are included in Appendix 1. These strategies will be reviewed by an academic librarian. In addition, the reference lists of all relevant reviews will be reviewed.

Outcomes

The primary outcomes of the review of reviews are those that assess patient, provider and health system outcomes directly evaluating PHCNP roles.

These will be examined separately for type of PHCNP role (i.e., complementary, alternative, transition, mixed).

Data Synthesis

Narrative synthesis will be used to summarize the findings. As proposed by Olry de Labry et al. (2017) and Ramalho et al. (2019), outcomes of care provided by PHCNPs will be categorized according to clinical indicators of care quality (e.g., glycated hemoglobin for patients with diabetes), medications prescribed for chronic conditions (process), health promotion (e.g., healthy lifestyle), and illness prevention activities (e.g., influenza vaccination).^{15 31} An iterative process will be used to identify patterns and relationships across reviews and across years that the reviews were conducted.³² Summary tables will be developed to outline the key characteristics of the reviews (e.g., year of publication, countries where primary studies were conducted), outcomes (i.e., patient, provider, health system), level of role substitution (i.e., complementary, alternative, transition, mixed), quality assessment, and findings (positive, negative, nul). A record will be kept of all review-related decisions. No quantitative analyses are planned because of the potential overlap in studies included in the different reviews.¹⁸

Patient and public involvement

This review of systematic reviews was undertaken without patient involvement. Patients were not invited to comment on the study protocol design. Patients were not invited to contribute to the writing nor the editing of this manuscript. An expert patient will be consulted as to how this work may inform patient relevant outcomes or how a patient might interpret results. The results of this work will be disseminated to key stakeholders including decision makers, healthcare professionals and patients via conferences, publications and presentations.

Anticipated Contributions

PHCNPs practice in a wide range of setting and with diverse patient populations, including vulnerable populations.³³ The identification of indicators sensitive to the practice of PHCNPs from the perspective of patients, providers and the healthcare system will allow researchers, clinicians and decision-makers to understand how these providers contribute to outcomes of care. Gaining an understanding of the patient perspective is particularly important in the context of patient centered care and adapting services to the needs of vulnerable populations (e.g., residents in long-term care, patients with mental health conditions or low socio-economic status). Once identified, PHCNPs, other clinicians and decision-makers can track these indicators and determine if PHCNP roles are used optimally to respond to patient care needs. Using these indicators, subsequent research can be undertaken to support more rigorous economic evaluations of these roles, an important gap in the current literature.^{34 35}

Ethics and dissemination

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322 No ethical approval is required for the study. The data used in the study will be abstracted from
323 published systematic reviews. Dissemination strategies will include peer-reviewed publication,
324 conference presentations, and presentations to key stakeholders.
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Acknowledgements

This study was funded by the Le Réseau intersectoriel de recherche en santé de l'Université du Québec (RISUQ) (Project Grant Number 304168 (30416801); Principal investigator: ENT). KK and ENT are supported by the Fonds de recherche du Québec-Santé (Research Scholar Junior 2 [KK] (Award Number 34722) and Junior 1 [ENT] (Award Number 31051) salary awards.

Contributors

KK, ENT, MCC, IS, NB, JH, GSL, MJ, RA made substantial contributions to study conception and design. All authors were involved in drafting the manuscript, and making revisions for critical intellectual content. All authors gave final approval of the version to be published.

Funding

Le Réseau intersectoriel de recherche en santé de l'Université du Québec (RISUQ) (Project Grant Number: 304168 (30416801); Principal investigator: ENT). The funder played no role in: study design and interpretation; development of the manuscript.

Competing interests

We declare no competing interests.

Ethical approval

Not applicable: Data extracted from published articles.

Data sharing

Datasets used and analyzed in the present study are available from corresponding author Kelley Kilpatrick upon reasonable request.

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Appendix 1: Preliminary search strategies for published literature.

- Title:** Identifying Indicators Sensitive to Primary Healthcare Nurse Practitioner Practice: A Review of Systematic Reviews
- Question:** What indicators are sensitive to the practice of primary healthcare nurse practitioners (PHCNPs) from the patient, provider and health system perspectives?
- Aim:** To evaluate and synthesize systematic reviews to identify outcome indicators sensitive to the practice of primary PHCNPs from the patient, provider and health system perspectives.
- Search Strategy:**
- P:** Patients of any age, groups or communities receiving primary healthcare care in all types (e.g., teaching and non-teaching, public and private), sizes (e.g., small, medium, large) and locations (e.g., rural and urban) of community or care agencies (e.g., long-term care, primary care practices, home care).
= Search strategy concept 1: Primary Healthcare.
- I:** Care provided by PHCNPs in all sectors.
= Search strategy concept 2: Advanced Practice Nursing.
- C:** Data related to the comparator (i.e., control) group will be extracted to describe the group to which care is compared. Comparator groups can include usual care, care provided by another health care professional (e.g., physicians), best care, or adherence to clinical practice guideline.
- O:** Any outcome indicator that measures the effectiveness of PHCNPs. These measures include patient (e.g., health status, quality of life, patient satisfaction) or provider (e.g., quality of care, job satisfaction) or health system (e.g., length of hospital stay, rehospitalisation, resource use, costs) outcomes.
= Search strategy concept 3: Outcomes, comprised of 6 sub-concepts: 1) Quality/ Best practice; 2) Promotion; 3) Prevention; 4) Indicators; 5) Access; 6) Equity.
- S:** All relevant published and unpublished systematic reviews that were reported from 2010 and onwards with no restrictions on jurisdiction or language.
= Search strategy concept 4. NB: This component of the search strategy is based on part of the CADTH hedge for systematic reviews and meta-analyses (<https://www.cadth.ca/resources/finding-evidence/strings-attached-cadths-database-search-filters#syst>) combined with the hedge developed by Lunney C. et al. for overviews of reviews (Journal of Clinical Epidemiology 2016; 74: 107-118).

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"Healthcare professional"[tiab] OR
"Healthcare professionals"[tiab] OR
"Health care professional"[tiab] OR
"Health care professionals"[tiab] OR
"Health-care professional"[tiab] OR
"Health-care professionals"[tiab] OR
"Healthcare provider"[tiab] OR
"Healthcare providers"[tiab] OR
"Health care provider"[tiab] OR
"Health care providers"[tiab] OR

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1
2
3 "Health-care provider"[tiab] OR
4 "Health-care providers"[tiab] OR
5 "Health professional"[tiab] OR
6 "Health professionals"[tiab] OR
7 "Professional practice"[tiab] OR
8 "Professional practices"[tiab] OR
9 "Professional autonomy"[tiab])
10
11 AND
12 ("Advanced Practice Nursing"[MH] OR
13 "Nurse Practitioners"[MH] OR
14 "Family Nurse Practitioners"[MH] OR
15 "advanced practice nursing"[tiab] OR
16 "advanced practice nurse"[tiab] OR
17 "advanced practice nurses"[tiab] OR
18 ("APN"[tiab] AND "nursing"[tiab]) OR
19 ("APN"[tiab] AND "nurse"[tiab]) OR
20 ("APN"[tiab] AND "nurses"[tiab]) OR
21 "advanced nursing practice"[tiab] OR
22 "advanced nursing practices"[tiab] OR
23 "advanced nurse practitioner"[tiab] OR
24 "advanced nurse practitioners"[tiab] OR
25 ("ANP"[tiab] AND "nursing"[tiab]) OR
26 ("ANP"[tiab] AND "nurse"[tiab]) OR
27 ("ANP"[tiab] AND "nurses"[tiab]) OR
28 "advanced practice registered nursing"[tiab] OR
29 "advanced practice registered nurse"[tiab] OR
30 "advanced practice registered nurses"[tiab] OR
31 ("APRN"[tiab] AND "nursing"[tiab]) OR
32 ("APRN"[tiab] AND "nurse"[tiab]) OR
33 ("APRN"[tiab] AND "nurses"[tiab]) OR
34 "Nurse practitioner"[tiab] OR
35 "Nurse practitioners"[tiab] OR
36 ("NP"[tiab] AND "nursing"[tiab]) OR
37 ("NP"[tiab] AND "nurse"[tiab]) OR
38 ("NP"[tiab] AND "nurses"[tiab]) OR
39 "Primary healthcare nurse practitioner"[tiab] OR
40 "Primary healthcare nurse practitioners"[tiab] OR
41 "Primary health care nurse practitioner"[tiab] OR
42 "Primary health care nurse practitioners"[tiab] OR
43 "Primary health-care nurse practitioner"[tiab] OR
44 "Primary health-care nurse practitioners"[tiab] OR
45 ("PHCNP"[tiab] AND "Nursing"[tiab]) OR
46 ("PHCNP"[tiab] AND "Nurse"[tiab]) OR
47 ("PHCNP"[tiab] AND "Nurses"[tiab]) OR
48 "Primary care nurse practitioner"[tiab] OR
49 "Primary care nurse practitioners"[tiab] OR
50 ("PCNP"[tiab] AND "Nursing"[tiab]) OR
51 ("PCNP"[tiab] AND "Nurse"[tiab]) OR
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("PCNP"[tiab] AND "Nurses"[tiab]) OR
 "Family nurse practitioner"[tiab] OR
 "Family nurse practitioners"[tiab] OR
 ("FNP"[tiab] AND "Nursing"[tiab]) OR
 ("FNP"[tiab] AND "Nurse"[tiab]) OR
 ("FNP"[tiab] AND "Nurses"[tiab]) OR
 "Emergency nurse practitioner"[tiab] OR
 "Emergency nurse practitioners"[tiab] OR
 ("ENP"[tiab] AND "Nursing"[tiab]) OR
 ("ENP"[tiab] AND "Nurse"[tiab]) OR
 ("ENP"[tiab] AND "Nurses"[tiab]))
 AND
 ("Advance Directive Adherence"[MH] OR
 "Appointments and Schedules"[MH] OR
 "Biomarkers"[MH] OR
 "Blood Pressure"[MH] OR
 "Cholesterol"[MH] OR
 "Chronic Disease"[MH] OR
 "Consumer Behavior"[MH] OR
 "Costs and Cost Analysis"[MH] OR
 "Delivery of Health Care"[MH] OR
 "Diagnostic Tests, Routine"[MH] OR
 "Glycated Hemoglobin A"[MH] OR
 "Guideline Adherence"[MH] OR
 "Health Resources"[MH] OR
 "Health Services"[MH] OR
 "Health Status Indicators"[MH] OR
 "Health status"[MH] OR
 "Job Satisfaction"[MH] OR
 "Mortality"[MH] OR
 "Outcome and Process Assessment, Health Care"[MH] OR
 "Outcome Assessment, Health Care"[MH] OR
 "Pain"[MH] OR
 "Patient Satisfaction"[MH] OR
 "Personal Satisfaction"[MH] OR
 "Prescriptions"[MH] OR
 "Professional Role"[MH] OR
 "Quality of Health Care"[MH] OR
 "Referral and Consultation"[MH] OR
 "Task Performance and Analysis"[MH] OR
 "Treatment Adherence and Compliance"[MH] OR
 "Advance Directive Adherence"[tiab] OR
 "Schedule"[tiab] OR
 "Schedules"[tiab] OR
 "Appointment"[tiab] OR
 "Appointments"[tiab] OR
 "Attendance"[tiab] OR
 "Biomarker"[tiab] OR

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1
2
3 "Biomarkers"[tiab] OR
4 "Blood Pressure"[tiab] OR
5 "Care Process"[tiab] OR
6 "Care Processes"[tiab] OR
7 "Cholesterol"[tiab] OR
8 "Chronic disease"[tiab] OR
9 "Chronic diseases"[tiab] OR
10 "Chronic illness"[tiab] OR
11 "Chronic illnesses"[tiab] OR
12 "Chronic condition"[tiab] OR
13 "Chronic conditions"[tiab] OR
14 "clinical outcome"[tiab] OR
15 "clinical outcomes"[tiab] OR
16 "clinical parameter"[tiab] OR
17 "clinical parameters"[tiab] OR
18 "Compliant"[tiab] OR
19 "Compliance"[tiab] OR
20 "Consumer Behavior"[tiab] OR
21 "Consumer Behaviors"[tiab] OR
22 "Consumer Behaviour"[tiab] OR
23 "Consumer Behaviours"[tiab] OR
24 "Cost"[tiab] OR
25 "Costs"[tiab] OR
26 "Cost analysis"[tiab] OR
27 "Cost analyses"[tiab] OR
28 "Delivery of healthcare"[tiab] OR
29 "Delivery of health care"[tiab] OR
30 "Delivery of health-care"[tiab] OR
31 "Healthcare delivery"[tiab] OR
32 "Health care delivery"[tiab] OR
33 "Health-care delivery"[tiab] OR
34 "Routine test"[tiab] OR
35 "Routine tests"[tiab] OR
36 "Routine testing"[tiab] OR
37 "Diagnostic Test"[tiab] OR
38 "Diagnostic Tests"[tiab] OR
39 "Diagnostic Testing"[tiab] OR
40 "Routine diagnostic test"[tiab] OR
41 "Routine diagnostic tests"[tiab] OR
42 "Routine diagnostic testing"[tiab] OR
43 "economic evaluation"[tiab] OR
44 "economic evaluations"[tiab] OR
45 "economic analysis"[tiab] OR
46 "economic analyses"[tiab] OR
47 "Emergency Service"[tiab] OR
48 "Emergency Services"[tiab] OR
49 "Glycated Hemoglobin A"[tiab] OR
50 "Glycated Haemoglobin A"[tiab] OR
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"Guideline Adherence"[tiab] OR
 "HbA1C"[tiab] OR
 "high-density lipoprotein"[tiab] OR
 "high density lipoprotein"[tiab] OR
 "hdl"[tiab] OR
 "healthcare"[tiab] OR
 "health-care"[tiab] OR
 "health care"[tiab] OR
 "indicator"[tiab] OR
 "indicators"[tiab] OR
 "Health Planning"[tiab] OR
 "Health Plannings"[tiab] OR
 "Health Resource"[tiab] OR
 "Health Resources"[tiab] OR
 "Health Service"[tiab] OR
 "Health Services"[tiab] OR
 "Health status indicator"[tiab] OR
 "Health status indicators"[tiab] OR
 "Health status"[tiab] OR
 "hospital admission"[tiab] OR
 "hospital admissions"[tiab] OR
 "hospital referral"[tiab] OR
 "hospital referrals"[tiab] OR
 "Hypertension"[tiab] OR
 "Job Satisfaction"[tiab] OR
 "low-density lipoprotein"[tiab] OR
 "low density lipoprotein"[tiab] OR
 "ldl"[tiab] OR
 "Lipid profile"[tiab] OR
 "Lipid profiles"[tiab] OR
 "Manpower"[tiab] OR
 "Mortality"[tiab] OR
 "Mortalities"[tiab] OR
 "Death"[tiab] OR
 "Deaths"[tiab] OR
 "Outcome Assessment"[tiab] OR
 "Outcome Assessments"[tiab] OR
 Healthcare process assessment[tiab] OR
 Healthcare process assessments[tiab] OR
 Health care process assessment[tiab] OR
 Health care process assessments[tiab] OR
 Health-care process assessment[tiab] OR
 Health-care process assessments[tiab] OR
 "Pain"[tiab] OR
 "Pains"[tiab] OR
 "Patient Satisfaction"[tiab] OR
 "Personal Satisfaction"[tiab] OR
 "prefer"[tiab] OR

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1
2
3 "preferred"[tiab] OR
4 "preference"[tiab] OR
5 "preferences"[tiab] OR
6 "Prescribe"[tiab] OR
7 "Prescribed"[tiab] OR
8 "prescription"[tiab] OR
9 "prescriptions"[tiab] OR
10 "Process of care"[tiab] OR
11 "Processes of care"[tiab] OR
12 "Professional Role"[tiab] OR
13 "Professional Roles"[tiab] OR
14 "quality indicator"[tiab] OR
15 "quality indicators"[tiab] OR
16 "Quality of Health Care"[tiab] OR
17 "Quality of Health-Care"[tiab] OR
18 "Quality of Healthcare"[tiab] OR
19 "Health Care Quality"[tiab] OR
20 "Health-Care Quality"[tiab] OR
21 "Healthcare Quality"[tiab] OR
22 "Quality of life"[tiab] OR
23 "QOL"[tiab] OR
24 "Health-related quality of life"[tiab] OR
25 "Health related quality of life"[tiab] OR
26 "HRQOL"[tiab] OR
27 "Consultation"[tiab] OR
28 "Consultations"[tiab] OR
29 "Referral"[tiab] OR
30 "Referrals"[tiab] OR
31 "return visit"[tiab] OR
32 "return visits"[tiab] OR
33 "return appointment"[tiab] OR
34 "return appointments"[tiab] OR
35 "follow-up visit"[tiab] OR
36 "follow-up visits"[tiab] OR
37 "follow up visit"[tiab] OR
38 "follow up visits"[tiab] OR
39 "follow-up appointment"[tiab] OR
40 "follow-up appointments"[tiab] OR
41 "Follow up appointment"[tiab] OR
42 "Follow up appointments"[tiab] OR
43 "satisfaction"[tiab] OR
44 "satisfied"[tiab] OR
45 "satisfactory"[tiab] OR
46 "Task Analysis"[tiab] OR
47 "Task Analyses"[tiab] OR
48 "Task Performance"[tiab] OR
49 "Treatment Compliance"[tiab] OR
50 "Treatment compliant"[tiab] OR
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"treatment-compliant"[tiab] OR
 "Treatment Adherence"[tiab] OR
 "treatment adherent"[tiab] OR
 "treatment-adherent"[tiab] OR
 "Wellness"[tiab]
 OR
 "Anthropometry"[MH] OR
 "Body Weight"[MH] OR
 "Culturally Competent Care"[MH] OR
 "diet"[MH] OR
 "Diet, Food, and Nutrition"[MH] OR
 "Exercise"[MH] OR
 "Health Education"[MH] OR
 "Health Promotion"[MH] OR
 "Healthy Lifestyle"[MH] OR
 "Mental Health"[MH] OR
 "Nutrition Assessment"[MH] OR
 "Nutritional Status"[MH] OR
 "poverty"[MH] OR
 "Preventive Health Services"[MH] OR
 "Smoking Cessation"[MH] OR
 "Smoking Prevention"[MH] OR
 "Smoking"[MH] OR
 "Teaching"[MH] OR
 "Tobacco Smoke Pollution"[MH] OR
 "Tobacco Use"[MH] OR
 "Condition specific"[tiab] OR
 "Condition-specific"[tiab] OR
 "physical activity"[tiab] OR
 "anthropometric"[tiab] OR
 "anthropometrics"[tiab] OR
 "anthropometrical"[tiab] OR
 "anthropometrically"[tiab] OR
 "Anthropometry"[tiab] OR
 "Body Weight"[tiab] OR
 "Culturally Competent Care"[tiab] OR
 "Culturally-competent care"[tiab] OR
 "culturally diverse"[tiab] OR
 "culturally-diverse"[tiab] OR
 "Diet"[tiab] OR
 "Diets"[tiab] OR
 "Dietary"[tiab] OR
 "Dietetics"[tiab] OR
 "Dietetical"[tiab] OR
 "Dietetically"[tiab] OR
 "Food regimen"[tiab] OR
 "Food regimens"[tiab] OR
 "Dietary regimen"[tiab] OR

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1
2
3 "Dietary regimens"[tiab] OR
4 "Dietary restriction"[tiab] OR
5 "Dietary restrictions"[tiab] OR
6 "emotional health"[tiab] OR
7 "Exercise"[tiab] OR
8 "Health Education"[tiab] OR
9 "Health Promotion"[tiab] OR
10 "promotion of health"[tiab] OR
11 "healthy habit"[tiab] OR
12 "healthy habits"[tiab] OR
13 "Lifestyle"[tiab] OR
14 "Life-style"[tiab] OR
15 "Life style"[tiab] OR
16 Healthy life habit[tiab] OR
17 Healthy life habits[tiab] OR
18 "healthy living"[tiab] OR
19 "stress level"[tiab] OR
20 "stress levels"[tiab] OR
21 "low income"[tiab] OR
22 "low-income"[tiab] OR
23 "Mental Health"[tiab] OR
24 "Nutrition Assessment"[tiab] OR
25 "Nutrition"[tiab] OR
26 "Nutritional Status"[tiab] OR
27 "nutritional"[tiab] OR
28 "poverty"[tiab] OR
29 "socioeconomic status"[tiab] OR
30 "socio-economic status"[tiab] OR
31 "Preventive Health Service"[tiab] OR
32 "Preventive Health Services"[tiab] OR
33 "Health prevention"[tiab] OR
34 "Promotion"[tiab] OR
35 "second-hand smoke"[tiab] OR
36 "second hand smoke"[tiab] OR
37 "Smoke"[tiab] OR
38 "Smokes"[tiab] OR
39 "Smoked"[tiab] OR
40 "Smoker"[tiab] OR
41 "Smokers"[tiab] OR
42 "Smoking Cessation"[tiab] OR
43 "Smoking Prevention"[tiab] OR
44 "Quit smoking"[tiab] OR
45 "Quitting smoking"[tiab] OR
46 "Stop smoking"[tiab] OR
47 "Stopping smoking"[tiab] OR
48 "Smoking"[tiab] OR
49 "Teach"[tiab] OR
50 "Taught"[tiab] OR

"Teaching"[tiab] OR
 "Tobacco Use"[tiab] OR
 "Weight"[tiab]
 OR
 "Immunization"[MH] OR
 "Maternal Health Services"[MH] OR
 "Primary Prevention"[MH] OR
 "Secondary Prevention"[MH] OR
 "Sexually Transmitted Diseases"[MH] OR
 "Vaccination"[MH] OR
 "Pediatrics"[MH] OR
 "Child Development"[MH] OR
 "Human Development"[MH] OR
 "Adolescent"[MH] OR
 "Immunization"[tiab] OR
 "Immunisation"[tiab] OR
 "Immunize"[tiab] OR
 "Immunizes"[tiab] OR
 "Immunized"[tiab] OR
 "Immunise"[tiab] OR
 "Immunises"[tiab] OR
 "Immunised"[tiab] OR
 "laboratory test"[tiab] OR
 "Maternal Health Service"[tiab] OR
 "Maternal Health Services"[tiab] OR
 "pregnancy"[tiab] OR
 "Prevent"[tiab] OR
 "Prevents"[tiab] OR
 "Prevented"[tiab] OR
 "Prevention"[tiab] OR
 "Primary Prevention"[tiab] OR
 "Secondary Prevention"[tiab] OR
 "sexually transmitted"[tiab] OR
 "sexually-transmitted"[tiab] OR
 "Vaccination"[tiab] OR
 "Vaccine"[tiab] OR
 "Vaccines"[tiab] OR
 "Vaccinate"[tiab] OR
 "Vaccinates"[tiab] OR
 "Vaccinated"[tiab] OR
 "Pediatric"[tiab] OR
 "Pediatrics"[tiab] OR
 "Paediatric"[tiab] OR
 "Paediatrics"[tiab] OR
 "Childhood development"[tiab] OR
 "Child development"[tiab] OR
 "Childhood"[tiab] OR
 "Human development"[tiab] OR

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1
2
3 "healthy development"[tiab] OR
4 "youth"[tiab] OR
5 "youths"[tiab] OR
6 "adolescence"[tiab]
7 "adolescent"[tiab]
8 "adolescents"[tiab]
9
10 OR
11 "Acute Coronary Syndrome"[MH] OR
12 "Adjustment Disorders"[MH] OR
13 "Alcohol Drinking"[MH] OR
14 "Alcohol-Related Disorders"[MH] OR
15 "Anxiety Disorders"[MH] OR
16 "Blood Glucose"[MH] OR
17 "Cancer Survivors"[MH] OR
18 "Cardiovascular Diseases"[MH] OR
19 "Coronary Disease"[MH] OR
20 "Depressive Disorder"[MH] OR
21 "Diabetes Mellitus"[MH] OR
22 "diabetes, gestational"[MH] OR
23 "Diabetic Foot"[MH] OR
24 "Health Care Evaluation Mechanisms"[MH] OR
25 "Health Information Interoperability"[MH] OR
26 "Heart Failure"[MH] OR
27 "Ischemia"[MH] OR
28 "Mental Disorders"[MH] OR
29 "Neoplasms"[MH] OR
30 "pain management"[MH] OR
31 "pain"[MH] OR
32 "Papanicolaou Test"[MH] OR
33 "Patient Reported Outcome Measures"[MH] OR
34 "Physical Examination"[MH] OR
35 "Pulmonary Disease, Chronic Obstructive"[MH] OR
36 "Quality Indicators, Health Care"[MH] OR
37 "Rehabilitation"[MH] OR
38 "Self care"[MH] OR
39 "Self Efficacy"[MH] OR
40 "Stroke"[MH] OR
41 "Dementia"[MH] OR
42 "Acute Coronary Syndrome"[tiab] OR
43 "Acute Coronary Syndromes"[tiab] OR
44 "ACS"[tiab] OR
45 "ACSs"[tiab] OR
46 "Adjustment Disorder"[tiab] OR
47 "Adjustment Disorders"[tiab] OR
48 "Alcohol Drinking"[tiab] OR
49 "Alcohol-Related Disorder"[tiab] OR
50 "Alcohol-Related Disorders"[tiab] OR
51 "Alcohol Related Disorder"[tiab] OR
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"Alcohol Related Disorders"[tiab] OR
"Alcohol consumption"[tiab] OR
"Alcoholic"[tiab] OR
"Alcoholism"[tiab] OR
"Anxiety Disorder"[tiab] OR
"Anxiety Disorders"[tiab] OR
"Anxiety"[tiab] OR
"anxious"[tiab] OR
"Blood Glucose"[tiab] OR
"Blood sugar"[tiab] OR
"Blood sugars"[tiab] OR
"Cancer survivor"[tiab] OR
"Cancer survivors"[tiab] OR
"Cancer survival"[tiab] OR
"Cancer"[tiab] OR
"Cardiovascular disease"[tiab] OR
"Cardiovascular diseases"[tiab] OR
"CVD"[tiab] OR
"CVDs"[tiab] OR
"complication"[tiab] OR
"complications"[tiab] OR
"copd"[tiab] OR
"Chronic Obstructive Pulmonary Disease"[tiab] OR
"Chronic Obstructive Pulmonary Disorder"[tiab] OR
"Chronic Obstructive Pulmonary Disorders"[tiab] OR
"Coronary Disease"[tiab] OR
"Coronary Diseases"[tiab] OR
"Coronary artery disease"[tiab] OR
"Coronary artery diseases"[tiab] OR
"depression"[tiab] OR
"depressed"[tiab] OR
"depressive"[tiab] OR
"Depressive Disorder"[tiab] OR
"Depressive Disorders"[tiab] OR
"Diabetes Mellitus"[tiab] OR
"Diabetes"[tiab] OR
"Diabetic Foot"[tiab] OR
"foot complication"[tiab] OR
"foot complications"[tiab] OR
"gestational diabetes"[tiab] OR
"glycaemic"[tiab] OR
"glycaemia"[tiab] OR
"glycemic"[tiab] OR
"glycemia"[tiab] OR
"HealthCare Evaluation Mechanism"[tiab] OR
"HealthCare Evaluation Mechanisms"[tiab] OR
"Health Care Evaluation Mechanism"[tiab] OR
"Health Care Evaluation Mechanisms"[tiab] OR

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1
2
3 "Health-Care Evaluation Mechanism"[tiab] OR
4 "Health-Care Evaluation Mechanisms"[tiab] OR
5 "Health Information Interoperability"[tiab] OR
6 Interoperability of Health Information[tiab] OR
7 Inter-operability of Health Information[tiab] OR
8 "Interoperability"[tiab] OR
9 "Inter-operability"[tiab] OR
10 "Interoperable"[tiab] OR
11 "Inter-operable"[tiab] OR
12 "Heart Failure"[tiab] OR
13 "Congestive heart failure"[tiab] OR
14 "CHF"[tiab] OR
15 "Ischemia"[tiab] OR
16 "Ischemias"[tiab] OR
17 "ischemic stroke"[tiab] OR
18 "ischemic strokes"[tiab] OR
19 "Ischaemia"[tiab] OR
20 "Ischaemias"[tiab] OR
21 "ischaemic stroke"[tiab] OR
22 "ischaemic strokes"[tiab] OR
23 "Mental Disorder"[tiab] OR
24 "Mental Disorders"[tiab] OR
25 "mental health"[tiab] OR
26 "mentally healthy"[tiab] OR
27 "Mental illness"[tiab] OR
28 "Mental illnesses"[tiab] OR
29 "Mentally ill"[tiab] OR
30 "Neoplasm"[tiab] OR
31 "Neoplasms"[tiab] OR
32 "Oncology"[tiab] OR
33 "Oncologist"[tiab] OR
34 "Oncologists"[tiab] OR
35 "pain management"[tiab] OR
36 "management of pain"[tiab] OR
37 "managing pain"[tiab] OR
38 "managed pain"[tiab] OR
39 "pain"[tiab] OR
40 "pains"[tiab] OR
41 "Pap test"[tiab] OR
42 "Pap tests"[tiab] OR
43 "Papanicolaou Test"[tiab] OR
44 "Papanicolaou Tests"[tiab] OR
45 "Patient Reported Experience Measure"[tiab] OR
46 "Patient Reported Experience Measures"[tiab] OR
47 "Patient Reported Outcome Measure"[tiab] OR
48 "Patient Reported Outcome Measures"[tiab] OR
49 "Patient-Reported Experience Measure"[tiab] OR
50 "Patient-Reported Experience Measures"[tiab] OR
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"Patient-Reported Outcome Measure"[tiab] OR
 "Patient-Reported Outcome Measures"[tiab] OR
 "Physical Exam"[tiab] OR
 "Physical Exams"[tiab] OR
 "Physical Examination"[tiab] OR
 "Physical Examinations"[tiab] OR
 "PREM"[tiab] OR
 "PREMs"[tiab] OR
 "PROM"[tiab] OR
 "PROMs"[tiab] OR
 "promotion"[tiab] OR
 "psychosocial"[tiab] OR
 "psycho social"[tiab] OR
 "psycho-social"[tiab] OR
 "Health Care Quality Indicator"[tiab]
 "Health Care Quality Indicators"[tiab]
 "Healthcare Quality Indicator"[tiab]
 "Healthcare Quality Indicators"[tiab]
 "Health-care Quality Indicator"[tiab]
 "Health-care Quality Indicators"[tiab]
 "Quality indicator of health care"[tiab]
 "Quality indicators of health care"[tiab]
 "Quality indicator of healthcare"[tiab]
 "Quality indicators of healthcare"[tiab]
 "Quality indicator of health-care"[tiab]
 "Quality indicators of health-care"[tiab]
 "Quality Indicator"[tiab] OR
 "Quality Indicators"[tiab] OR
 "Rehabilitation"[tiab] OR
 "self care"[tiab] OR
 "Self Efficacy"[tiab] OR
 "self-care"[tiab] OR
 "self-efficacy"[tiab] OR
 "Stroke"[tiab] OR
 "Strokes"[tiab] OR
 "cerebrovascular accident"[tiab] OR
 "cerebrovascular accidents"[tiab] OR
 "CVA"[tiab] OR
 "CVAs"[tiab] OR
 "Dementia"[tiab] OR
 "Dementias"[tiab]
 OR
 "Allied Health Personnel"[MH] OR
 "ambulatory care"[MH] OR
 "Ambulatory Care Information Systems"[MH] OR
 "Appointments and Schedules"[MH] OR
 "Clinical Competence"[MH] OR
 "Duration of Therapy"[MH] OR

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- 1
- 2
- 3 "Education"[MH] OR
- 4 "Educational Measurement"[MH] OR
- 5 "Evidence-Based Practice"[MH] OR
- 6 "Harm Reduction"[MH] OR
- 7 "Health Behavior"[MH] OR
- 8 "Health Care Costs"[MH] OR
- 9
- 10 "Health Care Economics and Organizations"[MH] OR
- 11 "Health Care Facilities, Manpower, and Services"[MH] OR
- 12 "Health Care Quality, Access, and Evaluation"[MH] OR
- 13 "Health Knowledge, Attitudes, Practice"[MH] OR
- 14 "Health Plan Implementation"[MH] OR
- 15 "Health Services Accessibility"[MH] OR
- 16 "Healthcare Disparities"[MH] OR
- 17 "Hospital Shared Services"[MH] OR
- 18 "House Calls"[MH] OR
- 19 "Length of Stay"[MH] OR
- 20 "Office Visits"[MH] OR
- 21 "Patient Acceptance of Health Care"[MH] OR
- 22 "patient admission"[MH] OR
- 23 "Patient Advocacy"[MH] OR
- 24 "Prescriptions"[MH] OR
- 25 "Referral and Consultation"[MH] OR
- 26 "Training Support"[MH] OR
- 27 "Universal Health Care"[MH] OR
- 28 "Allied Health Personnel"[tiab] OR
- 29 "Access to care"[tiab] OR
- 30 "care access"[tiab] OR
- 31 "Access to health-care"[tiab] OR
- 32 "Access to healthcare"[tiab] OR
- 33 "Access to health care"[tiab] OR
- 34 "Health Personnel"[tiab] OR
- 35 "ambulatory care"[tiab] OR
- 36 "Ambulatory Care Information System"[tiab] OR
- 37 "Ambulatory Care Information Systems"[tiab] OR
- 38 "Schedule"[tiab] OR
- 39 "Schedules"[tiab] OR
- 40 "Scheduled"[tiab] OR
- 41 "Appointment"[tiab] OR
- 42 "Appointments"[tiab] OR
- 43 "Clinical Competence"[tiab] OR
- 44 "Clinical Competency"[tiab] OR
- 45 "Clinical Competencies"[tiab] OR
- 46 "Cost outcome"[tiab] OR
- 47 "Cost outcomes"[tiab] OR
- 48 "Cost"[tiab] OR
- 49 "Costs"[tiab] OR
- 50 "direct cost"[tiab] OR
- 51 "direct costs"[tiab] OR
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"indirect cost"[tiab] OR
 "indirect costs"[tiab] OR
 "Duration of Therapy"[tiab] OR
 "Therapy duration"[tiab] OR
 "Therapy durations"[tiab] OR
 "Length of therapy"[tiab] OR
 "Therapy length"[tiab] OR
 "Therapy lengths"[tiab] OR
 "Education"[tiab] OR
 "Educational Measurement"[tiab] OR
 "Educational Measurements"[tiab] OR
 "Evidence-based intervention"[tiab] OR
 "Evidence-based interventions"[tiab] OR
 "Evidence-based policy"[tiab] OR
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 "Health Care Organization"[tiab] OR
 "Health Care Organizations"[tiab] OR
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 "Health-Care Facilities"[tiab] OR
 "Health Care Facility"[tiab] OR
 "Health Care Facilities"[tiab] OR
 "Health-Care Manpower"[tiab] OR
 "Health Care Manpower"[tiab] OR

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3 "HealthCare Service"[tiab] OR
4 "HealthCare Services"[tiab] OR
5 "Health-Care Service"[tiab] OR
6 "Health-Care Services"[tiab] OR
7 "Health Care Service"[tiab] OR
8 "Health Care Services"[tiab] OR
9 "HealthCare Quality"[tiab] OR
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11 "Health Care Quality"[tiab] OR
12 "Quality HealthCare"[tiab] OR
13 "Quality Health-Care"[tiab] OR
14 "Quality Health Care"[tiab] OR
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45 "Health Attitudes"[tiab] OR
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47 "Health Resource Utilization"[tiab] OR
48 "Utilization of Health Resources"[tiab] OR
49 "Health Resource Utilisation"[tiab] OR
50 "Utilisation of Health Resources"[tiab] OR
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"Consultations"[tiab] OR
"Referral"[tiab] OR
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"Universal Health Care"[tiab] OR
"Universal HealthCare"[tiab] OR
"unplanned"[tiab]
OR
"Delivery of Health Care"[MH] OR
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"Global Health"[MH] OR

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3 "Health Equity"[MH] OR
4 "Health Literacy"[MH] OR
5 "Health Status Disparities"[MH] OR
6 "Healthcare Disparities"[MH] OR
7 "Income"[MH] OR
8 "Insurance Coverage"[MH] OR
9 "International Classification of Functioning, Disability and Health"[MH] OR
10 "Marital Status"[MH] OR
11 "Minority Health"[MH] OR
12 "Oceanic Ancestry Group"[MH] OR
13 "Patient Selection"[MH] OR
14 "Population Dynamics"[MH] OR
15 "Population Groups"[MH] OR
16 "Poverty Areas"[MH] OR
17 "Refusal to Treat"[MH] OR
18 "Religion"[MH] OR
19 "Social Discrimination"[MH] OR
20 "Socioeconomic Factors"[MH] OR
21 "Treatment Failure"[MH] OR
22 "Aboriginal"[tiab] OR
23 "Communication Barriers"[tiab] OR
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25 "Delivery of Health Care"[tiab] OR
26 "Delivery of Health-Care"[tiab] OR
27 "HealthCare Delivery"[tiab] OR
28 "Health Care Delivery"[tiab] OR
29 "Health-Care Delivery"[tiab] OR
30 "Disability Evaluation"[tiab] OR
31 "Discrimination"[tiab] OR
32 "equity"[tiab] OR
33 "Frailty"[tiab] OR
34 "Global Health"[tiab] OR
35 "Health Equity"[tiab] OR
36 "Health Literacy"[tiab] OR
37 "Health Status Disparity"[tiab] OR
38 "Health Status Disparities"[tiab] OR
39 "Income"[tiab] OR
40 "Incomes"[tiab] OR
41 "Insurance coverage"[tiab] OR
42 "Insurance coverages"[tiab] OR
43 "Insurance cover"[tiab] OR
44 "Insurance covers"[tiab] OR
45 "Insurance covered"[tiab] OR
46 "International Classification of Functioning, Disability and Health"[tiab] OR
47 "inequal"[tiab] OR
48 "inequality"[tiab] OR
49 "inequalities"[tiab] OR
50 "Marital status"[tiab] OR
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 "Social support"[tiab] OR
 "treatment failure"[tiab] OR
 "treatment failures"[tiab] OR
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 "Vulnerability"[tiab] OR
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 "Health-care Disparities"[tiab] OR
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 AND
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 meta analy*[tw] or
 metanaly*[tw] or

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met analy*[tw] or
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research overview*[tiab] or
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systematic review*[tiab] or
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("cochrane reviews"[tiab]) or
(evidence[ti] and (reviews[ti] or meta-analyses[ti]))

Appendix 2: Preliminary search strategies for unpublished literature

CADTH Information Services, Grey Matters: a practical tool for searching health-related grey literature
<https://www.cadth.ca/resources/finding-evidence/grey-matters>

Organization for Economic Co-operation and Development (OECD)
<http://www.oecd.org/>

ProQuest Dissertation and Theses
<https://about.proquest.com/products-services/pqdtglobal.html>

World Health Organization
<https://www.who.int/>

00 - GENERAL, MULTIDISCIPLINARY

East View Information Services
<http://www.eastview.com>

GreyNet International, Grey literature Network Service
<http://www.greynet.org>

Grijze Literatuur in Nederland, GLIN
<http://www.publiekwijzer.nl/bestanden.php?id=zoeknaar&db=3.2>

Italian Grey Literature Database
<http://polarcnr.area.ge.cnr.it/cataloghi/bice/index.php?type=Grigia>

National Repository of Grey Literature, NRGL
<http://www.nusl.cz/?lang=en>

OpenGrey Repository, System for Information on Grey Literature in Europe
<http://www.opengrey.eu>

[NEW ENTRY](#)

06 - BIOLOGICAL & MEDICAL SCIENCES

Cochrane Reviews
<http://www.cochrane.org/reviews/en/mr000010.html>

Doctor of Nursing Practice, DNP
<http://libguides.rutgers.edu/content.php?pid=449135&sid=3680427>

Duke University Medical Center Library
<http://guides.mcclibrary.duke.edu/greyliterature>

Gray Literature in Health Research
<http://researchguides.dml.georgetown.edu/content.php?pid=352972&sid=2887419>

Grey Horizon, A Grey Literature Current Awareness Tool in Cancer Care
<http://grey-horizon.blogspot.nl/>

Grey Literature for Dentistry
<http://guides.library.utoronto.ca/dentistry>

Grey Literature in the Health Sciences
<http://guides.library.upenn.edu/healthgreylit?hs=a>

Grey Literature Report - New York Academy of Medicine

<http://www.greylit.org>

HealthKnowledge

<http://www.healthknowledge.org.uk/public-health-textbook/research-methods/1a-epidemiology/grey-literature>

Lister Hill Library of the Health Sciences

<http://libguides.lhl.uab.edu/GreyLit>

Mesothelioma Guide

<https://www.mesotheliomaguide.com/mesothelioma/causes/asbestos-and-cancer/>

Mesothelioma.net

<http://www.mesothelioma.net>

Norris Medical Library - Grey Literature Resource Guide

http://norris.usc.libguides.com/grey_literature

Nursing and Allied Health Resource Section, NAHRS

<http://sites.google.com/site/nahrsnursingresources/Home/grey-literature-1>

Social Policy and Practice

<http://bathhealthnews.blogspot.com/2009/11/new-database-social-policy-practice.html>

Health Sciences Library and Informatics Center

<http://libguides.health.unm.edu/content.php?pid=200149>

University of Waterloo

http://www.lib.uwaterloo.ca/discipline/health_kin/grey_literature.html

PRISMA-P 2015 Checklist

This checklist has been adapted for use with protocol submissions to *Systematic Reviews* from Table 3 in Moher D et al: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews* 2015 4:1

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
ADMINISTRATIVE INFORMATION					
Title					
Identification	1a	Identify the report as a protocol of a systematic review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	<input type="checkbox"/>	<input type="checkbox"/>	NA
Registration	2	If registered, provide the name of the registry (e.g., PROSPERO) and registration number in the Abstract	<input checked="" type="checkbox"/>	<input type="checkbox"/>	102
Authors					
Contact	3a	Provide name, institutional affiliation, and e-mail address of all protocol authors; provide physical mailing address of corresponding author	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8-69
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	332-335
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	<input type="checkbox"/>	<input type="checkbox"/>	NA
Support					
Sources	5a	Indicate sources of financial or other support for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	337-340
Sponsor	5b	Provide name for the review funder and/or sponsor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	337-340
Role of sponsor/funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	<input checked="" type="checkbox"/>	<input type="checkbox"/>	337-340
INTRODUCTION					
Rationale	6	Describe the rationale for the review in the context of what is already known	<input checked="" type="checkbox"/>	<input type="checkbox"/>	122-151
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	151-163
METHODS					

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
Eligibility criteria	8	Specify the study characteristics (e.g., PICO, study design, setting, time frame) and report characteristics (e.g., years considered, language, publication status) to be used as criteria for eligibility for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	165-232
Information sources	9	Describe all intended information sources (e.g., electronic databases, contact with study authors, trial registers, or other grey literature sources) with planned dates of coverage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	233-252
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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	253-263, Appendix 1
STUDY RECORDS					
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	165-298
Selection process	11b	State the process that will be used for selecting studies (e.g., two independent reviewers) through each phase of the review (i.e., screening, eligibility, and inclusion in meta-analysis)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	165-298
Data collection process	11c	Describe planned method of extracting data from reports (e.g., piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	265-275
Data items	12	List and define all variables for which data will be sought (e.g., PICO items, funding sources), any pre-planned data assumptions and simplifications	<input checked="" type="checkbox"/>	<input type="checkbox"/>	170-178
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	217-223
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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	170-178; 276-280
DATA					
Synthesis	15a	Describe criteria under which study data will be quantitatively synthesized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	287-298
	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 (e.g., I^2 , Kendall's tau)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	287-298
	15c	Describe any proposed additional analyses (e.g., sensitivity or subgroup analyses, meta-regression)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	212-216; 287-298
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	<input checked="" type="checkbox"/>	<input type="checkbox"/>	287-298
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (e.g., publication bias across studies, selective reporting within studies)	<input type="checkbox"/>	<input type="checkbox"/>	NA
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (e.g., GRADE)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	276-280