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Towards High Quality, Useful Practice Guidelines for Child and Youth Mental Health Disorders: Protocol for a Systematic Review and Consensus Exercise.

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2017-018053
Article Type:	Protocol
Date Submitted by the Author:	02-Jun-2017
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Keywords:	clinical practice guidelines, children, adolescents, MENTAL HEALTH

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Manuscripts



Towards High Quality, Useful Practice Guidelines for Child and Youth Mental Health Disorders: Protocol for a Systematic Review and Consensus Exercise.

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7 **Keywords:** Practice Guidelines; Child; Adolescent; Mental Health
8

9 **Author Contributions:** KB conceived the initial idea for the study and is the guarantor of the protocol. KB and
10 SD wrote the first draft of the protocol. KB, SD, MB, PS, AM, JM, PS, KC, AC, JH, CC and MR reviewed multiple
11 versions of the protocol providing critical comment and further developing the methods. KB, SD, MB, PS, AM, JM,
12 PS, KC, AC, JH, CC and MR authors read and approved the final version of the manuscript.
13

14 **Funding Statement:** This work is supported in part by the Margaret and Wallace McCain Centre for Child, Youth
15 & Family Mental Health, Centre for Addiction and Mental Health, Toronto, Ontario. The funder had no role in the
16 development or implementation of the protocol.
17

18 **Competing Interests Statement:** Dr. Courtney reports personal fees from the Cundill Foundation. The
19 remaining authors report they have nothing to declare.
20

21 **Data Sharing Statement:** The findings from our systematic review and nominal group consensus exercises will
22 be disseminated through a specially developed website. Additional information can be requested from the
23 principal investigator.
24

25 **Acknowledgements:** We thank the members of our youth and adult family member advisory committee (S
26 Cannon, Z Johnstone, L Langford, G Loucks, A Messaoudi and H Smith) for their contributions to proposal
27 methods related to youth and adult family member engagement.
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ABSTRACT

Introduction: The quality of clinical practice guidelines (PGs) has not been evaluated in child and youth mental health (CYMH). To address this gap we will: i) conduct a systematic review to answer the question 'among eligible PGs relevant to the prevention or treatment of CYMH conditions, which PGs meet criteria for minimum and high quality?; ii) apply nominal group methods to create recommendations for how CYMH PG quality, completeness and usefulness can be strengthened.

Methods and Analysis: Systematic Review: Potentially eligible PGs will be identified in 12 databases using a reproducible search strategy developed by a research librarian. Trained raters will: i) apply pre-specified criteria to identify eligible PGs relevant to depression, anxiety, suicidality, bipolar disorder, behaviour disorder [attention-deficit hyperactivity disorder, oppositional defiant disorder, conduct disorder] and substance use disorder; ii) extract descriptive data; and iii) assess PG quality using the Appraisal of Guidelines for Research and Evaluation (AGREE II) tool. Scores on three AGREE-II domains (rigor of development, stakeholder involvement, editorial independence) will designate PGs as minimum ($\geq 50\%$) or high quality ($\geq 70\%$). Nominal Group: Four CYMH PG knowledge-user groups (clinicians, mental health service planners, youth and adult family members) will participate in structured exercises derived using nominal group methods to generate recommendations to improve PG quality, completeness and usefulness.

Ethics and Dissemination: Ethics approval is not required. Study products will be disseminated as follows. A cross-platform website will house eligible CYMH PGs and their quality ratings. Twitter and Facebook tools will promote it to a wide variety of PG users. Data from Google Analytics, Twitonomy, and Altmetrics will inform usage evaluation. Complementary educational workshops will be conducted for CYMH professionals. Print materials and journal articles will be produced.

Registration Details: PROSPERO 2017:CRD42017060738

Strengths and Limitations

- This systematic review will provide currently unavailable information about which existing CYMH PGs are trustworthy, and should be used by clinicians, mental health service planners, youth and family members.
- Our protocol adheres to PRISMA- P criteria.
- Nominal group consensus exercises conducted with four different types of PG users will identify how the quality, completeness and usefulness of CYMH PGs can be strengthened.
- The review cannot address barriers and facilitators of successful guideline implementation.

For peer review only

INTRODUCTION

Effective interventions are increasingly available to assess, prevent and treat child and youth mental health problems.¹ However, studies repeatedly show that many children and youth experiencing mental health difficulties may not benefit from these interventions. For example, even in resource rich settings only about 20-30% of youth in need are able to obtain any child and youth mental health (CYMH) care.² Equally concerning are findings that suggest even when children and youth are able to access CYMH services, the quality of care received is uneven at best, with wide variation in the types of services delivered within a single jurisdiction³⁻⁶ Clinical practice guidelines (PGs) are decision aids that have the potential to help strengthen the quality of CYMH care, and improve CYMH outcomes.⁷ The recommendations contained in high quality PGs consist of statements about the comparative benefits and risks of different intervention options, systematically derived using rigorous critical appraisal and research synthesis methodologies. These statements can guide clinical decisions and mental health service planning, reduce variation in the services delivered, and facilitate informed decision-making by youth experiencing mental health difficulties and their family members.⁷⁻⁹ Numerous CYMH PGs are now available, and leading national and international organizations regularly call for their increased production and use.^{10, 11}

The availability of high-quality, 'trustworthy' PGs is a non-negotiable pre-requisite to promoting their development and use.⁷ Otherwise, PG implementation may not improve the quality of CYMH care, resulting in little or no mental health benefit to children and youth, and potentially increasing the risk of harm and wasted resources due to the implementation of flawed PG recommendations. PG quality has received considerable attention, particularly in internal medicine and its sub-specialties.¹²⁻¹⁴ International criteria have been developed to guide the production of rigorous, clinically trustworthy PGs,⁷ and The Appraisal of Guidelines for Research and Evaluation (AGREE II) tool,¹⁵⁻¹⁷ derived from these standards has been used to appraise and improve PG quality relevant to adult chronic disease, and to enable PG users to choose PGs based on quality. More recently the Institute of Medicine (IOM) has proposed eight similar PG quality standards,¹⁸ and work has begun to translate them into a new tool for appraising quality/clinical validity.¹⁹

In contrast, to date, very little attention has been given to the quality of PGs relevant to CYMH conditions.²⁰ The need to fill this gap is long overdue. We need to know which available CYMH PGs are trustworthy, and how to design initiatives to strengthen the capacity of the CYMH field to produce high quality, useful PGs. As a first step, we appraised the rigor of the development methods currently used by groups who create CYMH PGs.²⁰ Five different sets of development methods were identified within 70 individual CYMH PGs. Evaluation of these sets of development methods using both the AGREE II and IOM criteria revealed that roughly 70% of CYMH PGs may not be trustworthy because the methods used to develop them are weak, pointing to the urgent need to evaluate the quality of the actual CYMH PGs. The protocol reported below addresses this need and will proceed in three phases. First, a systematic review will be conducted to answer the question 'Among eligible PGs relevant to the assessment, prevention or treatment of common CYMH conditions, which PGs meet criteria for minimum and high quality?'. The goal is to increase PG user awareness of specific trustworthy CYMH PGs by identifying all available CYMH PGs and determining which ones meet criteria for minimum and high quality standards using the AGREE-II appraisal tool. Second, working with four PG knowledge-user (KU) groups (i.e., clinicians, mental health service planners, youth and adult family members), nominal group methods will be employed to develop recommendations to guide improvements in CYMH PG quality, completeness and usefulness. The goal is to provide consensus-based statements that can inform capacity building initiatives including how to strengthen CYMH PG quality through increased attention to rigorous develop methods, the identification of a core-set of CYMH PGs, how to improve user skills relevant to choosing PGs based on quality, how to increase the alignment of PG content with different KU group needs, and how to co-ordinate the work of different PG development

1 groups so that PG quality is strengthened through increased efficiency and collaboration. Finally, a set of
2 dissemination activities will be undertaken to make the results of this work widely available to both PG users and
3 developers.
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6 **METHODS AND ANALYSIS**

7 **Systematic Review (SR) Methods**

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11 Our methods adhere to Cochrane Collaboration²¹ and PRISMA standards [Preferred Reporting Items for
12 Systematic Reviews/Meta-analyses and Protocols].^{22, 23}
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14 **Eligibility Criteria:** Documents identified using the search strategy described below will be deemed eligible if
15 they meet the following criteria: (i) English language; (ii) documents labeled practice guideline, practice parameter,
16 or consensus or expert committee recommendations, or documents with the explicit objective or methods to
17 develop original guidance/recommendations; (iii) published, revised, updated or reaffirmed between 2005-2017;
18 (iv) address the assessment, prevention or treatment of one of the following CYMH disorder groups (as defined
19 by DSM-5),²⁴ mood (major depressive disorder, dysthymia, bipolar disorder), anxiety (agoraphobia, generalized
20 anxiety disorder, social phobia, specific phobia, panic disorder, separation anxiety disorder), self-harm/suicidality,
21 disruptive behavior (attention deficit hyperactivity disorder, oppositional defiant disorder, conduct disorder) and
22 substance use disorders; and (v) relevant to children and youth ≤ 18 years of age. Documents meeting the
23 foregoing inclusion criteria will be excluded if judged to be a narrative or systematic literature review that contains
24 summary statements regarding clinical implications/recommendations.
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28 **Information Sources:** Following advice from an experienced health research librarian (Rice), we will search
29 Medline, EMBASE, PsycINFO and CINAHL. Our grey literature search will include PG specific sites (i.e., National
30 Guideline Clearinghouse, Canadian Medical Association Infobase, National Institute for Health and Care
31 Excellence, Guidelines International Network International Guideline Library, Australia's Clinical Practice
32 Guidelines Portal and New Zealand Guidelines Group). It will also target mental health-related organizations (e.g.,
33 American Academy of Child and Adolescent Psychiatry; Canadian Mental Health Association) and include a
34 broad search using Google. All searches will be supplemented by: screening reference lists of eligible PGs; using
35 cited reference searching to reference forward eligible PGs; hand-searching key journals; soliciting
36 recommendations from team members.
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40 **Search Strategy:** Our research librarian will use a strategy that combines subject heading and text terms for
41 mental health AND guidelines AND children/adolescents. The strategy will be developed in Medline and then
42 translated to terms appropriate to other databases and peer reviewed.²⁵ The provisional search strategy is
43 available upon request.
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45 **Information Management:** Search results will be stored using bibliographic management software.
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47 **Selection Process:** One methodologist with expertise in the identification and quality assessment of PGs will
48 independently screen the titles and abstracts of all unduplicated identified records using Reference Manager
49 software. Records that do not meet inclusion criteria will be excluded at this stage. A research assistant will obtain
50 full-text records for all potentially relevant documents identified during title and abstract screening. Two
51 methodologists will then apply the inclusion criteria to full-text documents to identify eligible PGs.
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Data Items and Collection Process: PG Descriptive Data: Trained research staff will extract data from eligible PGs using a standardized form to capture: date produced; author; organization type (government, medical society, special group, other); country of origin; CYMH disorder; use of research evidence (SR, selective literature review, expert opinion consensus, other); interventions included; outcomes (mental health, academic, social, physical, other); conflict of interest management; other. Training will include refinement and item rewording as needed to improve clarity and optimize reviewer agreement.

PG Quality Assessment Methods, Raters, Training: PG quality ratings will be conducted using AGREE II.¹⁷ This validated tool is used widely and consists of 23 questions grouped in 6 domains: scope and purpose, stakeholder involvement, rigor of development, clarity of presentation, applicability, editorial independence. Two additional items assess overall quality. Item response options range from 1 to 7. Two reviewers (MSc in research methods) will participate in a three stage training exercise: completion of the online AGREE II Overview Tutorial,²⁶ a detailed review of the AGREE II User's Manual,¹⁷; and an online practice assessment of an example PG.²⁷ Reviewers will meet with the principal investigator to review disagreements and 'lessons learned' about AGREE II. Following training, the two reviewers will independently apply AGREE II criteria to eligible PGs using the My AGREE PLUS online platform.²⁸ Inter-rater differences ≥ 2 points on initial item scores will be discussed and revised if appropriate, but consensus will not be required. Final item scores will then be aggregated into 6 domain scores by summing both reviewers' scores for all items within a given domain and standardizing as a percentage of the maximum possible score (ranging from 0-100%) using the formula described in the AGREE II User's Manual.¹⁷

PG High and Minimum Quality Rating Criteria: The AGREE II User's Manual does not provide criteria to designate PGs as high or low quality. Thus, the interpretation of domain scores and overall PG quality assessments are determined by the user. We will use scores on three AGREE II domains - stakeholder involvement, rigor of development (that is, rigorous consideration of the relevant research evidence base), and editorial independence (management of academic and financial conflict of interest) - to classify PGs according to quality. Minimum quality PGs will be defined as those that receive a domain score $\geq 50\%$ on all three domains. High quality PGs will be defined as those that obtain a domain score $\geq 70\%$ on all three domains. We selected these three domains because they address the extent to which risk of bias is minimized in the identification and interpretation of the research evidence used to derive the guideline recommendations. The remaining three domains, although important, do not evaluate the clinical validity and trustworthiness of the PG; rather they focus on the problem statement, clarity of presentation and implementability.

Data Synthesis and Statistical Techniques: Descriptive statistics (means, proportions) will be used to summarize eligible PG characteristics and quality assessment results. We will calculate the intraclass correlation coefficient (ICC) to assess inter-rater agreement²⁹ and use Fleiss' categories to classify the level of agreement: poor (0-0.40), fair to good (0.41-0.75), and excellent (> 0.75).³⁰ SPSS, version 23 will be used to perform the statistical analyses.

Nominal Group Methods

The SR findings will inform the development of recommendations to guide future CYMH PG development. Four CYMH PG knowledge-user groups, namely clinicians, mental health service planners, youth and adult family members will participate in a series of structured exercises derived using nominal group methods.^{31, 32}

Recommendation Development Group (RDG) Membership: Group membership influences the outcomes of consensus exercises. Heterogeneous groups representing the range of relevant perspectives are preferred as they are more likely to produce judgments that reflect a conservative or middle ground.^{7, 33} For each PG user group, we will form groups composed of 10 individuals. Clinicians and mental health service planners will be

1 identified through nominations by project team investigators. Youth (aged 8 to 18 years) and adult family
2 members will be nominated by the members of our youth and adult family member advisory committee (see
3 section below re committee membership and involvement to date in protocol development). Once the four groups
4 are assembled, members will be asked if important viewpoints are not represented, and additional members (up
5 to 3) will be invited to participate as needed.
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8 Managing Conflict of Interest: Methods consistent with current international standards will be used.³⁴ RDG
9 participants will be asked to disclose financial or intellectual conflicts relevant to CYMH PG development. The
10 project principal investigator in consultation with other co-investigators as needed will review all disclosed conflicts
11 and make decisions regarding whether an individual should be recused from all or a portion of the
12 recommendation development exercise.
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15 Generating Recommendations: A structured questionnaire, face-to-face meeting interactions and on-line voting
16 derived from nominal group methods will be used.
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18 Structured Pre-Meeting Questionnaire: RDG members will respond to an electronic questionnaire prior to a face-
19 to-face meeting. Provisional questions include:
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21 1. i) Using AGREE II as a framework and the SR findings, how should minimum quality standards for CYMH PGs
22 be defined? ii) Based on the results of the SR, what methodologic quality criteria should be the focus of capacity
23 building initiatives designed to improve PG quality? 2. What CYMH PGs constitute a core set (including a
24 rationale based on prevalence and burden of illness)? 3. What content and PG development processes are
25 needed to ensure that PGs are useful to specific types of KUs: i) clinicians (child psychiatrists, family physicians,
26 pediatricians, nurses, psychologists and social workers); ii) mental health service planners in provincial
27 government ministries, hospitals and community agencies; iii) children and youth; and iv) adult family members? 4.
28 How can increased collaboration between PG development groups be encouraged in order to strengthen PG
29 quality and usefulness, and reduce duplication? Collated questionnaire responses will be circulated to all prior to
30 the meeting.
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34 Face-to-Face Meeting: First, collated SR findings and pre-meeting questionnaire results will be reviewed. Then
35 each KU group will work to draft recommendations related to each pre-meeting question. Each group will report
36 their draft recommendations for each question to the full group. The principal investigator will collate draft
37 recommendations into a final provisional set for review in the final session of the day.
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40 Generating Final Recommendations and Quantifying the Level of Consensus: We will finalize the content of the
41 recommendations drafted in the face-to-face meeting and quantify RDG member agreement (0 to 100%) for each
42 recommendation as follows. First, forty-eight hours after the face-to-face meeting, RDG members will indicate
43 their level of agreement with each draft recommendation using a 7-point scale (1 = strongly disagree; 7 = strongly
44 agree). Ratings will be collected anonymously in an online survey. RDG members will then be provided with a
45 summary of scores, and participate in a conference call one week later to discuss and revise each
46 recommendation as necessary. Finally, RDG members will re-rate their agreement with each revised
47 recommendation in a second anonymous online exercise. Although consensus (i.e., 100% agreement among
48 RDG members on the rating assigned to a recommendation) may be achieved for a specific recommendation, this
49 is not our aim. Quantifying the extent of variation in agreement/disagreement with the recommendations produced
50 is an integral part of accurate communication of RDG views.⁷
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Youth and Family Member Participation in Protocol Development and Preparation Prior to Project Startup

Informed by patient and public involvement methodology, we have already convened a youth and adult family member advisory group (4 youth, 2 adult family members) to provide leadership throughout the project.⁹ During proposal development, this group first planned the type of involvement they wished to have in the project using the following 'meaningful engagement' continuum: consultation, involvement, partnership and shared leadership.^{35, 36} The results of their deliberations are as follows. First they will participate as learners in the SR to understand PGs and quality appraisal methods. Then, with this preparation, their goal in subsequent project stages will be participation/shared leadership (e.g., develop recommendations for how PGs can be more acceptable/useful to youth and adult family members; create dissemination tools tailored to the needs of youth and adult family members). Specific processes and roles are aligned with engagement principles including reciprocal relationships, co-learning, partnerships, transparency, honesty, trust.^{35, 36}

Training Workshops for Youth and Family Members

Prior to participating in the SR, structured nominal group exercises, face-to-face meeting and online survey to rate consensus on the recommendations, youth and adult family members will participate in three half-day workshops to learn about PGs and the AGREE II quality assessment process. The goal is to prepare them for participation in the SR and recommendation development. A fourth workshop will be convened prior to the full team meeting to prepare draft recommendations. The goals are twofold: i) to prepare youth and adult family members for their role in generating recommendations relevant to PG acceptability/usefulness; and ii) to enable them to provide input into the full team meeting agenda to ensure a meaningful process that facilitates youth and adult family member engagement in the deliberations and decisions.

Integrated Knowledge Translation

Throughout the project, we will use integrated knowledge translation (iKT) methods to ensure our goals and outputs are relevant to the needs of our four KU user groups.³⁷ Figure 1 illustrates how the core project team will interact with our full team of researchers and KUs to accomplish our iKT goals in each project stage.

Potential Challenges

Conflict of Interest: If not managed appropriately, conflict of interest could introduce bias into our work. We will address this risk as follows. First, AGREE II will be applied by MSc level raters with no potential for intellectual or financial conflict of interest that might systematically bias ratings. Second, conflicts among RDG members will be declared and managed as described above. **Number of PGs:** Our pilot work shows that the number of PGs that meet our eligibility criteria can be rated with AGREE II in the timeline proposed (2 years). **Team Member Engagement:** All team members have reviewed our project activities and timeline and have provided written commitments to participate in project activities as shown in Figure 1. **Youth and Adult Family Member Engagement:** This is an area of demonstrated expertise for one of our team members (PS). She has already convened our youth and adult family member advisory group, and successfully engaged them in planning their involvement in each stage of the project.

ETHICS AND DISSEMINATION

Ethics: Ethics approval for this project is not required.

Web-based PG Repository Platform to Disseminate Quality Assessed PGs: A cross-platform (i.e., desktop, tablet, and smartphone accessible) website will be created including content tabs to facilitate navigation, a contact form for users to submit questions and a user experience survey to solicit feedback. Figure 2 presents website design elements.

Website Promotion: To disseminate our findings and increase PG user knowledge of trustworthy CYMH PGs, we will launch a social media campaign to engage with the CYMH community using Twitter and Facebook, aiming for 3 posts per week. Posts will include PG content, links to PGs, project updates/summaries and news pieces. KUs will also be invited to promote our website through their Twitter accounts.

Evaluation: Data from Google Analytics,³⁸ Twitonomy³⁹ and Altmetric⁴⁰ inform evaluation of website usage.

Youth and Adult Family Member Website Workshop: A half-day workshop will be held to enable youth and family members to review website planning with our web/media expert and integrate youth and family member preferences and needs.

Webinar: Representatives of each of the four KU groups will participate in webinar development to ensure it meets their needs, and invite their members to participate in one of the four planned webinar offerings.

Manuscripts: At least two peer-reviewed open-access publications will be developed.

Written Materials: Tailored project summaries, developed with input from our KU groups will be hosted on our website and shared with our KU partners.

Workshops: Workshops and presentations will be held at KU meetings [e.g., PolicyWise for Children and Families event, Canadian Academy of Child and Adolescent Psychiatry (CACAP) conference, Canadian Pediatric Society (CPS) conference, College of Family Physicians of Canada (CFPC) Family Health Forum, Healthy Child Manitoba event, Ontario Centre of Excellence in Child and Youth Mental Health partners (e.g., Parents for Children's Mental Health; The New Mentality), Ontario Ministries [Children and Youth Services (MCYS), Health and Longterm Care (MOHLTC), Education (EDU)].

CONCLUDING STATEMENT

Children and youth deserve the best possible mental health services. To this end, this synthesis, informed by user needs (clinicians, mental health service planner, youth, adult family members) will: advance knowledge by identifying trustworthy CYMH PGs, and documenting the strengths and weaknesses of existing CYMH PGs; guide future PG development by formulating recommendations for how to improve CYMG PG quality, completeness and usefulness; and facilitate knowledge application by creating user informed dissemination tools to promote the use of high quality PGs.

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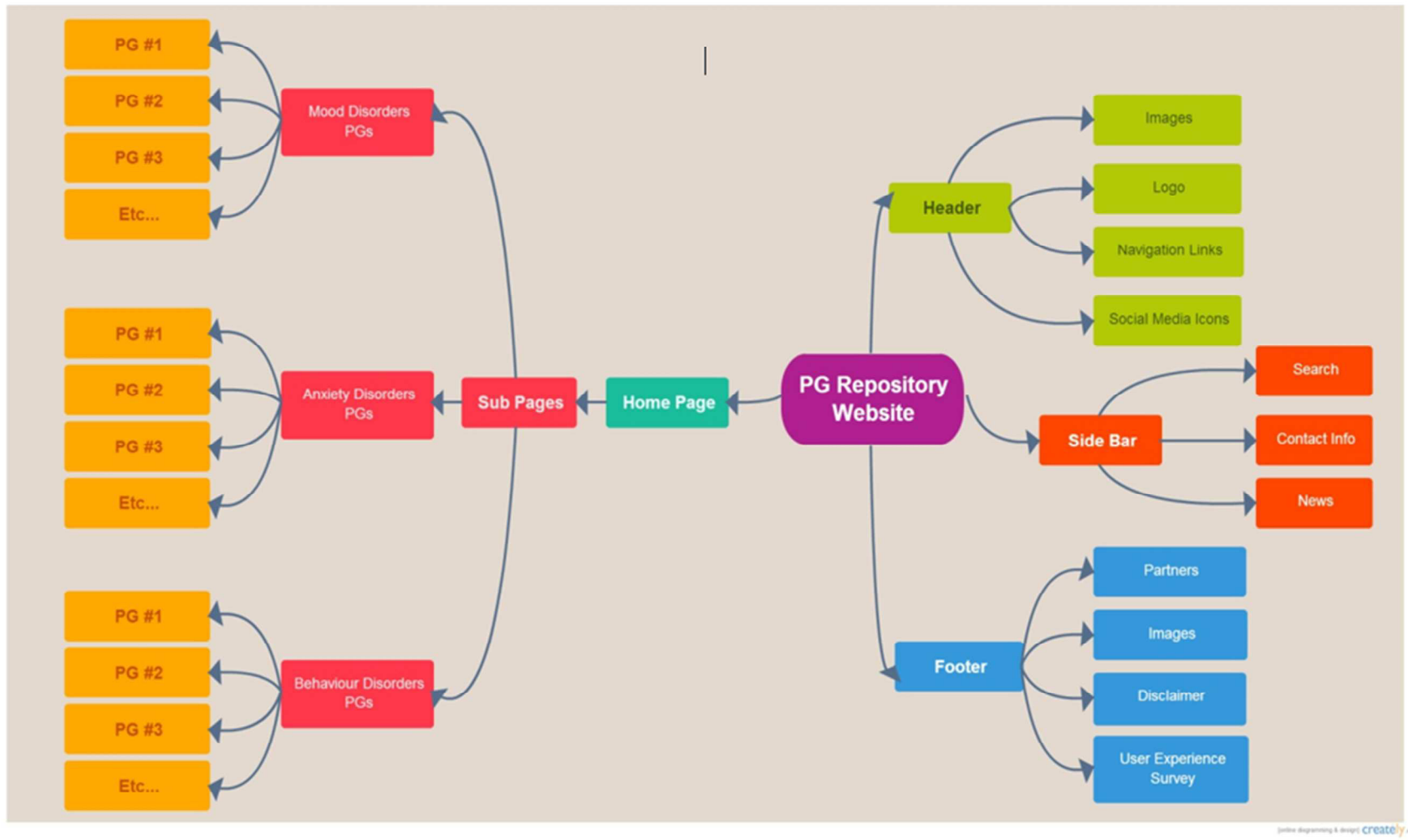
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Figure 1: Integrated Knowledge Translation Approach and Timeline



Figure 2: Website Design Elements



Online Diagramming & Design Createy.com

PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol*

Section and topic	Item No	Page#	Checklist item
ADMINISTRATIVE INFORMATION			
Title:			Towards High Quality, Useful Practice Guidelines for Child and Youth Mental Health Disorders: Protocol for a Systematic Review and Consensus Exercise.
Identification	1a	1	Identify the report as a protocol of a systematic review
Update	1b	N/A	If the protocol is for an update of a previous systematic review, identify as such
Registration	2	3	If registered, provide the name of the registry (such as PROSPERO) and registration number
Authors:			
Contact	3a	1	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author
Contributions	3b	2	Describe contributions of protocol authors and identify the guarantor of the review
Amendments	4	N/A	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
Support:			
Sources	5a	2	Indicate sources of financial or other support for the review
Sponsor	5b	N/A	Provide name for the review funder and/or sponsor
Role of sponsor or funder	5c	2	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol
INTRODUCTION			
Rationale	6	4	Describe the rationale for the review in the context of what is already known
Objectives	7	4	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)
METHODS			
Eligibility criteria	8	5	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review
Information sources	9	5	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage
Search strategy	10	5	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated

Study records:			
Data management	11a	5	Describe the mechanism(s) that will be used to manage records and data throughout the review
Selection process	11b	5	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)
Data collection process	11c	6	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators
Data items	12	6	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications
Outcomes and prioritization	13	6	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale
Risk of bias in individual studies	14	6	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
Data synthesis	15a	6	Describe criteria under which study data will be quantitatively synthesised
	15b	6	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I^2 , Kendall's τ)
	15c	N/A	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)
	15d	N/A	If quantitative synthesis is not appropriate, describe the type of summary planned
Meta-bias(es)	16	N/A	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)
Confidence in cumulative evidence	17	N/A	Describe how the strength of the body of evidence will be assessed (such as GRADE)

*** It is strongly recommended that this checklist be read in conjunction with the PRISMA-P Explanation and Elaboration (cite when available) for important clarification on the items. Amendments to a review protocol should be tracked and dated. The copyright for PRISMA-P (including checklist) is held by the PRISMA-P Group and is distributed under a Creative Commons Attribution Licence 4.0.**

From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015 Jan 2;349(jan02 1):g7647.

BMJ Open

Towards High Quality, Useful Practice Guidelines for Child and Youth Mental Health Disorders: Protocol for a Systematic Review and Consensus Exercise.

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2017-018053.R1
Article Type:	Protocol
Date Submitted by the Author:	27-Sep-2017
Complete List of Authors:	Bennett, Kathryn; McMaster University Faculty of Health Sciences, Health Research Methods, Evidence and Impact (formerly Clinical Epidemiology and Biostatistics) Duda, Stephanie ; McMaster University, Health Research Methods, Evidence and Impact (formerly Clinical Epidemiology and Biostatistics) Brouwers, Melissa; McMaster University Szatmari, Peter; Centre for Addiction and Mental Health Newton, Amanda; University of Alberta McLennan, John; University of Ottawa Department of Psychiatry Sundar, Purnima; Ontario Centre of Excellence for Child and Youth Mental Health Cleverley, Kristin; University of Toronto, Faculty of Nursing Charach, Alice; Hospital for Sick Children Henderson, Joanna; Centre for Addiction and Mental Health, ; University of Toronto Faculty of Medicine, Psychiatry Courtney, Darren; Centre for Addiction and Mental Health Rice, Maureen; McMaster University
Primary Subject Heading:	Mental health
Secondary Subject Heading:	Evidence based practice
Keywords:	clinical practice guidelines, children, adolescents, MENTAL HEALTH

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Towards High Quality, Useful Practice Guidelines for Child and Youth Mental Health Disorders: Protocol for a Systematic Review and Consensus Exercise.

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9 **Keywords:** Practice Guidelines Child; Adolescent; Mental Health
10

11 **Author Contributions:** KB conceived the initial idea for the study and is the guarantor of the protocol. KB and
12 SD wrote the first draft of the protocol. KB, SD, MB, PS, AN, JM, PS, KC, AC, JH, CC, DC and MR reviewed
13 multiple versions of the protocol providing critical comment and further developing the methods. KB, SD, MB, PS,
14 AN, JM, PS, KC, AC, JH, CC, DC and MR read and approved the final version of the manuscript.
15

16 **Funding Statement:** This work is supported in part by the Margaret and Wallace McCain Centre for Child, Youth
17 & Family Mental Health, Centre for Addiction and Mental Health, Toronto, Ontario. The funder had no role in
18 developing or implementing the study protocol.
19

20 **Competing Interests Statement:** All authors report they have nothing to declare.
21

22 **Data Sharing Statement:** The findings from our systematic review and nominal group consensus exercises will
23 be disseminated through a specially developed website. Additional information can be requested from the
24 principal investigator.
25

26 **Acknowledgements:** We thank the members of our youth and adult family member advisory committee (S
27 Cannon, Z Johnstone, L Langford, G Loucks, A Messaoudi and H Smith) for their contributions to proposal
28 methods related to youth and adult family member engagement.
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ABSTRACT

Introduction: The quality of clinical practice guidelines (PGs) has not been evaluated in child and youth mental health (CYMH). To address this gap we will: i) conduct a systematic review to answer the question 'among eligible PGs relevant to the prevention or treatment of CYMH conditions, which PGs meet criteria for minimum and high quality?; ii) apply nominal group methods to create recommendations for how CYMH PG quality, completeness and usefulness can be strengthened.

Methods and Analysis: Systematic Review: Potentially eligible PGs will be identified in 12 databases using a reproducible search strategy developed by a research librarian. Trained raters will: i) apply pre-specified criteria to identify eligible PGs relevant to depression, anxiety, suicidality, bipolar disorder, behaviour disorder [attention-deficit hyperactivity disorder, oppositional defiant disorder, conduct disorder] and substance use disorder; ii) extract descriptive data; and iii) assess PG quality using the Appraisal of Guidelines for Research and Evaluation (AGREE II) tool. Scores on three AGREE-II domains (rigor of development, stakeholder involvement, editorial independence) will designate PGs as minimum ($\geq 50\%$) or high quality ($\geq 70\%$). Nominal Group: Four CYMH PG knowledge-user groups (clinicians, mental health service planners, youth and adult family members) will participate in structured exercises derived using nominal group methods to generate recommendations to improve PG quality, completeness and usefulness.

Ethics and Dissemination: Ethics approval is not required. Study products will be disseminated as follows. A cross-platform website will house eligible CYMH PGs and their quality ratings. Twitter and Facebook tools will promote it to a wide variety of PG users. Data from Google Analytics, Twitonomy, and Altmetrics will inform usage evaluation. Complementary educational workshops will be conducted for CYMH professionals. Print materials and journal articles will be produced.

Registration Details: PROSPERO 2017:CRD42017060738

Strengths and Limitations

- This systematic review will provide currently unavailable information about which existing CYMH PGs are trustworthy, and should be used by clinicians, mental health service planners, youth and family members.
- Our protocol adheres to PRISMA- P criteria.
- Nominal group consensus exercises conducted with four different types of PG users will identify how the quality, completeness and usefulness of CYMH PGs can be strengthened.
- The review cannot address barriers and facilitators of successful guideline implementation.
- Our review is limited to English language guidelines.
- By focusing on diagnosable conditions, it is possible that some important preventive interventions may not be included.

INTRODUCTION

Effective interventions are increasingly available to assess, prevent and treat child and youth mental health problems.¹ However, studies repeatedly show that many children and youth experiencing mental health difficulties may not benefit from these interventions. For example, even in resource rich settings only about 20-30% of youth in need are able to obtain any child and youth mental health (CYMH) care.² Equally concerning are findings that suggest even when children and youth are able to access CYMH services, the quality of care received is uneven at best, with wide variation in the types of services delivered within a single jurisdiction³⁻⁶ Clinical practice guidelines (PGs) are decision aids that have the potential to help strengthen the quality of CYMH care, and improve CYMH outcomes.⁷ The recommendations contained in high quality PGs consist of statements about the comparative benefits and risks of different intervention options, systematically derived using rigorous critical appraisal and research synthesis methodologies. These statements can guide clinical decisions and mental health service planning, reduce variation in the services delivered, and facilitate informed decision-making by youth experiencing mental health difficulties and their family members.⁷⁻⁹ Numerous CYMH PGs are now available, and leading national and international organizations regularly call for their increased production and use.^{10, 11}

The availability of high-quality, 'trustworthy' PGs is a non-negotiable pre-requisite to promoting their development and use.⁷ Otherwise, PG implementation may not improve the quality of CYMH care, resulting in little or no mental health benefit to children and youth, and potentially increasing the risk of harm and wasted resources due to the implementation of flawed PG recommendations. PG quality has received considerable attention, particularly in internal medicine and its sub-specialties.¹²⁻¹⁴ International criteria have been developed to guide the production of rigorous, clinically trustworthy PGs,⁷ and The Appraisal of Guidelines for Research and Evaluation (AGREE II) tool,¹⁵⁻¹⁷ derived from these standards has been used to appraise and improve PG quality relevant to adult chronic disease, and to enable PG users to choose PGs based on quality. More recently the Institute of Medicine (IOM) has proposed eight similar PG quality standards,¹⁸ and work has begun to translate them into a new tool for appraising quality/clinical validity.¹⁹

In contrast, to date, very little attention has been given to the quality of PGs relevant to CYMH conditions.²⁰ The need to fill this gap is long overdue. We need to know which available CYMH PGs are trustworthy, and how to design initiatives to strengthen the capacity of the CYMH field to produce high quality, useful PGs. As a first step, we appraised the rigor of the development methods currently used by groups who create CYMH PGs.²⁰ Five different sets of development methods were identified within 70 individual CYMH PGs. Evaluation of these sets of development methods using both the AGREE II and IOM criteria revealed that roughly 70% of CYMH PGs may not be trustworthy because the methods used to develop them are weak, pointing to the urgent need to evaluate the quality of the actual CYMH PGs. The protocol reported below addresses this need and will proceed in three phases. First, a systematic review will be conducted to answer the question 'Among eligible PGs relevant to the assessment, prevention or treatment of common CYMH conditions, which PGs meet criteria for minimum and high quality?'. The goal is to increase PG user awareness of specific trustworthy CYMH PGs by identifying all available CYMH PGs and determining which ones meet criteria for minimum and high quality standards using the

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3 AGREE-II appraisal tool. Second, working with four PG knowledge-user (KU) groups (i.e.,
4 clinicians, mental health service planners, youth and adult family members), nominal group
5 methods will be employed to develop recommendations to guide improvements in CYMH PG
6 quality, completeness and usefulness. The goal is to provide consensus-based statements that
7 can inform capacity building initiatives including how to strengthen CYMH PG quality through
8 increased attention to rigorous develop methods, the identification of a core-set of CYMH PGs,
9 how to improve user skills relevant to choosing PGs based on quality, how to increase the
10 alignment of PG content with different KU group needs, and how to co-ordinate the work of
11 different PG development groups so that PG quality is strengthened through increased efficiency
12 and collaboration. Finally, a set of dissemination activities will be undertaken to make the results
13 of this work widely available to both PG users and developers.
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17 **METHODS AND ANALYSIS**

18 **Systematic Review (SR) Methods**

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22 Our methods adhere to Cochrane Collaboration²¹ and PRISMA standards [Preferred Reporting
23 Items for Systematic Reviews/Meta-analyses and Protocols].^{22, 23}
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25
26 **Research Question:** Among eligible PGs relevant to the assessment, prevention or treatment of
27 common CYMH conditions, which PGs meet criteria for minimum and high quality?
28

29
30 **Eligibility Criteria:** Documents identified using the search strategy described below will be
31 deemed eligible if they meet the following criteria: (i) English language; (ii) documents labeled
32 practice guideline, practice parameter, or consensus or expert committee recommendations, or
33 documents with the explicit objective or methods to develop original guidance/recommendations;
34 (iii) published, revised, updated or reaffirmed between 2005-2017; (iv) address the assessment,
35 prevention or treatment of one of the following CYMH disorder groups (as defined by DSM-5),²⁴
36 mood (major depressive disorder, dysthymia, bipolar disorder), anxiety (agoraphobia, generalized
37 anxiety disorder, social phobia, specific phobia, panic disorder, separation anxiety disorder), self-
38 harm/suicidality, disruptive behavior (attention deficit hyperactivity disorder, oppositional defiant
39 disorder, conduct disorder) and substance use disorders; and (v) relevant to children and youth \leq
40 18 years of age. Documents meeting the foregoing inclusion criteria will be excluded if judged to
41 be a narrative or systematic literature review that contains summary statements regarding clinical
42 implications/recommendations.
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46 **Information Sources:** Following advice from an experienced health research librarian (Rice), we
47 will search Medline, EMBASE, PsycINFO and CINAHL. Our grey literature search will include PG
48 specific sites (i.e., National Guideline Clearinghouse, Canadian Medical Association Infobase,
49 National Institute for Health and Care Excellence, Guidelines International Network International
50 Guideline Library, Australia's Clinical Practice Guidelines Portal and New Zealand Guidelines
51 Group). It will also target mental health-related organizations (e.g., American Academy of Child
52 and Adolescent Psychiatry; Canadian Mental Health Association) and include a broad search
53 using Google. All searches will be supplemented by: screening reference lists of eligible PGs;
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1
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3 using cited reference searching to reference forward eligible PGs; hand-searching key journals;
4 soliciting recommendations from team members.
5

6 **Search Strategy:** Our research librarian will use a strategy that combines subject heading and
7 text terms for mental health AND guidelines AND children/adolescents. The strategy will be
8 developed in Medline and then translated to terms appropriate to other databases and peer
9 reviewed.²⁵ A draft search strategy is provided in supplementary file 1.
10

11 **Information Management:** Search results will be stored using bibliographic management
12 software.
13

14 **Selection Process:** One methodologist with expertise in the identification and quality
15 assessment of PGs will independently screen the titles and abstracts of all unduplicated identified
16 records using Reference Manager software. Only documents that clearly do not meet our
17 inclusion criteria will be excluded at this stage, for example, title and/or abstract unambiguously
18 indicates that the document: i) is specific to adults; ii) does not address one or more of the target
19 CYMH disorders; or iii) publication date is prior to 2005. All remaining documents will proceed to
20 full-text screening by two reviewers. A research assistant will obtain full-text records for all
21 potentially relevant documents identified during title and abstract screening. Then two
22 methodologists working independently will apply the inclusion criteria to full-text documents to
23 identify eligible PGs. Disagreements regarding eligibility are then identified and resolved through
24 discussion with the principal investigator (PI).
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29 **Data Items and Collection Process:** A trained research staff member will extract descriptive
30 data for each eligible PG using a standardized form to capture: date produced; author;
31 organization type (government, medical society, special group, other); country of origin; CYMH
32 disorder; target population (children and youth only; children, youth and adults); guideline
33 purpose (assessment, prevention, treatment). Training will include refinement of item rewording
34 as needed to improve clarity.
35
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37 **PG Quality Assessment Methods, Raters, Training:** PG quality ratings will be conducted using
38 AGREE II.¹⁷ This validated tool is used widely and consists of 23 questions grouped in 6 domains:
39 scope and purpose, stakeholder involvement, rigor of development, clarity of presentation,
40 applicability, editorial independence. Two additional items assess overall quality. Item response
41 options range from 1 to 7. Two reviewers (MSc in research methods) will participate in a three stage
42 training exercise: completion of the online AGREE II Overview Tutorial,²⁶ a detailed review of the
43 AGREE II User's Manual,¹⁷; and an online practice assessment of an example PG.²⁷ Reviewers will
44 meet with the principal investigator to review disagreements and 'lessons learned' about AGREE II.
45 Following training, the two reviewers will independently apply AGREE II criteria to eligible PGs
46 using the My AGREE PLUS online platform.²⁸ For each item, reviewers will indicate their score
47 and justify it by recording document page and paragraph numbers for the information supporting
48 each item in the comment box. When applying AGREE II criteria, reviewers will ensure that any
49 companion documents for a given PG (e.g., tools and resources to aid PG implementation,
50 technical reports, health economic analyses, PG evaluation tools, etc. referenced in the main
51 document) were considered in addition to the main PG document. Once the two raters have
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3 completed their independent AGREE-II ratings, inter-rater differences ≥ 2 points on initial item
4 scores will be identified and discussed by the two raters and the PI. This cut-point has been
5 chosen as it is both pragmatic and conservative with respect to capturing scoring differences that
6 arise from misinformation (i.e., guideline documents are often very long and detailed and it is
7 possible that a reviewer may simply miss important information) rather than differences in
8 judgment regarding the content of the guideline documentation. Following discussion, reviewers
9 are asked to reconsider and possibly revise their item scores; however, numerical agreement on
10 the score assigned for each AGREE II item is not required. Thus, scoring differences that occur
11 due to missed information in the documentation should be resolved during the discussion of
12 disagreements. Any differences that remain following discussion should represent between rater
13 differences in judgment (rather than failure to detect specific pieces of information within PG
14 documents). Final item scores will then be aggregated into 6 domain scores by summing both
15 reviewers' scores for all items within a given domain and standardizing as a percentage of the
16 maximum possible score (ranging from 0-100%) using the formula described in the AGREE II
17 User's Manual.¹⁷

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22 ***PG High and Minimum Quality Rating Criteria:*** The AGREE II User's Manual does not provide
23 criteria to designate PGs as high or low quality. Thus, the interpretation of domain scores and
24 overall PG quality assessments are determined by the user. We will use scores on three AGREE
25 II domains - stakeholder involvement, rigor of development (that is, rigorous consideration of the
26 relevant research evidence base), and editorial independence (management of academic and
27 financial conflict of interest) - to classify PGs according to quality. Minimum quality PGs will be
28 defined as those that receive a domain score $\geq 50\%$ on all three domains. High quality PGs will
29 be defined as those that obtain a domain score $\geq 70\%$ on all three domains. We selected these
30 three domains because they address the extent to which risk of bias is minimized in the
31 identification and interpretation of the research evidence used to derive the guideline
32 recommendations. The remaining three domains, although important, do not evaluate the clinical
33 validity and trustworthiness of the PG; rather they focus on the problem statement, clarity of
34 presentation and implementability.

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38 Data Synthesis and Statistical Techniques:

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40 PG Characteristics: Descriptive statistics (means, proportions) will be used to summarize eligible
41 PG characteristics.

42
43 Rater Agreement for AGREE-II Scores: We will calculate the intraclass correlation coefficient
44 (ICC) to assess inter-rater agreement²⁹ and use Fleiss' categories to classify the level of
45 agreement: poor (0-0.40), fair to good (0.41-0.75), and excellent (> 0.75).³⁰ SPSS, version 23 will
46 be used to perform the statistical analyses.

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48
49 Guideline Quality: To answer our SR research question, each eligible PG will be classified as
50 high quality or minimum quality using the AGREE-II methods and classification criteria described
51 above. The remaining individual domain scores for each PG will be reported for descriptive
52 purposes. Our narrative summary will address the extent to which guidelines deemed high
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3 quality and minimum quality also perform well on the other three domains (i.e., achieve our score
4 cut-offs for minimum and high quality).
5

6 The six domain scores and overall guideline quality scores will also be used to describe the
7 overall quality of CYMH guidelines. More specifically, mean domain scores and mean overall
8 guideline quality scores for each disorder group will be calculated, and a narrative synthesis of
9 guideline methodologic strengths and weaknesses will be conducted.
10

11
12 The mean domain scores and overall scores for each guideline will also be grouped by source
13 developer (e.g., government agency, specialty society, independent expert group or other) to
14 explore descriptively the extent to which each of these groups are more or less likely to produce
15 high quality guidelines than other groups. Again, narrative synthesis methods will be used to
16 summarize these findings.
17

18 *Nominal Group Methods*

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20
21 Research Question: How can the quality and usefulness of PGs for CYMH disorders be
22 strengthened?
23

24 To develop recommendations to guide future CYMH PG development, we will convene four
25 CYMH PG knowledge-user groups, namely clinicians, mental health service planners, youth and
26 adult family members and engage them in a series of structured exercises derived using nominal
27 group methods and the findings of the SR.^{31, 32}
28

29
30 Recommendation Development Group (RDG) Membership: Group membership influences the
31 outcomes of consensus exercises. Heterogeneous groups representing the range of relevant
32 perspectives are preferred as they are more likely to produce judgments that reflect a
33 conservative or middle ground.^{7, 33} Accordingly, for each PG user group, we will form groups
34 composed of 10 individuals. Clinicians and mental health service planners will be identified
35 through nominations by project team investigators. Youth (aged 8 to 18 years) and adult family
36 members will be nominated by the members of our youth and adult family member advisory
37 committee (see section below re committee membership and involvement to date in protocol
38 development). Once the four groups are assembled, members will be asked if important
39 viewpoints are not represented, and additional members (up to 3) will be invited to participate as
40 needed.
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44 Managing Conflict of Interest: Methods consistent with current international standards will be
45 used.³⁴ RDG participants will be asked to disclose financial or intellectual conflicts relevant to
46 CYMH PG development. The project principal investigator in consultation with other co-
47 investigators as needed will review all disclosed conflicts and make decisions regarding whether
48 an individual should be recused from all or a portion of the recommendation development
49 exercise.
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51
52 Generating Recommendations: A structured questionnaire, face-to-face meeting interactions and
53 on-line voting derived from nominal group methods will be used.
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3 Structured Pre-Meeting Questionnaire: RDG members will respond to an electronic questionnaire
4 prior to a face-to-face meeting. The content of the questionnaire will be derived from the findings
5 of the SR and supported by relevant supplemental information. Provisional questions include:
6

7
8 1. i) Using AGREE II as a framework and the SR findings, how should minimum quality
9 standards for CYMH PGs be defined? ii) Based on the results of the SR, what methodologic
10 quality criteria should be the focus of capacity building initiatives designed to improve PG quality?
11 2. What CYMH PGs constitute a core set (including a rationale based on prevalence and burden
12 of illness)? 3. What content and PG development processes are needed to ensure that PGs are
13 useful to specific types of KUs: i) clinicians (child psychiatrists, family physicians, pediatricians,
14 nurses, psychologists and social workers); ii) mental health service planners in provincial
15 government ministries, hospitals and community agencies; iii) children and youth; and iv) adult
16 family members? 4. How can increased collaboration between PG development groups be
17 encouraged in order to strengthen PG quality and usefulness, and reduce duplication?
18
19

20 Each question will be linked to supplemental material based on SR findings and/or the content of
21 the minimum and high quality PGs. For example, for question 1 the quality ratings for each PG
22 (i.e., domain scores) will be presented in tabular form. Each RDG participant will be asked to
23 indicate whether each domain is relevant to defining minimum quality standards, and if so what
24 score cut-point should be used? Similarly, participants will be asked to define high quality using
25 the AGREE-II domains. For provisional question 3 (What content and PG development
26 processes are needed to ensure that PGs are useful to specific types of PG-users?), each RDG
27 participant will be provided with electronic access to supplementary materials (e.g., template
28 summary of PG content, template summary of PG development process, copy of actual PG)
29 derived from the minimum and high quality PGs, and asked to identify specific aspects of the
30 content and developmental processes that are essential and/or missing from their user
31 perspective.
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35 Face-to-Face Meeting: First, the SR findings and collated pre-meeting questionnaire results will
36 be reviewed in a large group session. Then each KU group will work independently in small
37 groups with an expert facilitator who is not part of the research team to draft recommendations
38 related to each pre-meeting question. The goal is to ensure that each PG user group has an
39 equal voice, and that all individuals have the opportunity to express their views. Each small
40 group will then report their draft recommendations for each question to the full group. The
41 principal investigator will collate draft recommendations into a final provisional set for review in
42 the final session of the day. The final set will include draft recommendations that are common to
43 all four PG user groups and draft recommendations that are unique to a specific PG-user group.
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47 Generating Final Recommendations and Quantifying the Level of Consensus: We will finalize the
48 content of the recommendations drafted in the face-to-face meeting and quantify RDG member
49 agreement (0 to 100%) for each recommendation as follows. First, forty-eight hours after the
50 face-to-face meeting, RDG members will indicate their level of agreement with each draft
51 recommendation using a 7-point scale (1 = strongly disagree; 7 = strongly agree). Ratings will be
52 collected anonymously in an online survey. RDG members will then be provided with a summary
53 of scores, and participate in a conference call one week later to discuss and revise each
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3 recommendation as necessary. Finally, RDG members will re-rate their agreement with each
4 revised recommendation in a second anonymous online exercise. Although consensus (i.e.,
5 100% agreement among RDG members on the rating assigned to a recommendation) may be
6 achieved for a specific recommendation, this is not our aim. Quantifying the extent of variation in
7 agreement/disagreement with the recommendations produced is an integral part of accurate
8 communication of RDG views.⁷
9

10 11 *Youth and Family Member Participation in Protocol Development and Preparation Prior* 12 *to* 13 *Project Startup* 14 15

16 Informed by patient and public involvement methodology, we have already convened a youth and
17 adult family member advisory group (4 youth, 2 adult family members) to provide leadership
18 throughout the project.⁹ During proposal development, this group first planned the type of
19 involvement they wished to have in the project using the following 'meaningful engagement'
20 continuum: consultation, involvement, partnership and shared leadership.^{35, 36} The results of their
21 deliberations are as follows. First they will participate as learners in the SR to understand PGs
22 and quality appraisal methods. Then, with this preparation, their goal in subsequent project
23 stages will be participation/shared leadership (e.g., develop recommendations for how PGs can
24 be more acceptable/useful to youth and adult family members; create dissemination tools tailored
25 to the needs of youth and adult family members). Specific processes and roles are aligned with
26 engagement principles including reciprocal relationships, co-learning, partnerships, transparency,
27 honesty, trust.^{35, 36}
28
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31 *Training Workshops for Youth and Family Members* 32 33

34 Four training workshops for youth and adult family members will be conducted prior to
35 participating in the SR, structured nominal group exercises, face-to-face meeting, online survey
36 and conference call. First, youth and adult family members will participate in three half-day
37 workshops to learn about PGs and the AGREE II quality assessment process. The goal is to
38 support capacity development, and facilitate their engagement in the SR and recommendation
39 development process. The first workshop will include a 1:1 orientation for each individual and a
40 'Terms of Reference (ToFR) document will be co-developed with the entire group. This document
41 will capture the core engagement principals that guide our project and the continuum of
42 meaningful engagement we are utilizing (see preceding section). Workshop one will also address
43 processes to support conflict resolution and clinical support.
44
45

46 A fourth workshop will be convened prior to the full team meeting focusing on recommendation
47 development to: i) prepare youth and adult family members for their role in generating
48 recommendations relevant to PG acceptability/usefulness; and ii) enable them to provide input
49 into the full team meeting agenda to ensure a meaningful process that facilitates youth and adult
50 family member engagement in the deliberations and decisions.
51
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53 We will also conduct briefing sessions prior to and following each workshop, and provide ongoing
54 support as appropriate to facilitate sustained engagement.
55

Integrated Knowledge Translation

Throughout the project, we will use integrated knowledge translation (iKT) methods to ensure our goals and outputs are relevant to the needs of our four KU user groups.³⁷ Figure 1 illustrates how the core project team will interact with our full team of researchers and KUs to accomplish our iKT goals in each project stage.

Potential Challenges

Conflict of Interest: If not managed appropriately, conflict of interest could introduce bias into our work. We will address this risk as follows. First, AGREE II will be applied by MSc level raters with no potential for intellectual or financial conflict of interest that might systematically bias ratings. Second, conflicts among RDG members will be declared and managed as described above.

Number of PGs: Our pilot work shows that the number of PGs that meet our eligibility criteria can be rated with AGREE II in the timeline proposed (2 years).

Team Member Engagement: All team members have reviewed our project activities and timeline and have provided written commitments to participate in project activities as shown in Figure 1.

Youth and Adult Family Member Engagement: This is an area of demonstrated expertise for one of our team members (PS). She has already convened our youth and adult family member advisory group, and successfully engaged them in planning their involvement in each stage of the project.

ETHICS AND DISSEMINATION

Ethics: This systematic review and consensus exercise protocol is considered a quality improvement initiative and hence, does not require ethics approval³⁸

Web-based PG Repository Platform to Disseminate Quality Assessed PGs: A cross-platform (i.e., desktop, tablet, and smartphone accessible) website will be created including content tabs to facilitate navigation, a contact form for users to submit questions and a user experience survey to solicit feedback. Figure 2 presents website design elements.

Website Promotion: To disseminate our findings and increase PG user knowledge of trustworthy CYMH PGs, we will launch a social media campaign to engage with the CYMH community using Twitter and Facebook, aiming for 3 posts per week. Posts will include PG content, links to PGs, project updates/summaries and news pieces. KUs will also be invited to promote our website through their Twitter accounts.

Evaluation: Data from Google Analytics,³⁹ Twitonomy⁴⁰ and Altmetric⁴¹ inform evaluation of website usage.

Youth and Adult Family Member Website Workshop: A half-day workshop will be held to enable youth and family members to review website planning with our web/media expert and integrate youth and family member preferences and needs.

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3 **Webinar:** Representatives of each of the four KU groups will participate in webinar development
4 to ensure it meets their needs, and invite their members to participate in one of the four planned
5 webinar offerings.
6

7 **Manuscripts:** At least two peer-reviewed open-access publications will be developed.
8

9 **Written Materials:** Tailored project summaries, developed with input from our KU groups will be
10 hosted on our website and shared with our KU partners.
11

12 **Workshops:** Workshops and presentations will be held at KU meetings [e.g., PolicyWise for
13 Children and Families event, Canadian Academy of Child and Adolescent Psychiatry (CACAP)
14 conference, Canadian Pediatric Society (CPS) conference, College of Family Physicians of
15 Canada (CFPC) Family Health Forum, Healthy Child Manitoba event, Ontario Centre of
16 Excellence in Child and Youth Mental Health partners (e.g., Parents for Children's Mental Health;
17 The New Mentality), Ontario Ministries [Children and Youth Services (MCYS), Health and
18 Longterm Care (MOHLTC), Education (EDU)].
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23 **CONCLUDING STATEMENT**

24
25 Children and youth deserve the best possible mental health services. To this end, this synthesis,
26 informed by user needs (clinicians, mental health service planner, youth, adult family members)
27 will: advance knowledge by identifying trustworthy CYMH PGs, and documenting the strengths
28 and weaknesses of existing CYMH PGs; guide future PG development by formulating
29 recommendations for how to improve CYMG PG quality, completeness and usefulness; and
30 facilitate knowledge application by creating user informed dissemination tools to promote the use
31 of high quality PGs.
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Figure Legends

Figure 1: Team members will conduct their work over a 24 month period as described in the steps shown.

Figure 2: Our practice guideline respository website will be structured as shown providing access to quality appraised guidelines organized by disorder.

For peer review only

Figure 1: Integrated Knowledge Translation Approach and Timeline

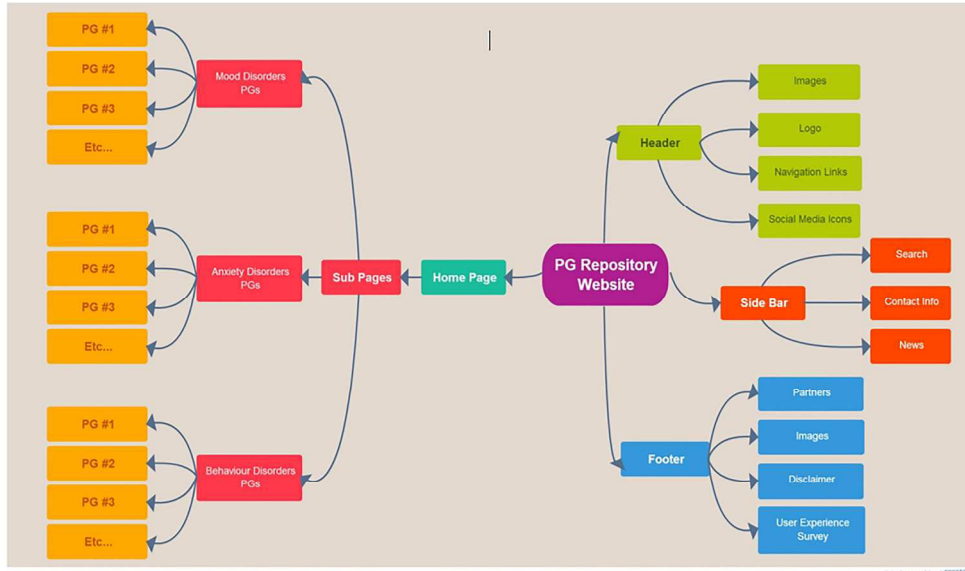


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Figure 2: Website Design Elements



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Supplement 1: Detailed Search Strategy for Depression and Anxiety PGs

Medline-OVID

July 23, 2015

1. exp clinical pathway/
2. exp clinical protocol/
3. exp consensus/
4. exp consensus development conference/
5. exp consensus development conferences as topic/
6. critical pathways/
7. exp guideline/
8. guidelines as topic/
9. exp practice guideline/
10. practice guidelines as topic/
11. health planning guidelines/
12. treatment guidelines.mp.
13. (guideline or practice guideline or consensus development conference or consensus development conference, NIH).pt.
14. (position statement* or policy statement* or practice parameter* or best practice*).ti,ab.
15. (standards or guideline or guidelines).ti.
16. ((practice or treatment*) adj guideline*).ab.
17. (CPG or CPGs).ti.
18. Consensus*.ti.
19. consensus*.ab. /freq=2
20. ((critical or clinical or practice) adj2 (path or paths or pathway or pathways or protocol*)).ti,ab.
21. recommendat*.ti.
22. (care adj2 (standard or path or paths or pathway or pathways or map or maps or plan or plans)).ti,ab.
23. (algorithm* adj2 (screening or examination or test or tested or testing or assessment* or diagnosis or diagnoses or diagnosed or diagnosing)).ti,ab.
24. (algorithm* adj2 (pharmacotherap* or chemotherap* or chemotreatment* or therap* or treatment* or intervention*)).ti,ab.
25. or/1-24
26. mental disorders/ or anxiety disorders/ or agoraphobia/ or panic disorder/ or phobic disorders/
27. affective disorders, psychotic/ or bipolar disorder/ or depressive disorder/ or depressive disorder, major/ or dysthymic disorder/
28. mental disorders/ or anxiety, separation/ or "attention deficit and disruptive behavior disorders"/ or attention deficit disorder with hyperactivity/ or conduct disorder/
29. oppositional defiant disorder.mp.
30. Mental health/
31. (mental health or emotional health or depression or anxiety or bipolar or dysthymia or agoraphobia or phobia or phobic or panic disorder or conduct disorder or disruptive behavio?r disorder* or attention deficit).kw,ti.

32. 26 or 27 or 28 or 29 or 30 or 31
33. (pediatric* or paediatric* or child* or adolescent? or youth? or teenager? or teen?).ti,jn.
34. 25 and 32
35. 33 and 34
36. limit 34 to ("all child (0 to 18 years)" or "preschool child (2 to 5 years)" or "child (6 to 12 years)" or "adolescent (13 to 18 years)")
37. 35 or 36
38. limit 37 to english language
39. limit 38 to yr="2005 - 2015"

EMBASE-OVID

July 23 2015

1. exp clinical pathway/
2. exp clinical protocol/
3. exp consensus/
4. exp consensus development conference/
5. exp consensus development conferences as topic/
6. critical pathways/
7. exp guideline/
8. guidelines as topic/
9. exp practice guideline/
10. practice guidelines as topic/
11. health planning guidelines/
12. treatment guidelines.mp.
13. (guideline or practice guideline or consensus development conference or consensus development conference, NIH).pt.
14. (position statement* or policy statement* or practice parameter* or best practice*).ti,ab.
15. (standards or guideline or guidelines).ti.
16. ((practice or treatment*) adj guideline*).ab.
17. (CPG or CPGs).ti.
18. Consensus*.ti.
19. consensus*.ab. /freq=2
20. ((critical or clinical or practice) adj2 (path or paths or pathway or pathways or protocol)).ti,ab.
21. recommendat*.ti.
22. (care adj2 (standard or path or paths or pathway or pathways or map or maps or plan or plans)).ti,ab.
23. (algorithm* adj2 (screening or examination or test or tested or testing or assessment* or diagnosis or diagnoses or diagnosed or diagnosing)).ti,ab.
24. (algorithm* adj2 (pharmacotherap* or chemotherap* or chemotreatment* or therap* or treatment* or intervention*)).ti,ab.
25. or/1-24
26. exp behavior disorder/ or mental disease/
27. exp anxiety disorder/

28. exp mood disorder/
29. exp mental health/
30. oppositional defiant disorder.mp.
31. (mental health or emotional health or depression or anxiety or bipolar or dysthymia or agoraphobia or phobia or phobic or panic disorder or conduct disorder or disruptive behavior disorder* or attention deficit).kw,ti.
32. or/26-31
33. 25 and 32
34. limit 33 to (child or preschool child <1 to 6 years> or school child <7 to 12 years> or adolescent <13 to 17 years>)
35. (pediatric* or paediatric* or child* or adolescent? or youth? or teenager? or teen?).ti,jn.
36. 33 and 35
37. 34 or 36
38. limit 37 to english language
39. limit 38 to yr="2005 - 2015"

PsycINFO-OVID

July 23 2015

1. exp clinical pathway/
2. exp clinical protocol/
3. exp consensus/
4. exp consensus development conference/
5. exp consensus development conferences as topic/
6. critical pathways/
7. exp guideline/
8. guidelines as topic/
9. exp practice guideline/
10. practice guidelines as topic/
11. health planning guidelines/
12. treatment guidelines.mp.
13. (guideline or practice guideline or consensus development conference or consensus development conference, NIH).pt.
14. (position statement* or policy statement* or practice parameter* or best practice*).ti,ab.
15. (standards or guideline or guidelines).ti.
16. ((practice or treatment*) adj guideline*).ab.
17. (CPG or CPGs).ti.
18. Consensus*.ti.
19. consensus*.ab. /freq=2
20. ((critical or clinical or practice) adj2 (path or paths or pathway or pathways or protocol)).ti,ab.
21. recommendat*.ti.
22. (care adj2 (standard or path or paths or pathway or pathways or map or maps or plan or plans)).ti,ab.

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3 23. (algorithm* adj2 (screening or examination or test or tested or testing or assessment*
4 or diagnosis or diagnoses or diagnosed or diagnosing)).ti,ab.
5 24. (algorithm* adj2 (pharmacotherap* or chemotherap* or chemotreatment* or therap*
6 or treatment* or intervention*)).ti,ab.
7 25. or/1-24
8 26. oppositional defiant disorder.mp.
9 27. (mental health or emotional health or depression or anxiety or bipolar or dysthymia or
10 agoraphobia or phobia or phobic or panic disorder or conduct disorder or disruptive
11 behavio?r disorder* or attention deficit).kw,ti.
12 28. mental disorders/ or exp anxiety disorders/ or exp impulse control disorders/ or exp
13 behavior disorders/ or conduct disorder/
14 29. exp affective disorders/
15 30. oppositional defiant disorder/
16 31. or/26-30
17 32. 25 and 31
18 33. (pediatric* or paediatric* or child* or adolescent? or youth? or teenager? or
19 teen?).ti,jn.
20 34. 32 and 33
21 35. limit 32 to (childhood or adolescence <13 to 17 years>)
22 36. 34 or 35
23 37. limit 36 to english language
24 38. limit 37 to yr="2005 - 2015"

CINAHL -EBSCO

July 23 2015

Search ID#	Search Terms	Search Options
S24	S23	Limiters - Published Date: 20050101-20151231; Language: English Search modes - Boolean/Phrase
S23	S22	Limiters - Age Groups: Infant: 1-23 months, Child, Preschool: 2-5 years, Child: 6-12 years, Adolescent: 13-18 years Search modes - Boolean/Phrase
S22	S14 AND S21	Search modes - Boolean/Phrase
S21	S15 OR S16 OR S17 OR S18 OR S19 OR S20	Search modes - Boolean/Phrase
S20	TI mental health or emotional health or depression or anxiety or bipolar or dysthymia or agoraphobia or phobia or phobic or panic	Search modes - Boolean/Phrase

	disorder or conduct disorder or disruptive behavior?r disorder* or attention deficit	
S19	SU mental health or emotional health or depression or anxiety or bipolar or dysthymia or agoraphobia or phobia or phobic or panic disorder or conduct disorder or disruptive behavior?r disorder* or attention deficit	Search modes - Boolean/Phrase
S18	"oppositional defiant disorder"	Search modes - Boolean/Phrase
S17	"conduct disorder"	Search modes - Boolean/Phrase
S16	(MH "Anxiety Disorders+")	Search modes - Boolean/Phrase
S15	(MH "Mental Disorders") OR (MH "Neurotic Disorders+") OR (MH "Mental Disorders Diagnosed in Childhood+")	Search modes - Boolean/Phrase
S14	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13	Search modes - Boolean/Phrase
S13	TX (algorithm* N2 (pharmacotherap* or chemotherap* or chemotreatment* or therap* or treatment* or intervention*))	Search modes - Boolean/Phrase
S12	TX (algorithm* N2 (screening or examination or test or tested or testing or assessment* or diagnosis or diagnoses or diagnosed or diagnosing))	Search modes - Boolean/Phrase
S11	TX (care N2 (standard or path or paths or pathway or pathways or map or maps or plan or plans))	Search modes - Boolean/Phrase
S10	TI recommendat*	Search modes - Boolean/Phrase
S9	TX ((critical or clinical or practice) N2 (path or paths or pathway or pathways or protocol*))	Search modes - Boolean/Phrase
S8	TI Consensus*	Search modes - Boolean/Phrase
S7	TI CPG or CPGs	Search modes - Boolean/Phrase
S6	AB ((practice or treatment*) N2 guideline*).	Search modes - Boolean/Phrase
S5	TI standards or guideline or guidelines	Search modes - Boolean/Phrase
S4	TX position statement* or policy statement* or practice parameter* or best practice	Search modes - Boolean/Phrase

S3	PT practice guidelines	Search modes - Boolean/Phrase
S2	(MH "Critical Path")	Search modes - Boolean/Phrase
S1	(MH "Practice Guidelines")	Search modes - Boolean/Phrase

Grey Literature Search Terms

Guideline Specific Sites

mental health OR emotional health OR depression OR anxiety OR bipolar OR dysthymia OR agoraphobia OR phobia OR phobic OR panic disorder OR conduct disorder OR disruptive behavior disorder* OR disruptive behaviour disorder* OR attention deficit OR oppositional defiant disorder OR mental disorder* OR emotional disorder* OR affective disorder* AND pediatric* or paediatric* or child* or adolescent* or youth* or teenager* or teen*

Other Grey Literature

mental health OR emotional health OR depression OR anxiety OR bipolar OR dysthymia OR agoraphobia OR phobia OR phobic OR panic disorder OR conduct disorder OR disruptive behavior disorder* OR disruptive behaviour disorder* OR attention deficit OR oppositional defiant disorder OR mental disorder* OR emotional disorder* OR affective disorder* AND pediatric* or paediatric* or child* or adolescent* or youth* or teenager* or teen* AND guideline* OR CPG* OR care pathway* OR consensus statement* OR best practice OR practice parameter* OR position statement OR policy statement OR protocol* OR expert committee

Grey Literature Search Sites

National Guidelines Clearinghouse <http://www.guideline.gov/>
 Scottish Intercollegiate Guidelines Network (SIGN) <http://www.sign.ac.uk/>
 Clinical Practice Guidelines Portal (Australia) <https://www.clinicalguidelines.gov.au/>
 Guidelines International Network <http://www.g-i-n.net/>
 Canadian Academy of Child and Adolescent Psychiatry (CACAP) http://www.cacap-acpea.org/en/cacap/Policies_amp_Guidelines_p810.html
 Canadian Paediatric Society <http://www.cps.ca/en/>
 The College of Family Physicians of Canada <http://www.cfpc.ca/ForHealthProfessionals/>
 BC Mental Health & Substance Use Services <http://www.bcmhsus.ca/resources/guidelines-and-protocols>
 Canadian ADHD Resource Alliance (CADDRA) http://www.caddra.ca/cms4/index.php?option=com_content&view=article&id=26&Itemid=70&lang=en
 BCGuidelines.ca <http://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines>
 American Academy of Child and Adolescent Psychiatry (AACAP) <http://www.aacap.org/>
 YoungMinds <http://www.youngminds.org.uk/search?q=guidelines>

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3 Royal College of Paediatrics and Child Health (RCPCH)
4 [http://www.rcpch.ac.uk/improving-child-health/clinical-guidelines-and-](http://www.rcpch.ac.uk/improving-child-health/clinical-guidelines-and-standards/endorsed-and-supported/child-mental-health)
5 [standards/endorsed-and-supported/child-mental-health](http://www.rcpch.ac.uk/improving-child-health/clinical-guidelines-and-standards/endorsed-and-supported/child-mental-health)
6
7 Ministry of Health Malaysia <http://www.moh.gov.my/index.php/pages/view/149>
8 Canadian Mental Health Association (CMHA) <http://www.cmha.ca/>
9 National Institute for Health Care Excellence (NICE) <https://www.nice.org.uk/guidance>
10 Canadian Medical Association Infobase [https://www.cma.ca/En/Pages/clinical-practice-](https://www.cma.ca/En/Pages/clinical-practice-guidelines.aspx)
11 [guidelines.aspx](https://www.cma.ca/En/Pages/clinical-practice-guidelines.aspx)
12 Centre for Addiction and Mental Health (CAMH)
13 <http://www.camh.ca/en/hospital/Pages/home.aspx>
14 Mental Health Commission of Canada <http://www.mentalhealthcommission.ca/English/>
15 Canadian Psychological Association <http://www.cpa.ca/>
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18 In addition, a search, using the same terms, was u
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PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol*

Section and topic	Item No	Page#	Checklist item
ADMINISTRATIVE INFORMATION			
Title:			Towards High Quality, Useful Practice Guidelines for Child and Youth Mental Health Disorders: Protocol for a Systematic Review and Consensus Exercise.
Identification	1a	1	Identify the report as a protocol of a systematic review
Update	1b	N/A	If the protocol is for an update of a previous systematic review, identify as such
Registration	2	3	If registered, provide the name of the registry (such as PROSPERO) and registration number
Authors:			
Contact	3a	1	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author
Contributions	3b	2	Describe contributions of protocol authors and identify the guarantor of the review
Amendments	4	N/A	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
Support:			
Sources	5a	2	Indicate sources of financial or other support for the review
Sponsor	5b	N/A	Provide name for the review funder and/or sponsor
Role of sponsor or funder	5c	2	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol
INTRODUCTION			
Rationale	6	4	Describe the rationale for the review in the context of what is already known
Objectives	7	4	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)
METHODS			
Eligibility criteria	8	5	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review
Information sources	9	5	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage
Search strategy	10	5	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated

Study records:			
Data management	11a	5	Describe the mechanism(s) that will be used to manage records and data throughout the review
Selection process	11b	5	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)
Data collection process	11c	6	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators
Data items	12	6	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications
Outcomes and prioritization	13	6	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale
Risk of bias in individual studies	14	6	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
Data synthesis	15a	6	Describe criteria under which study data will be quantitatively synthesised
	15b	6	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I^2 , Kendall's τ)
	15c	N/A	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)
	15d	N/A	If quantitative synthesis is not appropriate, describe the type of summary planned
Meta-bias(es)	16	N/A	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)
Confidence in cumulative evidence	17	N/A	Describe how the strength of the body of evidence will be assessed (such as GRADE)

*** It is strongly recommended that this checklist be read in conjunction with the PRISMA-P Explanation and Elaboration (cite when available) for important clarification on the items. Amendments to a review protocol should be tracked and dated. The copyright for PRISMA-P (including checklist) is held by the PRISMA-P Group and is distributed under a Creative Commons Attribution Licence 4.0.**

From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015 Jan 2;349(jan02 1):g7647.

BMJ Open

Towards High Quality, Useful Practice Guidelines for Child and Youth Mental Health Disorders: Protocol for a Systematic Review and Consensus Exercise.

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2017-018053.R2
Article Type:	Protocol
Date Submitted by the Author:	04-Dec-2017
Complete List of Authors:	Bennett, Kathryn; McMaster University Faculty of Health Sciences, Health Research Methods, Evidence and Impact (formerly Clinical Epidemiology and Biostatistics) Duda, Stephanie ; McMaster University, Health Research Methods, Evidence and Impact (formerly Clinical Epidemiology and Biostatistics) Brouwers, Melissa; McMaster University Szatmari, Peter; Centre for Addiction and Mental Health Newton, Amanda; University of Alberta McLennan, John; University of Ottawa Department of Psychiatry Sundar, Purnima; Ontario Centre of Excellence for Child and Youth Mental Health Cleverley, Kristin; University of Toronto, Faculty of Nursing Charach, Alice; Hospital for Sick Children Henderson, Joanna; Centre for Addiction and Mental Health, ; University of Toronto Faculty of Medicine, Psychiatry Courtney, Darren; Centre for Addiction and Mental Health Rice, Maureen; McMaster University
Primary Subject Heading:	Mental health
Secondary Subject Heading:	Evidence based practice
Keywords:	Child & adolescent psychiatry < PSYCHIATRY, Protocols & guidelines < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, Quality in health care < HEALTH SERVICES ADMINISTRATION & MANAGEMENT

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Manuscripts

Towards High Quality, Useful Practice Guidelines for Child and Youth Mental Health Disorders: Protocol for a Systematic Review and Consensus Exercise.

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8

9 **Keywords:** Practice Guidelines Child; Adolescent; Mental Health
10

11 **Author Contributions:** KB conceived the initial idea for the study and is the guarantor of the protocol. KB and
12 SD wrote the first draft of the protocol. KB, SD, MB, PSz, AN, JM, PS, KC, AC, JH, CC, DC and MR reviewed
13 multiple versions of the protocol providing critical comment and further developing the methods. KB, SD, MB,
14 PSz, AN, JM, PS, KC, AC, JH, CC, DC and MR read and approved the final version of the manuscript.
15

16 **Funding Statement:** This work is supported in part by the Margaret and Wallace McCain Centre for Child, Youth
17 & Family Mental Health, Centre for Addiction and Mental Health, Toronto, Ontario. The funder had no role in
18 developing or implementing the study protocol.
19

20 **Competing Interests Statement:** All authors report they have nothing to declare.
21

22 **Data Sharing Statement:** The findings from our systematic review and nominal group consensus exercises will
23 be disseminated through a specially developed website. Additional information can be requested from the
24 principal investigator.
25

26 **Acknowledgements:** We thank the members of our youth and adult family member advisory committee (S
27 Cannon, Z Johnstone, L Langford, G Loucks, A Messaoudi and H Smith) for their contributions to proposal
28 methods related to youth and adult family member engagement.
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ABSTRACT

Introduction: The quality of clinical practice guidelines (PGs) has not been evaluated in child and youth mental health (CYMH). To address this gap we will: i) conduct a systematic review to answer the question 'among eligible PGs relevant to the prevention or treatment of CYMH conditions, which PGs meet criteria for minimum and high quality?; ii) apply nominal group methods to create recommendations for how CYMH PG quality, completeness and usefulness can be strengthened.

Methods and Analysis: Systematic Review: Potentially eligible PGs will be identified in 12 databases using a reproducible search strategy developed by a research librarian. Trained raters will: i) apply pre-specified criteria to identify eligible PGs relevant to depression, anxiety, suicidality, bipolar disorder, behaviour disorder [attention-deficit hyperactivity disorder, oppositional defiant disorder, conduct disorder] and substance use disorder; ii) extract descriptive data; and iii) assess PG quality using the Appraisal of Guidelines for Research and Evaluation (AGREE II) tool. Scores on three AGREE-II domains (rigor of development, stakeholder involvement, editorial independence) will designate PGs as minimum ($\geq 50\%$) or high quality ($\geq 70\%$). Nominal Group: Four CYMH PG knowledge-user groups (clinicians, mental health service planners, youth and adult family members) will participate in structured exercises derived using nominal group methods to generate recommendations to improve PG quality, completeness and usefulness.

Ethics and Dissemination: Ethics approval is not required. Study products will be disseminated as follows. A cross-platform website will house eligible CYMH PGs and their quality ratings. Twitter and Facebook tools will promote it to a wide variety of PG users. Data from Google Analytics, Twitonomy, and Altmetrics will inform usage evaluation. Complementary educational workshops will be conducted for CYMH professionals. Print materials and journal articles will be produced.

Registration Details: PROSPERO 2017:CRD42017060738

Strengths and Limitations

- This systematic review will provide currently unavailable information about which existing CYMH PGs are trustworthy, and should be used by clinicians, mental health service planners, youth and family members.
- Our protocol adheres to PRISMA- P criteria.
- Nominal group consensus exercises conducted with four different types of PG users will identify how the quality, completeness and usefulness of CYMH PGs can be strengthened.
- The review cannot address barriers and facilitators of successful guideline implementation.
- By focusing on diagnosable conditions, it is possible that some important preventive interventions may not be included.

INTRODUCTION

Effective interventions are increasingly available to assess, prevent and treat child and youth mental health problems.¹ However, studies repeatedly show that many children and youth experiencing mental health difficulties may not benefit from these interventions. For example, even in resource rich settings only about 20-30% of youth in need are able to obtain any child and youth mental health (CYMH) care.² Equally concerning are findings that suggest even when children and youth are able to access CYMH services, the quality of care received is uneven at best, with wide variation in the types of services delivered within a single jurisdiction³⁻⁶ Clinical practice guidelines (PGs) are decision aids that have the potential to help strengthen the quality of CYMH care, and improve CYMH outcomes.⁷ The recommendations contained in high quality PGs consist of statements about the comparative benefits and risks of different intervention options, systematically derived using rigorous critical appraisal and research synthesis methodologies. These statements can guide clinical decisions and mental health service planning, reduce variation in the services delivered, and facilitate informed decision-making by youth experiencing mental health difficulties and their family members.⁷⁻⁹ Numerous CYMH PGs are now available, and leading national and international organizations regularly call for their increased production and use.^{10, 11}

The availability of high-quality, 'trustworthy' PGs is a non-negotiable pre-requisite to promoting their development and use.⁷ Otherwise, PG implementation may not improve the quality of CYMH care, resulting in little or no mental health benefit to children and youth, and potentially increasing the risk of harm and wasted resources due to the implementation of flawed PG recommendations. PG quality has received considerable attention, particularly in internal medicine and its sub-specialties.¹²⁻¹⁴ International criteria have been developed to guide the production of rigorous, clinically trustworthy PGs,⁷ and The Appraisal of Guidelines for Research and Evaluation (AGREE II) tool,¹⁵⁻¹⁷ derived from these standards has been used to appraise and improve PG quality relevant to adult chronic disease, and to enable PG users to choose PGs based on quality. More recently the Institute of Medicine (IOM) has proposed eight similar PG quality standards,¹⁸ and work has begun to translate them into a new tool for appraising quality/clinical validity.¹⁹

In contrast, to date, very little attention has been given to the quality of PGs relevant to CYMH conditions.²⁰ The need to fill this gap is long overdue. We need to know which available CYMH PGs are trustworthy, and how to design initiatives to strengthen the capacity of the CYMH field to produce high quality, useful PGs. As a first step, we appraised the rigor of the development methods currently used by groups who create CYMH PGs.²⁰ Five different sets of development methods were identified within 70 individual CYMH PGs. Evaluation of these sets of development methods using both the AGREE II and IOM criteria revealed that roughly 70% of CYMH PGs may not be trustworthy because the methods used to develop them are weak, pointing to the urgent need to evaluate the quality of the actual CYMH PGs. The protocol reported below addresses this need and will proceed in three phases. First, a systematic review will be conducted to answer the question 'Among eligible PGs relevant to the assessment, prevention or treatment of common CYMH conditions, which PGs meet criteria for minimum and high quality?'. The goal is to increase PG user awareness of specific trustworthy CYMH PGs by identifying all available CYMH PGs and determining which ones meet criteria for minimum and high quality standards using the AGREE-II appraisal tool. Second, working with four PG knowledge-user (KU) groups (i.e., clinicians, mental health service planners, youth and adult family members), nominal group methods will

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3 be employed to develop recommendations to guide improvements in CYMH PG quality, completeness
4 and usefulness. The goal is to provide consensus-based statements that can inform capacity building
5 initiatives including how to strengthen CYMH PG quality through increased attention to rigorous develop
6 methods, the identification of a core-set of CYMH PGs, how to improve user skills relevant to choosing
7 PGs based on quality, how to increase the alignment of PG content with different KU group needs, and
8 how to co-ordinate the work of different PG development groups so that PG quality is strengthened
9 through increased efficiency and collaboration. Finally, a set of dissemination activities will be undertaken
10 to make the results of this work widely available to both PG users and developers.
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13 14 **METHODS AND ANALYSIS**

15 **Systematic Review (SR) Methods**

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18 Our methods adhere to Cochrane Collaboration²¹ and PRISMA standards [Preferred Reporting Items for
19 Systematic Reviews/Meta-analyses and Protocols].^{22, 23}
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21

22 **Research Question:** Among eligible PGs relevant to the assessment, prevention or treatment of
23 common CYMH conditions, which PGs meet criteria for minimum and high quality?
24

25 **Eligibility Criteria:** Documents identified using the search strategy described below will be deemed
26 eligible if they meet the following criteria: (i) English language; (ii) documents labeled practice guideline,
27 practice parameter, or consensus or expert committee recommendations, or documents with the explicit
28 objective or methods to develop original guidance/recommendations; (iii) published, revised, updated or
29 reaffirmed between 2005-2017; (iv) address the assessment, prevention or treatment of one of the
30 following CYMH disorder groups (as defined by DSM-5),²⁴ mood (major depressive disorder, dysthymia,
31 bipolar disorder), anxiety (agoraphobia, generalized anxiety disorder, social phobia, specific phobia, panic
32 disorder, separation anxiety disorder), self-harm/suicidality, disruptive behavior (attention deficit
33 hyperactivity disorder, oppositional defiant disorder, conduct disorder) and substance use disorders; and
34 (v) relevant to children and youth ≤ 18 years of age. Documents meeting the foregoing inclusion criteria
35 will be excluded if judged to be a narrative or systematic literature review that contains summary
36 statements regarding clinical implications/recommendations.
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40 **Information Sources:** Following advice from an experienced health research librarian (Rice), we will
41 search Medline, EMBASE, PsycINFO and CINAHL. Our grey literature search will include PG specific
42 sites (i.e., National Guideline Clearinghouse, Canadian Medical Association Infobase, National Institute
43 for Health and Care Excellence, Guidelines International Network International Guideline Library,
44 Australia's Clinical Practice Guidelines Portal and New Zealand Guidelines Group). It will also target
45 mental health-related organizations (e.g., American Academy of Child and Adolescent Psychiatry;
46 Canadian Mental Health Association) and include a broad search using Google. All searches will be
47 supplemented by: screening reference lists of eligible PGs; using cited reference searching to reference
48 forward eligible PGs; hand-searching key journals; soliciting recommendations from team members.
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52 **Search Strategy:** Our research librarian will use a strategy that combines subject heading and text terms
53 for mental health AND guidelines AND children/adolescents. The strategy will be developed in Medline
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3 and then translated to terms appropriate to other databases and peer reviewed.²⁵ A draft search strategy
4 is provided in supplementary file 1.
5

6 **Information Management:** Search results will be stored using bibliographic management software.
7

8 **Selection Process:** One methodologist with expertise in the identification and quality assessment of PGs
9 will independently screen the titles and abstracts of all unduplicated identified records using Reference
10 Manager software. Only documents that clearly do not meet our inclusion criteria will be excluded at this
11 stage, for example, title and/or abstract unambiguously indicates that the document: i) is specific to
12 adults; ii) does not address one or more of the target CYMH disorders; or iii) publication date is prior to
13 2005. All remaining documents will proceed to full-text screening by two reviewers. A research assistant
14 will obtain full-text records for all potentially relevant documents identified during title and abstract
15 screening. Then two methodologists working independently will apply the inclusion criteria to full-text
16 documents to identify eligible PGs. Disagreements regarding eligibility are then identified and resolved
17 through discussion with the principal investigator (PI).
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21 **Data Items and Collection Process:** A trained research staff member will extract descriptive data for
22 each eligible PG using a standardized form to capture: date produced; author; organization type
23 (government, medical society, special group, other); country of origin; CYMH disorder; target population
24 (children and youth only; children, youth and adults); guideline purpose (assessment, prevention,
25 treatment). Training will include refinement of item rewording as needed to improve clarity.
26
27

28 **PG Quality Assessment Methods, Raters, Training:** PG quality ratings will be conducted using AGREE
29 II.¹⁷ This validated tool is used widely and consists of 23 questions grouped in 6 domains: scope and
30 purpose, stakeholder involvement, rigor of development, clarity of presentation, applicability, editorial
31 independence. Two additional items assess overall quality. Item response options range from 1 to 7. Two
32 reviewers (MSc in research methods) will participate in a three stage training exercise: completion of the
33 online AGREE II Overview Tutorial,²⁶ a detailed review of the AGREE II User's Manual,¹⁷; and an online
34 practice assessment of an example PG.²⁷ Reviewers will meet with the principal investigator to review
35 disagreements and 'lessons learned' about AGREE II. Following training, the two reviewers will
36 independently apply AGREE II criteria to eligible PGs using the My AGREE PLUS online platform.²⁸ For
37 each item, reviewers will indicate their score and justify it by recording document page and paragraph
38 numbers for the information supporting each item in the comment box. When applying AGREE II criteria,
39 reviewers will ensure that any companion documents for a given PG (e.g., tools and resources to aid PG
40 implementation, technical reports, health economic analyses, PG evaluation tools, etc. referenced in the
41 main document) were considered in addition to the main PG document. Once the two raters have
42 completed their independent AGREE-II ratings, inter-rater differences ≥ 2 points on initial item scores will
43 be identified and discussed by the two raters and the PI. This cut-point has been chosen as it is both
44 pragmatic and conservative with respect to capturing scoring differences that arise from misinformation
45 (i.e., guideline documents are often very long and detailed and it is possible that a reviewer may simply
46 miss important information) rather than differences in judgment regarding the content of the guideline
47 documentation. Following discussion, reviewers are asked to reconsider and possibly revise their item
48 scores; however, numerical agreement on the score assigned for each AGREE II item is not required.
49 Thus, scoring differences that occur due to missed information in the documentation should be resolved
50 during the discussion of disagreements. Any differences that remain following discussion should
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3 represent between rater differences in judgment (rather than failure to detect specific pieces of
4 information within PG documents). Final item scores will then be aggregated into 6 domain scores by
5 summing both reviewers' scores for all items within a given domain and standardizing as a percentage of
6 the maximum possible score (ranging from 0-100%) using the formula described in the AGREE II User's
7 Manual.¹⁷
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10 ***PG High and Minimum Quality Rating Criteria:*** The AGREE II User's Manual does not provide criteria
11 to designate PGs as high or low quality. Thus, the interpretation of domain scores and overall PG quality
12 assessments are determined by the user. We will use scores on three AGREE II domains - stakeholder
13 involvement, rigor of development (that is, rigorous consideration of the relevant research evidence
14 base), and editorial independence (management of academic and financial conflict of interest) - to classify
15 PGs according to quality. Minimum quality PGs will be defined as those that receive a domain score \geq
16 50% on all three domains. High quality PGs will be defined as those that obtain a domain score \geq 70% on
17 all three domains. We selected these three domains because they address the extent to which risk of bias
18 is minimized in the identification and interpretation of the research evidence used to derive the guideline
19 recommendations. The remaining three domains, although important, do not evaluate the clinical validity
20 and trustworthiness of the PG; rather they focus on the problem statement, clarity of presentation and
21 implementability.
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25 Data Synthesis and Statistical Techniques:

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27 PG Characteristics: Descriptive statistics (means, proportions) will be used to summarize eligible PG
28 characteristics.
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30 Rater Agreement for AGREE-II Scores: We will calculate the intraclass correlation coefficient (ICC) to
31 assess inter-rater agreement²⁹ and use Fleiss' categories to classify the level of agreement: poor (0-
32 0.40), fair to good (0.41-0.75), and excellent (> 0.75).³⁰ SPSS, version 23 will be used to perform the
33 statistical analyses.
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36 Guideline Quality: To answer our SR research question, each eligible PG will be classified as high quality
37 or minimum quality using the AGREE-II methods and classification criteria described above. The
38 remaining individual domain scores for each PG will be reported for descriptive purposes. Our narrative
39 summary will address the extent to which guidelines deemed high quality and minimum quality also
40 perform well on the other three domains (i.e., achieve our score cut-offs for minimum and high quality).
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43 The six domain scores and overall guideline quality scores will also be used to describe the overall quality
44 of CYMH guidelines. More specifically, mean domain scores and mean overall guideline quality scores
45 for each disorder group will be calculated, and a narrative synthesis of guideline methodologic strengths
46 and weaknesses will be conducted.
47

48 The mean domain scores and overall scores for each guideline will also be grouped by source developer
49 (e.g., government agency, specialty society, independent expert group or other) to explore descriptively
50 the extent to which each of these groups are more or less likely to produce high quality guidelines than
51 other groups. Again, narrative synthesis methods will be used to summarize these findings.
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Nominal Group Methods

Research Question: How can the quality and usefulness of PGs for CYMH disorders be strengthened?

To develop recommendations to guide future CYMH PG development, we will convene four CYMH PG knowledge-user groups, namely clinicians, mental health service planners, youth and adult family members and engage them in a series of structured exercises derived using nominal group methods and the findings of the SR.^{31, 32}

Recommendation Development Group (RDG) Membership: Group membership influences the outcomes of consensus exercises. Heterogeneous groups representing the range of relevant perspectives are preferred as they are more likely to produce judgments that reflect a conservative or middle ground.^{7, 33} Accordingly, for each PG user group, we will form groups composed of 10 individuals. Clinicians and mental health service planners will be identified through nominations by project team investigators. Youth (aged 8 to 18 years) and adult family members will be nominated by the members of our youth and adult family member advisory committee (see section below re committee membership and involvement to date in protocol development). Once the four groups are assembled, members will be asked if important viewpoints are not represented, and additional members (up to 3) will be invited to participate as needed.

Managing Conflict of Interest: Methods consistent with current international standards will be used.³⁴ RDG participants will be asked to disclose financial or intellectual conflicts relevant to CYMH PG development. The project principal investigator in consultation with other co-investigators as needed will review all disclosed conflicts and make decisions regarding whether an individual should be recused from all or a portion of the recommendation development exercise.

Generating Recommendations: A structured questionnaire, face-to-face meeting interactions and on-line rating derived from nominal group methods will be used.

Structured Pre-Meeting Questionnaire: RDG members will respond to an electronic questionnaire prior to a face-to-face meeting. The content of the questionnaire will be derived from the findings of the SR and supported by relevant supplemental information. Provisional questions include:

1. i) Using AGREE II as a framework and the SR findings, how should minimum quality standards for CYMH PGs be defined? ii) Based on the results of the SR, what methodologic quality criteria should be the focus of capacity building initiatives designed to improve PG quality? 2. What CYMH PGs constitute a core set (including a rationale based on prevalence and burden of illness)? 3. What content and PG development processes are needed to ensure that PGs are useful to specific types of KUs: i) clinicians (child psychiatrists, family physicians, pediatricians, nurses, psychologists and social workers); ii) mental health service planners in provincial government ministries, hospitals and community agencies; iii) children and youth; and iv) adult family members? 4. How can increased collaboration between PG development groups be encouraged in order to strengthen PG quality and usefulness, and reduce duplication?

Each question will be linked to supplemental material based on SR findings and/or the content of the minimum and high quality PGs. For example, for question 1 the quality ratings for each PG (i.e., domain scores) will be presented in tabular form. Each RDG participant will be asked to indicate whether each

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3 domain is relevant to defining minimum quality standards, and if so what score cut-point should be used?
4 Similarly, participants will be asked to define high quality using the AGREE-II domains. For provisional
5 question 3 (What content and PG development processes are needed to ensure that PGs are useful to
6 specific types of PG-users?), each RDG participant will be provided with electronic access to
7 supplementary materials (e.g., template summary of PG content, template summary of PG development
8 process, copy of actual PG) derived from the minimum and high quality PGs, and asked to identify
9 specific aspects of the content and developmental processes that are essential and/or missing from their
10 user perspective.
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13 Face-to-Face Meeting: First, the SR findings and collated pre-meeting questionnaire results will be
14 reviewed in a large group session. Then each KU group will work independently in small groups with an
15 expert facilitator who is not part of the research team to draft recommendations related to each pre-
16 meeting question. The goal is to ensure that each PG user group has an equal voice, and that all
17 individuals have the opportunity to express their views. Each small group will then report their draft
18 recommendations for each question to the full group. The principal investigator will collate draft
19 recommendations into a final provisional set for review in the final session of the day. The final set will
20 include draft recommendations that are common to all four PG user groups and draft recommendations
21 that are unique to a specific PG-user group.
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25 Generating Final Recommendations and Quantifying the Level of Consensus: We will finalize the content
26 of the recommendations drafted in the face-to-face meeting and quantify RDG member agreement (0 to
27 100%) for each recommendation as follows. First, forty-eight hours after the face-to-face meeting, RDG
28 members will indicate their level of agreement with each draft recommendation using a 7-point scale (1 =
29 strongly disagree; 7 = strongly agree). Ratings will be collected anonymously in an online survey. RDG
30 members will then be provided with a summary of scores, and participate in a conference call one week
31 later to discuss and revise each recommendation as necessary. Finally, RDG members will re-rate their
32 agreement with each revised recommendation in a second anonymous online exercise. Although
33 consensus (i.e., 100% agreement among RDG members on the rating assigned to a recommendation)
34 may be achieved for a specific recommendation, this is not our aim. Quantifying the extent of variation in
35 agreement/disagreement with the recommendations produced is an integral part of accurate
36 communication of RDG views.⁷
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40 *Youth and Family Member Participation in Protocol Development and Preparation Prior to* 41 *Project Startup* 42 43

44 Informed by patient and public involvement methodology, we have already convened a youth and adult
45 family member advisory group (4 youth, 2 adult family members) to provide leadership throughout the
46 project.⁹ During proposal development, this group first planned the type of involvement they wished to
47 have in the project using the following 'meaningful engagement' continuum: consultation, involvement,
48 partnership and shared leadership.^{35, 36} The results of their deliberations are as follows. First they will
49 participate as learners in the SR to understand PGs and quality appraisal methods. Then, with this
50 preparation, their goal in subsequent project stages will be participation/shared leadership (e.g., develop
51 recommendations for how PGs can be more acceptable/useful to youth and adult family members; create
52 dissemination tools tailored to the needs of youth and adult family members). Specific processes and
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3 roles are aligned with engagement principles including reciprocal relationships, co-learning, partnerships,
4 transparency, honesty, trust.^{35, 36}
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6 *Training Workshops for Youth and Family Members*

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8 Four training workshops for youth and adult family members will be conducted prior to participating in the
9 SR, structured nominal group exercises, face-to-face meeting, online survey and conference call. First,
10 youth and adult family members will participate in three half-day workshops to learn about PGs and the
11 AGREE II quality assessment process. The goal is to support capacity development, and facilitate their
12 engagement in the SR and recommendation development process. The first workshop will include a 1:1
13 orientation for each individual and a 'Terms of Reference (ToFR) document will be co-developed with the
14 entire group. This document will capture the core engagement principals that guide our project and the
15 continuum of meaningful engagement we are utilizing (see preceding section). Workshop one will also
16 address processes to support conflict resolution and clinical support.
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20 A fourth workshop will be convened prior to the full team meeting focusing on recommendation
21 development to: i) prepare youth and adult family members for their role in generating recommendations
22 relevant to PG acceptability/usefulness; and ii) enable them to provide input into the full team meeting
23 agenda to ensure a meaningful process that facilitates youth and adult family member engagement in the
24 deliberations and decisions.
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27 We will also conduct briefing sessions prior to and following each workshop, and provide ongoing support
28 as appropriate to facilitate sustained engagement.
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32 *Integrated Knowledge Translation*

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34 Throughout the project, we will use integrated knowledge translation (iKT) methods to ensure our goals
35 and outputs are relevant to the needs of our four KU user groups.³⁷ Figure 1 illustrates how the core
36 project team will interact with our full team of researchers and KUs to accomplish our iKT goals in each
37 project stage.
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40 *Potential Challenges*

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42 Conflict of Interest: If not managed appropriately, conflict of interest could introduce bias into our work.
43 We will address this risk as follows. First, AGREE II will be applied by MSc level raters with no potential
44 for intellectual or financial conflict of interest that might systematically bias ratings. Second, conflicts
45 among RDG members will be declared and managed as described above. Number of PGs: Our pilot work
46 shows that the number of PGs that meet our eligibility criteria can be rated with AGREE II in the timeline
47 proposed (2 years). Team Member Engagement: All team members have reviewed our project activities
48 and timeline and have provided written commitments to participate in project activities as shown in Figure
49 1. Youth and Adult Family Member Engagement: This is an area of demonstrated expertise for one of our
50 team members (PS). She has already convened our youth and adult family member advisory group, and
51 successfully engaged them in planning their involvement in each stage of the project.
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ETHICS AND DISSEMINATION

Ethics: This systematic review and consensus exercise protocol is considered a quality improvement initiative and hence, does not require ethics approval³⁸

Web-based PG Repository Platform to Disseminate Quality Assessed PGs: A cross-platform (i.e., desktop, tablet, and smartphone accessible) website will be created including content tabs to facilitate navigation, a contact form for users to submit questions and a user experience survey to solicit feedback. Figure 2 presents website design elements.

Website Promotion: To disseminate our findings and increase PG user knowledge of trustworthy CYMH PGs, we will launch a social media campaign to engage with the CYMH community using Twitter and Facebook, aiming for 3 posts per week. Posts will include PG content, links to PGs, project updates/summaries and news pieces. KUs will also be invited to promote our website through their Twitter accounts.

Evaluation: Data from Google Analytics,³⁹ Twitonomy⁴⁰ and Altmetric⁴¹ inform evaluation of website usage.

Youth and Adult Family Member Website Workshop: A half-day workshop will be held to enable youth and family members to review website planning with our web/media expert and integrate youth and family member preferences and needs.

Webinar: Representatives of each of the four KU groups will participate in webinar development to ensure it meets their needs, and invite their members to participate in one of the four planned webinar offerings.

Manuscripts: At least two peer-reviewed open-access publications will be developed.

Written Materials: Tailored project summaries, developed with input from our KU groups will be hosted on our website and shared with our KU partners.

Workshops: Workshops and presentations will be held at KU meetings [e.g., PolicyWise for Children and Families event, Canadian Academy of Child and Adolescent Psychiatry (CACAP) conference, Canadian Pediatric Society (CPS) conference, College of Family Physicians of Canada (CFPC) Family Health Forum, Healthy Child Manitoba event, Ontario Centre of Excellence in Child and Youth Mental Health partners (e.g., Parents for Children's Mental Health; The New Mentality), Ontario Ministries [Children and Youth Services (MCYS), Health and Longterm Care (MOHLTC), Education (EDU)].

CONCLUDING STATEMENT

Children and youth deserve the best possible mental health services. To this end, this synthesis, informed by user needs (clinicians, mental health service planner, youth, adult family members) will: advance knowledge by identifying trustworthy CYMH PGs, and documenting the strengths and weaknesses of existing CYMH PGs; guide future PG development by formulating recommendations for how to improve

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CYMG PG quality, completeness and usefulness; and facilitate knowledge application by creating user informed dissemination tools to promote the use of high quality PGs.

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Figure Legends

Figure 1: Team members will conduct their work over a 24 month period as described in the steps shown.

Figure 2: Our practice guideline respository website will be structured as shown providing access to quality appraised guidelines organized by disorder.

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Figure 1: Integrated Knowledge Translation Approach and Timeline

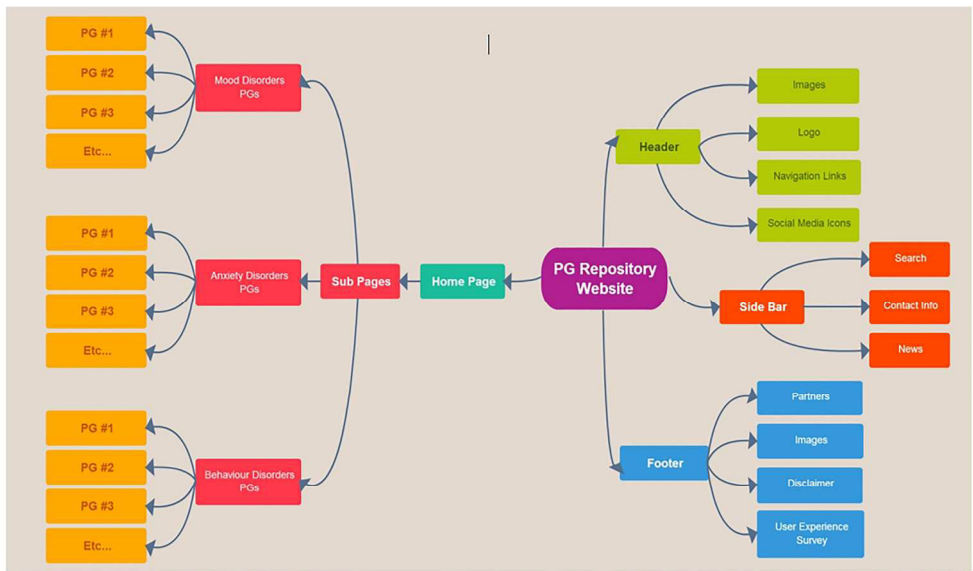


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Figure 2: Website Design Elements



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Supplement 1: Detailed Search Strategy for Depression and Anxiety PGs

Medline-OVID

July 23, 2015

1. exp clinical pathway/
2. exp clinical protocol/
3. exp consensus/
4. exp consensus development conference/
5. exp consensus development conferences as topic/
6. critical pathways/
7. exp guideline/
8. guidelines as topic/
9. exp practice guideline/
10. practice guidelines as topic/
11. health planning guidelines/
12. treatment guidelines.mp.
13. (guideline or practice guideline or consensus development conference or consensus development conference, NIH).pt.
14. (position statement* or policy statement* or practice parameter* or best practice*).ti,ab.
15. (standards or guideline or guidelines).ti.
16. ((practice or treatment*) adj guideline*).ab.
17. (CPG or CPGs).ti.
18. Consensus*.ti.
19. consensus*.ab. /freq=2
20. ((critical or clinical or practice) adj2 (path or paths or pathway or pathways or protocol*)),ti,ab.
21. recommendat*.ti.
22. (care adj2 (standard or path or paths or pathway or pathways or map or maps or plan or plans)).ti,ab.
23. (algorithm* adj2 (screening or examination or test or tested or testing or assessment* or diagnosis or diagnoses or diagnosed or diagnosing)).ti,ab.
24. (algorithm* adj2 (pharmacotherap* or chemotherap* or chemotreatment* or therap* or treatment* or intervention*)).ti,ab.
25. or/1-24
26. mental disorders/ or anxiety disorders/ or agoraphobia/ or panic disorder/ or phobic disorders/
27. affective disorders, psychotic/ or bipolar disorder/ or depressive disorder/ or depressive disorder, major/ or dysthymic disorder/
28. mental disorders/ or anxiety, separation/ or "attention deficit and disruptive behavior disorders"/ or attention deficit disorder with hyperactivity/ or conduct disorder/
29. oppositional defiant disorder.mp.
30. Mental health/
31. (mental health or emotional health or depression or anxiety or bipolar or dysthymia or agoraphobia or phobia or phobic or panic disorder or conduct disorder or disruptive behavio?r disorder* or attention deficit).kw,ti.

32. 26 or 27 or 28 or 29 or 30 or 31
33. (pediatric* or paediatric* or child* or adolescent? or youth? or teenager? or teen?).ti,jn.
34. 25 and 32
35. 33 and 34
36. limit 34 to ("all child (0 to 18 years)" or "preschool child (2 to 5 years)" or "child (6 to 12 years)" or "adolescent (13 to 18 years)")
37. 35 or 36
38. limit 37 to english language
39. limit 38 to yr="2005 - 2015"

EMBASE-OVID

July 23 2015

1. exp clinical pathway/
2. exp clinical protocol/
3. exp consensus/
4. exp consensus development conference/
5. exp consensus development conferences as topic/
6. critical pathways/
7. exp guideline/
8. guidelines as topic/
9. exp practice guideline/
10. practice guidelines as topic/
11. health planning guidelines/
12. treatment guidelines.mp.
13. (guideline or practice guideline or consensus development conference or consensus development conference, NIH).pt.
14. (position statement* or policy statement* or practice parameter* or best practice*).ti,ab.
15. (standards or guideline or guidelines).ti.
16. ((practice or treatment*) adj guideline*).ab.
17. (CPG or CPGs).ti.
18. Consensus*.ti.
19. consensus*.ab. /freq=2
20. ((critical or clinical or practice) adj2 (path or paths or pathway or pathways or protocol)).ti,ab.
21. recommendat*.ti.
22. (care adj2 (standard or path or paths or pathway or pathways or map or maps or plan or plans)).ti,ab.
23. (algorithm* adj2 (screening or examination or test or tested or testing or assessment* or diagnosis or diagnoses or diagnosed or diagnosing)).ti,ab.
24. (algorithm* adj2 (pharmacotherap* or chemotherap* or chemotreatment* or therap* or treatment* or intervention*)).ti,ab.
25. or/1-24
26. exp behavior disorder/ or mental disease/
27. exp anxiety disorder/

28. exp mood disorder/
29. exp mental health/
30. oppositional defiant disorder.mp.
31. (mental health or emotional health or depression or anxiety or bipolar or dysthymia or agoraphobia or phobia or phobic or panic disorder or conduct disorder or disruptive behavior disorder* or attention deficit).kw,ti.
32. or/26-31
33. 25 and 32
34. limit 33 to (child or preschool child <1 to 6 years> or school child <7 to 12 years> or adolescent <13 to 17 years>)
35. (pediatric* or paediatric* or child* or adolescent? or youth? or teenager? or teen?).ti,jn.
36. 33 and 35
37. 34 or 36
38. limit 37 to english language
39. limit 38 to yr="2005 - 2015"

PsycINFO-OVID

July 23 2015

1. exp clinical pathway/
2. exp clinical protocol/
3. exp consensus/
4. exp consensus development conference/
5. exp consensus development conferences as topic/
6. critical pathways/
7. exp guideline/
8. guidelines as topic/
9. exp practice guideline/
10. practice guidelines as topic/
11. health planning guidelines/
12. treatment guidelines.mp.
13. (guideline or practice guideline or consensus development conference or consensus development conference, NIH).pt.
14. (position statement* or policy statement* or practice parameter* or best practice*).ti,ab.
15. (standards or guideline or guidelines).ti.
16. ((practice or treatment*) adj guideline*).ab.
17. (CPG or CPGs).ti.
18. Consensus*.ti.
19. consensus*.ab. /freq=2
20. ((critical or clinical or practice) adj2 (path or paths or pathway or pathways or protocol)).ti,ab.
21. recommendat*.ti.
22. (care adj2 (standard or path or paths or pathway or pathways or map or maps or plan or plans)).ti,ab.

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3 23. (algorithm* adj2 (screening or examination or test or tested or testing or assessment*
4 or diagnosis or diagnoses or diagnosed or diagnosing)).ti,ab.
5 24. (algorithm* adj2 (pharmacotherap* or chemotherap* or chemotreatment* or therap*
6 or treatment* or intervention*)).ti,ab.
7 25. or/1-24
8 26. oppositional defiant disorder.mp.
9 27. (mental health or emotional health or depression or anxiety or bipolar or dysthymia or
10 agoraphobia or phobia or phobic or panic disorder or conduct disorder or disruptive
11 behavio?r disorder* or attention deficit).kw,ti.
12 28. mental disorders/ or exp anxiety disorders/ or exp impulse control disorders/ or exp
13 behavior disorders/ or conduct disorder/
14 29. exp affective disorders/
15 30. oppositional defiant disorder/
16 31. or/26-30
17 32. 25 and 31
18 33. (pediatric* or paediatric* or child* or adolescent? or youth? or teenager? or
19 teen?).ti,jn.
20 34. 32 and 33
21 35. limit 32 to (childhood or adolescence <13 to 17 years>)
22 36. 34 or 35
23 37. limit 36 to english language
24 38. limit 37 to yr="2005 - 2015"

CINAHL -EBSCO

July 23 2015

Search ID#	Search Terms	Search Options
S24	S23	Limiters - Published Date: 20050101-20151231; Language: English Search modes - Boolean/Phrase
S23	S22	Limiters - Age Groups: Infant: 1-23 months, Child, Preschool: 2-5 years, Child: 6-12 years, Adolescent: 13-18 years Search modes - Boolean/Phrase
S22	S14 AND S21	Search modes - Boolean/Phrase
S21	S15 OR S16 OR S17 OR S18 OR S19 OR S20	Search modes - Boolean/Phrase
S20	TI mental health or emotional health or depression or anxiety or bipolar or dysthymia or agoraphobia or phobia or phobic or panic	Search modes - Boolean/Phrase

	disorder or conduct disorder or disruptive behavior?r disorder* or attention deficit	
S19	SU mental health or emotional health or depression or anxiety or bipolar or dysthymia or agoraphobia or phobia or phobic or panic disorder or conduct disorder or disruptive behavior?r disorder* or attention deficit	Search modes - Boolean/Phrase
S18	"oppositional defiant disorder"	Search modes - Boolean/Phrase
S17	"conduct disorder"	Search modes - Boolean/Phrase
S16	(MH "Anxiety Disorders+")	Search modes - Boolean/Phrase
S15	(MH "Mental Disorders") OR (MH "Neurotic Disorders+") OR (MH "Mental Disorders Diagnosed in Childhood+")	Search modes - Boolean/Phrase
S14	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13	Search modes - Boolean/Phrase
S13	TX (algorithm* N2 (pharmacotherap* or chemotherap* or chemotreatment* or therap* or treatment* or intervention*))	Search modes - Boolean/Phrase
S12	TX (algorithm* N2 (screening or examination or test or tested or testing or assessment* or diagnosis or diagnoses or diagnosed or diagnosing))	Search modes - Boolean/Phrase
S11	TX (care N2 (standard or path or paths or pathway or pathways or map or maps or plan or plans))	Search modes - Boolean/Phrase
S10	TI recommendat*	Search modes - Boolean/Phrase
S9	TX ((critical or clinical or practice) N2 (path or paths or pathway or pathways or protocol*))	Search modes - Boolean/Phrase
S8	TI Consensus*	Search modes - Boolean/Phrase
S7	TI CPG or CPGs	Search modes - Boolean/Phrase
S6	AB ((practice or treatment*) N2 guideline*).	Search modes - Boolean/Phrase
S5	TI standards or guideline or guidelines	Search modes - Boolean/Phrase
S4	TX position statement* or policy statement* or practice parameter* or best practice	Search modes - Boolean/Phrase

S3	PT practice guidelines	Search modes - Boolean/Phrase
S2	(MH "Critical Path")	Search modes - Boolean/Phrase
S1	(MH "Practice Guidelines")	Search modes - Boolean/Phrase

Grey Literature Search Terms

Guideline Specific Sites

mental health OR emotional health OR depression OR anxiety OR bipolar OR dysthymia OR agoraphobia OR phobia OR phobic OR panic disorder OR conduct disorder OR disruptive behavior disorder* OR disruptive behaviour disorder* OR attention deficit OR oppositional defiant disorder OR mental disorder* OR emotional disorder* OR affective disorder* AND pediatric* or paediatric* or child* or adolescent* or youth* or teenager* or teen*

Other Grey Literature

mental health OR emotional health OR depression OR anxiety OR bipolar OR dysthymia OR agoraphobia OR phobia OR phobic OR panic disorder OR conduct disorder OR disruptive behavior disorder* OR disruptive behaviour disorder* OR attention deficit OR oppositional defiant disorder OR mental disorder* OR emotional disorder* OR affective disorder* AND pediatric* or paediatric* or child* or adolescent* or youth* or teenager* or teen* AND guideline* OR CPG* OR care pathway* OR consensus statement* OR best practice OR practice parameter* OR position statement OR policy statement OR protocol* OR expert committee

Grey Literature Search Sites

National Guidelines Clearinghouse <http://www.guideline.gov/>
 Scottish Intercollegiate Guidelines Network (SIGN) <http://www.sign.ac.uk/>
 Clinical Practice Guidelines Portal (Australia) <https://www.clinicalguidelines.gov.au/>
 Guidelines International Network <http://www.g-i-n.net/>
 Canadian Academy of Child and Adolescent Psychiatry (CACAP) http://www.cacap-acpea.org/en/cacap/Policies_amp_Guidelines_p810.html
 Canadian Paediatric Society <http://www.cps.ca/en/>
 The College of Family Physicians of Canada <http://www.cfpc.ca/ForHealthProfessionals/>
 BC Mental Health & Substance Use Services <http://www.bcmhsus.ca/resources/guidelines-and-protocols>
 Canadian ADHD Resource Alliance (CADDRA) http://www.caddra.ca/cms4/index.php?option=com_content&view=article&id=26&Itemid=70&lang=en
 BCGuidelines.ca <http://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines>
 American Academy of Child and Adolescent Psychiatry (AACAP) <http://www.aacap.org/>
 YoungMinds <http://www.youngminds.org.uk/search?q=guidelines>

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3 Royal College of Paediatrics and Child Health (RCPCH)
4 [http://www.rcpch.ac.uk/improving-child-health/clinical-guidelines-and-](http://www.rcpch.ac.uk/improving-child-health/clinical-guidelines-and-standards/endorsed-and-supported/child-mental-health)
5 [standards/endorsed-and-supported/child-mental-health](http://www.rcpch.ac.uk/improving-child-health/clinical-guidelines-and-standards/endorsed-and-supported/child-mental-health)
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7 Ministry of Health Malaysia <http://www.moh.gov.my/index.php/pages/view/149>
8 Canadian Mental Health Association (CMHA) <http://www.cmha.ca/>
9 National Institute for Health Care Excellence (NICE) <https://www.nice.org.uk/guidance>
10 Canadian Medical Association Infobase [https://www.cma.ca/En/Pages/clinical-practice-](https://www.cma.ca/En/Pages/clinical-practice-guidelines.aspx)
11 [guidelines.aspx](https://www.cma.ca/En/Pages/clinical-practice-guidelines.aspx)
12 Centre for Addiction and Mental Health (CAMH)
13 <http://www.camh.ca/en/hospital/Pages/home.aspx>
14 Mental Health Commission of Canada <http://www.mentalhealthcommission.ca/English/>
15 Canadian Psychological Association <http://www.cpa.ca/>
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18 In addition, a search, using the same terms, was u
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PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol*

Section and topic	Item No	Page#	Checklist item
ADMINISTRATIVE INFORMATION			
Title:			Towards High Quality, Useful Practice Guidelines for Child and Youth Mental Health Disorders: Protocol for a Systematic Review and Consensus Exercise.
Identification	1a	1	Identify the report as a protocol of a systematic review
Update	1b	N/A	If the protocol is for an update of a previous systematic review, identify as such
Registration	2	3	If registered, provide the name of the registry (such as PROSPERO) and registration number
Authors:			
Contact	3a	1	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author
Contributions	3b	2	Describe contributions of protocol authors and identify the guarantor of the review
Amendments	4	N/A	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
Support:			
Sources	5a	2	Indicate sources of financial or other support for the review
Sponsor	5b	N/A	Provide name for the review funder and/or sponsor
Role of sponsor or funder	5c	2	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol
INTRODUCTION			
Rationale	6	4	Describe the rationale for the review in the context of what is already known
Objectives	7	4	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)
METHODS			
Eligibility criteria	8	5	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review
Information sources	9	5	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage
Search strategy	10	5	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated

Study records:			
Data management	11a	5	Describe the mechanism(s) that will be used to manage records and data throughout the review
Selection process	11b	5	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)
Data collection process	11c	6	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators
Data items	12	6	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications
Outcomes and prioritization	13	6	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale
Risk of bias in individual studies	14	6	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
Data synthesis	15a	6	Describe criteria under which study data will be quantitatively synthesised
	15b	6	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I^2 , Kendall's τ)
	15c	N/A	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)
	15d	N/A	If quantitative synthesis is not appropriate, describe the type of summary planned
Meta-bias(es)	16	N/A	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)
Confidence in cumulative evidence	17	N/A	Describe how the strength of the body of evidence will be assessed (such as GRADE)

*** It is strongly recommended that this checklist be read in conjunction with the PRISMA-P Explanation and Elaboration (cite when available) for important clarification on the items. Amendments to a review protocol should be tracked and dated. The copyright for PRISMA-P (including checklist) is held by the PRISMA-P Group and is distributed under a Creative Commons Attribution Licence 4.0.**

From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015 Jan 2;349(jan02 1):g7647.