Public Health Ontario | Santé publique Ontario

Screening for Perinatal Depression

Adapting Existing Guidelines to the Ontario Public Health System Context

September 2018

Public Health Ontario

Public Health Ontario is a Crown corporation dedicated to protecting and promoting the health of all Ontarians and reducing inequities in health. Public Health Ontario links public health practitioners, frontline health workers and researchers to the best scientific intelligence and knowledge from around the world.

Public Health Ontario provides expert scientific and technical support to government, local public health units and health care providers relating to the following:

- communicable and infectious diseases
- infection prevention and control
- environmental and occupational health
- emergency preparedness
- health promotion, chronic disease and injury prevention
- public health laboratory services

Public Health Ontario's work also includes surveillance, epidemiology, research, professional development and knowledge services. For more information, visit publichealthontario.ca.

How to cite this document:
Ontario Agency for Health Protection and Promotion (Public Health Ontario). Screening for perinatal depression: adapting existing guidelines to the Ontario public health system context. Toronto, ON: Queen's Printer for Ontario; 2018.

ISBN: 978-1-4868-2383-3

Public Health Ontario acknowledges the financial support of the Ontario Government.

Authors

Brent W. Moloughney, MD, MSc, FRCPC
Medical Director
Health Promotion, Chronic Disease and Injury Prevention
Public Health Ontario

Cassandra Ogunniyi, PhD, MSSc
Project Assistant
Niagara Region Public Health

Anna Vanderlaan, MPH
Health Promotion Specialist
Family Health Promotion
Wellington-Dufferin-Guelph Public Health

Acknowledgements

The authors wish to express their sincere appreciation to Dr. Behnoosh Dashti for her work while a Public Health and Preventive Medicine resident at Public Health Ontario (PHO) for proposing the use of the ADAPTE tool in developing a public health care pathway for perinatal depression. We also thank our colleagues at the Library Services team and the Knowledge Synthesis Services team at PHO for assisting with literature searching and review tasks.

Disclaimer

This document was developed by Public Health Ontario (PHO). PHO provides scientific and technical advice to Ontario's government, public health organizations and health care providers. PHO's work is guided by the current best available evidence at the time of publication.

The application and use of this document is the responsibility of the user. PHO assumes no liability resulting from any such application or use.

Introduction

The Healthy Human Development Table (HHDT) is a provincial group comprised of representatives from Ontario public health units (PHUs), Public Health Ontario (PHO), as well as academic and community leaders in early child development, child mental health, and related fields. Through their combined academic and practice experience, they are developing a Perinatal Mental Health Toolkit. The purpose of this toolkit is to build capacity and advance the consistency of practice among Ontario PHUs to plan and deliver an evidence-based, best practice approach to perinatal mental health promotion in their communities.

A key component of the HHDT's toolkit is a public health care pathway. Previous work of the HHDT indicated that among PHUs, there is widespread use of the Edinburgh Postnatal Depression Screening (EPDS) tool. However, there is inconsistency in how the EPDS tool is interpreted. As such, the toolkit's public health care pathway needs to provide relatively detailed evidence-based guidance regarding the use and interpretation of screening tools.

Consistent with its secretariat support for the HHDT, the HHDT requested that PHO prepare a report summarizing existing evidence regarding perinatal mental health screening. Preliminary scoping of the topic returned multiple existing clinical guidelines that summarize best practices for perinatal mental health screening, treatments and referral. Given this existing evidence base, it was decided that the focus on this knowledge synthesis project should be on the analysis of existing guidelines and their adaptation to the Ontario public health system context. The ADAPTE process was chosen as a framework for this project since it is specifically designed for this type of work:[1]

"The ADAPTE process" provides a systemic approach to adapting guidelines produced in one setting for use in a different cultural or organizational context. Adaptation can be used as an alternative to de novo guideline development – where guidelines currently exist or for customizing (an) existing guideline(s) to suit the local context."[1 (p.7)]

This report focusses on describing the application of the ADAPTE toolkit to adapt existing perinatal mental health guidelines' recommendations to inform the HHDT's toolkit. Pertinent steps of the ADAPTE process include: identifying the question or issue; searching and selecting exiting guidelines; assessing guideline quality; and, assessing guidelines' content.

This report provides a detailed description of the application of the ADAPTE process in support of the HHDT. Final decisions to accept or modify existing guideline recommendations for inclusion in the forthcoming Perinatal Mental Health Toolkit are those of the HHDT. As such, the ADAPTE step of assessing the acceptability and applicability of recommendations is not formally addressed in this report, but was a discussion with the HHDT that was enabled by the analysis provided by this report.

Methods

Identification of Pertinent Existing Guidelines

To identify pertinent existing guidelines, the search question used was: "What are the care pathways, best practices and guidelines to address perinatal mood disorders?" A search of MEDLINE, PsycINFO and CINAHL was conducted in 2016 limited to the English language, and publications in the preceding 10 years. Details of the search approach and results are available upon request.

The following guidelines were identified:

1. BC Mental Health and Substance Use Services, Perinatal Services BC. Best practice guidelines for mental health disorders in the perinatal period. 2014.[2]
2. Registered Nurses Association of Ontario (RNAO). Interventions for postpartum depression. 2005.[3]
3. beyondblue. Clinical practice guidelines: depression and related disorders - anxiety, bipolar disorder and puerperal psychosis - in the perinatal period: a guideline for primary health care professionals. 2011.[4]
4. National Institute for Health and Care Excellence (NICE). Antenatal and postnatal mental health: clinical management and service guidance. 2014.[5]
5. Scottish Intercollegiate Guidelines Network (SIGN). Management of perinatal mood disorders: a national clinical guideline. 2012.[6]

Of these, the HHDT gave initial precedence to the Canada-based guidelines from BC and RNAO. This decision was re-visited in early 2017 to consider new and revised guidelines that had been released, as well as interest in guidelines that addressed practice issues at a granular level. The final set[i] of included guidelines was as follows:

1. BC Mental Health and Substance Use Services, Perinatal Services BC. Best practice guidelines for mental health disorders in the perinatal period. 2014.[2]
2. Registered Nurses' Association of Ontario. Perinatal depression nursing best practice guideline. 2018 (in progress).[7]
3. beyondblue. Clinical practice guidelines: depression and related disorders - anxiety, bipolar disorder and puerperal psychosis - in the perinatal period: a guideline for primary health care professionals. 2011.[4]

[i] Note: following the completed drafting of this report, an update of the beyondblue's guidelines was published. The minor changes in recommendations from the 2011 to 2017 versions were incorporated into the HHDT's Perinatal Mental Health Toolkit.

4. Siu AL, US Preventive Services Task Force (USPSTF), Bibbins-Domingo K, Grossman DC, Baumann LC, Davidson KW, et al. Screening for depression in adults: US Preventive Services Task Force Recommendation Statement. 2016.[8]

Appraising Guideline Quality

The AGREE II tool is comprised of 23 items in 6 domains, with each item scored on a 7-point scale.[9] The tool's domains are:

- Scope and purpose
- Stakeholder involvement
- Rigour of development
- Clarity of presentation
- Applicability
- Editorial independence

Each guideline is given an overall assessment score, as well as a score in each domain. A detailed manual accompanies the tool to assist in the interpretation of each item.

The AGREE II tool was applied independently by three reviewers to each of the four included guidelines. Discrepancies of two or more points on the scoring of any item were discussed among reviewers and resolved by consensus.

Comparing Guidelines' Recommendations

A data extraction table was developed to capture guidelines' recommendations for pertinent components of the care pathways. The level of evidence rating, if provided, was also captured for each recommendation.

In discussing preliminary findings with the HHDT, it became apparent that clinical guidelines' recommendations regarding ideal screening times in the postpartum period did not align with the window of opportunity that public health in Ontario has to screen at least some women in the first couple of weeks after delivery (i.e., immediate postpartum period). To address this issue, the following approach was taken:

- Review of the USPSTF systematic review to identify:
    - The extent that existing effectiveness screening trials had included screening women in the immediate postpartum period
    - The extent that validation studies of the EPDS had included women in the immediate postpartum period

- Supplementary literature search to identify:
    - Any additional EPDS validation studies
    - Correlation studies of the EPDS used in the immediate postpartum time period and a later time

For the above supplementary literature search, PHO Library Services developed and implemented a search strategy (available upon request). Knowledge Synthesis Services staff applied inclusion and exclusion criteria to identify relevant studies. One staff person screened all of the abstracts while a second reviewer screened a 10% sample. Differences in application of selection criteria were addressed through discussion among the reviewers.

Results

Guideline Quality

The four selected guidelines varied slightly in purpose and target audience, although all were relevant to screening for perinatal depression. Substantial differences existed among guidelines with respect to:

- Comprehensiveness – the extent that a range of screening-related issues are addressed
- Granularity – the detail to which practice recommendations are provided
- Rigour – the process used to gather and synthesize the evidence and formulate the recommendations.

The RNAO has been preparing a perinatal depression nursing best practice guideline with a target audience of nurses, other health care providers, and administrators.[7] The purpose of the guideline is to support evidence-based decision making in regards to assessing and providing interventions for people at risk for, or experiencing, perinatal depression. These guidelines are comprehensive and rigorous, although lack detail in some specific areas, such as which tools to use to screen for depression.

In 2011, the national depression initiative in Australia, beyondblue, published the Clinical Practice Guidelines: Depression and Related Disorders – Anxiety, Bipolar Disorder and Puerperal Psychosis – in the Perinatal Period.[4] These guidelines target primary health care professionals, but can be used by any health care professional that works with women in the perinatal timeframe to identify and effectively treat mental health problems. The guidelines are based on published evidence that is summarized and formulated into recommendations along with a corresponding evidence grade. In sections where evidence is lacking, good practice points (GPPs) are provided based on some evidence and/or best practice clinical judgement. These guidelines are comprehensive, rigorous and provide detailed guidance including practice tools.

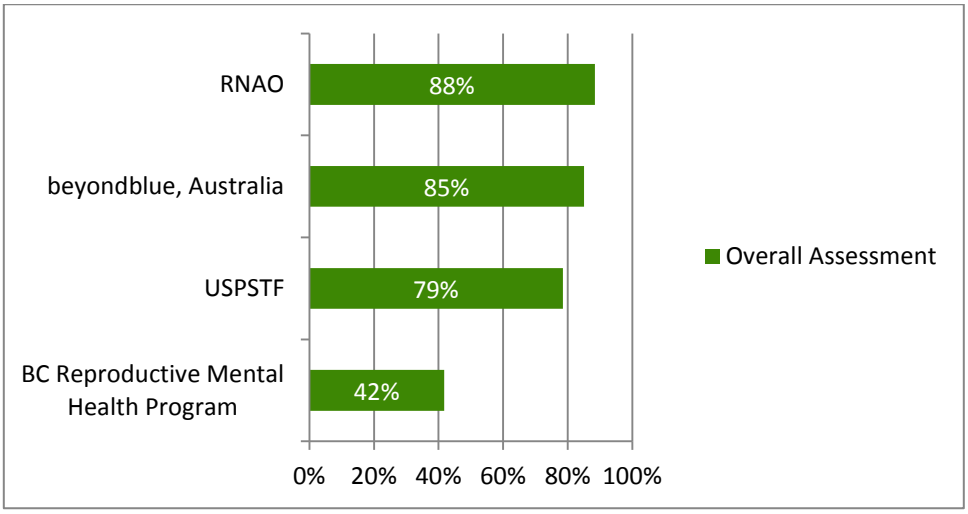
The USPSTF Recommendation Statement on *Screening for Depression in Adults,*[8] was published in 2016 and supported by two documents, *Primary Care Screening for and Treatment of Depression in Pregnant and Postpartum Women: Evidence Report and Systematic Review for the US Preventive Services Task Force,*[10] and *Screening for Depression in Adults: An Updated Systematic Evidence Review for the U.S. Preventive Services Task Force*.[11] The recommendation is aimed at primary care clinicians with a narrow focus on the effectiveness of screening for depression. While rigorous, these guidelines are neither comprehensive nor granular in character.

The 2014 BC *Best Practice Guidelines for Mental Health Disorders in the Perinatal Period* is aimed at healthcare clinicians with the goal to promote collaborative and supportive care of women/mothers with mental health disorders, their babies, and families during the perinatal period.[2] They provide details on how to recognize, diagnose, treat, and follow up with women experiencing perinatal

mental health disorders. The guidelines have breadth and depth of detail focused on applicability. While therefore comprehensive and granular, they are not as rigorous as the other guidelines because their methodology is not explicitly stated as to how evidence was used to formulate their recommendations. For example, a grading scale on the quality of evidence for their recommendations is not provided.

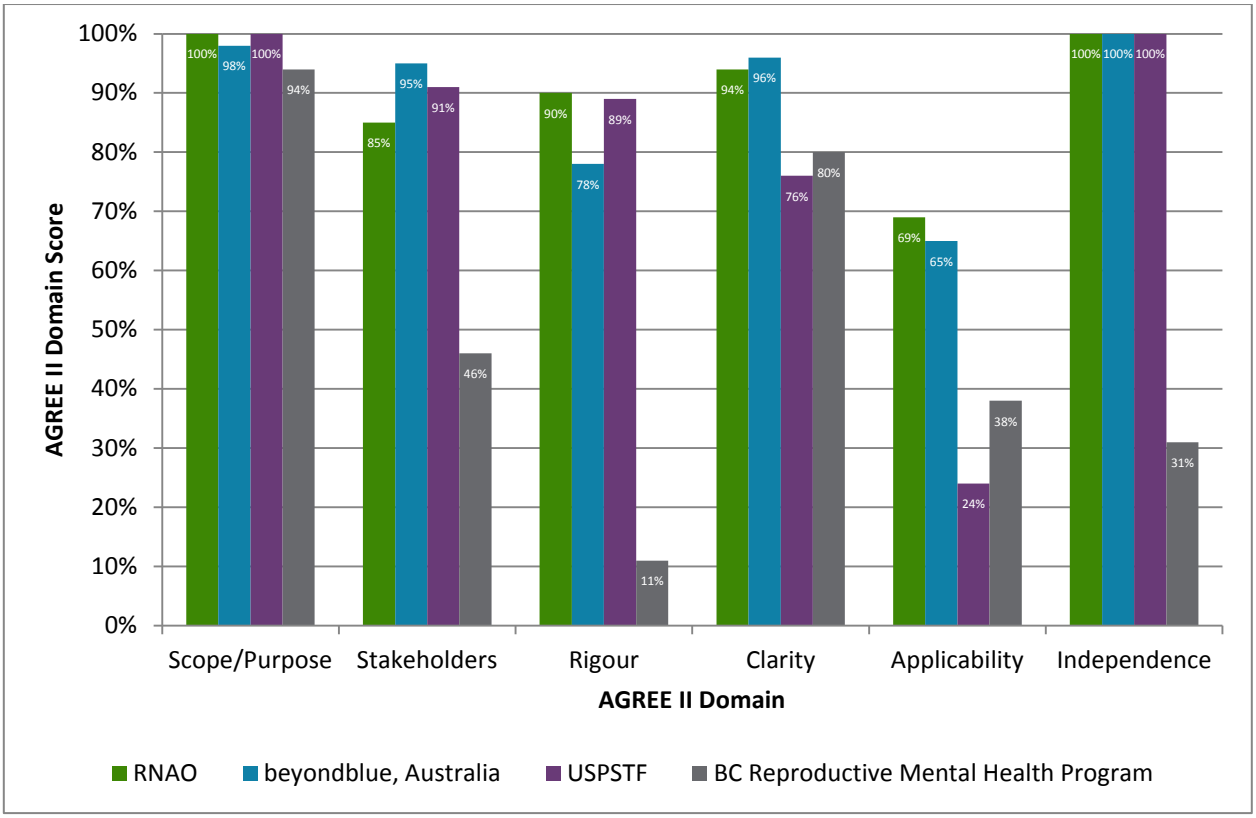
The differences between the documents resulted in a spectrum of quality when assessed using the AGREE II scoring matrix, partially related to the purpose and focus of each guideline as described previously. Overall, the RNAO guidelines had the highest assessment score of 88%, followed by beyondblue from Australia with a score of 85%, the USPSTF screening recommendation publications at 79%, and the BC Reproductive Mental Health Program guidelines at 42% (Figure 1).

Figure 1: Overall Assessment Using AGREE II



The overall scores identify the combined quality of each guideline, however, the totals can mask scores in specific domains. The individual domain scores (Figure 2) provide a greater degree of detail, which is important in assessing the quality of information presented. For example, the rigour of development domain is particularly important for the task of selecting recommendations as it details the sources and processes used to develop the recommendations presented in each guideline.

Figure 2: AGREE II Scores Per Domain



The rigour of development domain is scored using eight sub-items relating to the systematic methods for gathering and providing evidence to support the stated recommendations. The BC Reproductive Mental Health Program Guidelines scored relatively poorly in this domain with a score of 11%. This was due to several reasons including: not providing details of the methods used to develop their recommendations; sources they used were not clearly linked to the recommendations; and, no details on regarding the purpose and intent of external reviewers and how their feedback was incorporated into the final publication.

The beyondblue guidelines received a score of 78% in the rigour domain as they provided a thorough description of the systematic methods and selection criteria used, along with the strengths and limitations of the evidence, and a full description of the data extraction, synthesis and grading matrix used to formulate the recommendations. Searches were conducted in Embase, MEDLINE, PsycINFO, CINAHL and the Cochrane Database of Systematic Reviews using keywords and 26 research questions of peer-reviewed journal articles in English up to 2009. The NHMRC (2009) Levels of Evidence and Grades of Recommendations for Developers of Guidelines were used to grade the evidence reviewed. The guidelines were not as thorough in providing details about the external review process, the update process, and the health benefits, side effects, and risks of the recommendations other than those addressing pharmacologic therapies.

The USPSTF and RNAO guidelines received similarly high scores in the rigour domain with clearly described details relating to: the systematic methods and selection criteria used; the strengths and

limitations of the evidence; a process to update the guidelines; and the benefits, side effects, and risks of the recommendations. The USPSTF guidelines were not as clear on the process of external review. RNAO did describe a process for external review; however it was missing details, such as the names of reviewers and their impact on the overall guidelines.

The USPSTF searched MEDLINE, PubMed, PsycINFO, and the Cochrane Collaboration Registry of Controlled Trials for journal articles and grey literature of potentially eligibly trials up to January 20, 2015. They used multiple tools to assess the evidence. The Quality Assessment of Diagnostic Accuracy II was used for diagnostic accuracy, the Newcastle-Ottawa Scale was used for observational studies, and the Assessment of Multiple Systematic Reviews (AMSTAR) was used to assess the quality of the foundational evidence in regards to the harms of antidepressant treatment in pregnant and postpartum women.

Six search engine databases were used for the RNAO guidelines, namely the Cumulative Index to Nursing and Allied Health (CINAHL), Cochrane Central Register of Controlled Trials (CENTRAL), Cochrane Database of Systematic Reviews (CDSR), Embase, MEDLINE and PsycINFO. Journal articles published between 2006 and 2015 in English were screened and assessed creating a summary of literature results that were used by the expert panel to create the recommendations. Additionally, six international guidelines were critically appraised using the *Appraisal of Guidelines for Research and Evaluation Instrument II*.[9]

Among other AGREEII domains, those with the highest overall scores were for scope/purpose and clarity with ranges from 94-100% and 76-96%, respectively (Figure 2). The scope and purpose domain focused on the overall objectives, health questions and audience of the guidelines, which were all fairly clearly described in the selected guidelines. The clarity domain addressed how clear the recommendations were presented, if they were easy to identify, and if different options were clearly provided.

The applicability domain had the lowest scores overall. This domain addresses whether guidelines provide details on implementing the recommendations, including barriers and facilitations of application, advice or tools for practical implementation, consideration of resource implications, and the provision of related monitoring and auditing criteria. Each guideline differed in the specifics of what aspect of this domain that they succeeded in. For example, the USPSTF guidelines provide details on barriers and facilitators for implementation, but did not provide details on the other aspects of this domain. Conversely, the beyondblue and BC Reproductive Mental Health Program guidelines had multiple tools and advice for implementation and the RNAO guidelines had some advice and tools for implementation. RNAO provided a good discussion of the barriers and facilitators, while beyondblue and BC Reproductive Mental Health Program provided a limited discussion on this topic. All three of these guidelines mentioned considering cost implications, but did not go into sufficient details regarding resource needs. The RNAO and beyondblue guidelines provided thorough descriptions of how to monitor and evaluate implementation, while BC Reproductive Mental Health Program was limited to monitoring prescriptions.

Guideline Recommendations

The recommendations from each of the four selected guidelines are provided in relation to eight research questions concerning screening for perinatal depression. Some of the recommendations are clear with corresponding evidence grades, while others are statements without corresponding grades. Each guideline used a unique rating system. Appendix 1 includes a summary of the evidence grading system used for each guideline.

1. Should health care providers screen for perinatal depression?

Table 1: Guidelines' Recommendations and Their Evidence Grades for Screening for Perinatal Depression

Guideline	Recommendation	Evidence Grade*
BC Reproductive Mental Health Program[2]	A BC Provincial Position Statement, supported by BC Reproductive Mental Health Program, Perinatal Services BC and BC Ministry of Health, recommends universal screening of perinatal women for depression.(p19) The EPDS is valid for screening new biological fathers, and parents of adopted babies. (p21,22)	No grade
USPSTF[8]	The USPSTF recommends screening for depression in the general adult population, including pregnant and postpartum women. Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.(p380)	B
beyondblue[4]	The EPDS should be used by health professionals as a component of the assessment of all women in the antenatal and postnatal period for symptoms of depression or co-occurring depression and anxiety.(p23)	B
RNAO[7]	Routinely screen for risk of developing perinatal depression, using a valid screening tool as part of prenatal and postpartum care.(p26)	V

*See Appendix 1 for guidelines' evidence grade definitions.

2. When and how often should the screening tool be administered?

Table 2: Guidelines' Recommendations and Their Evidence Grades for When and How Often to Screen

Guideline	Recommendation	Evidence Grade*
BC Reproductive Mental Health Program[2]	There is no research evidence recommending a specific timeframe for screening during pregnancy. Screen at least once during pregnancy and once in the postpartum period. Suggested timeframes are: 28 to 32 weeks gestation (although the tool is valid anytime), 6 to 15 weeks postpartum and anytime concerns are identified.(p34) The valid and reliable timeframe for offering the EPDS to new fathers is similar to new mothers.(p22)	No grade
USPSTF[8]	The optimal timing and interval for screening for depression is not known. A pragmatic approach might include screening all adults who have not been screened previously and using clinical judgment in consideration of risk factors, comorbid conditions, and life events to determine if additional screening of high-risk patients is warranted.(p382)	No grade
beyondblue[4]	All women should complete the EPDS at least once, preferably twice, in both the antenatal period and the postnatal period (ideally 6–12 weeks after the birth). Administration of the EPDS can be readily integrated with existing routine antenatal and postnatal care.(p24)	GPP
RNAO[7]	In Appendix I the instructions for administration of the EPDS, states that the EPDS can be administered anytime from 0 to 52 weeks postpartum.	No grade

*See Appendix 1 for guidelines' evidence grade definitions.

3. What tool should be used to screen?

Table 3: Guidelines' Recommendations and Their Evidence Grades for Choice of Screening Tool

Guideline	Recommendation	Evidence Grade*
BC Reproductive Mental Health Program[2]	In BC, the EPDS is the recommended depression screening tool for the perinatal period.(p20)	No grade
USPSTF[8]	All studies used the EPDS for screening. No studies of screening with other tools for pregnant and postpartum women met the inclusion criteria.(p384)	No grade
beyondblue[4]	The EPDS should be used by health professionals as a component of the assessment of all women in the antenatal and postnatal period for symptoms of depression or co-occurring depression and anxiety.(p23)	B
RNAO[7]	No specific screening or assessment tools for perinatal depression are promoted in this Guideline,(p7) because the research questions that shaped the systematic review focus on identification of effective interventions to support the screening and assessment for perinatal depression.(p6)	No grade

*See Appendix 1 for guidelines' evidence grade definitions.

4. Are additional assessments recommended beyond the screening tool?

This question is divided into two sections: concurrent assessments conducted alongside the EPDS that inform decision-making about further support and/or referral; and, the need for a comprehensive mental health assessment subsequent to, and confirming, the findings of a positive EPDS screening result.

Table 4: Guidelines' Recommendations and Their Evidence Grades for Concurrent Assessments in Addition to Using the EPDS

Guideline	Recommendation	Evidence Grade*
beyondblue[4]	As early as practical in pregnancy and 6–12 weeks after a birth, all women should be asked questions around psychosocial domains as part of normal care. If a woman affirms the presence of psychosocial factors, she should be asked whether she would like help with any of these issues.(p19) Assessing the mother–infant interaction should be an integral part of the care of women in the postnatal period.(p29)	GPP

*See Appendix 1 for guidelines' evidence grade definitions.

Table 5: Guidelines' Recommendations and Their Evidence Grades for Conducting a Comprehensive Mental Health Assessment

Guideline	Recommendation	Evidence Grade*
BC Reproductive Mental Health Program[2]	Assuming medical conditions have been excluded, the BC Practice Support Program recommends the following steps for diagnosing depression: 1. Diagnostic assessment interview (Appendix 2 for guidelines). 2. Confirmation of the suspected diagnosis with the DSM-V criteria.(p23)	No grade
USPSTF[8]	Positive screening results should lead to additional assessment that considers severity of depression and comorbid psychological problems, alternate diagnoses, and medical conditions.(p382)	No grade
beyondblue[4]	Decision-making about further assessment for anxiety should take into account the woman's answers to questions 3, 4 and 5 of the EPDS and her response to the psychosocial assessment question about 'worrying'.(p23) Where significant difficulties are observed with the mother–infant interaction and/or there is concern about the mother's mental health, the risk of harm to the infant should be assessed.(p30) Comprehensive mental health assessment is required for women with reported or observed marked changes in mood, thoughts, perceptions and behaviours in the early postnatal period.(p30)	GPP

Guideline	Recommendation	Evidence Grade*
	Women identified as being at risk of suicide (through clinical assessment and/or the EPDS) should be specifically assessed. Any immediate risk should be managed and support and treatment options considered.	
RNAO[7]	Conduct or facilitate access to a comprehensive perinatal depression assessment with persons who screen positive for perinatal depression.(p30)	V

*See Appendix 1 for guidelines' evidence grade definitions.

5. What cut-offs are recommended if using the EPDS?

Table 6: Guidelines' Recommendations and Their Evidence Grades for EPDS Score Interpretation

Guideline	Recommendation	Evidence Grade*
BC Reproductive Mental Health Program[2]	Score of 9-11 – depression possible. Score of 12-13 – fairly high possibility of depression. Score of 14 and higher – probable depression. Positive scores (1, 2, or 3) on question 10 indicate suicide risk.(p22) The literature suggests it may be appropriate to use a lower cut-off score for fathers than mother, 10 in fathers verses 13 in mothers for probable depression.(p22)	No grade
USPSTF[8]	Sensitivity of the English-language EPDS with a cut-off score of 13 ranged from 0.67 (95%CI,0.18-0.96) to 1.00 (95% CI, 0.67-1.00), and specificity for detecting MDD was consistently at least 0.90.(p384)	No grade
beyondblue[4]	A score of 13 or more can be used for detecting symptoms of major depression in the *postnatal* period.(p23)	C
beyondblue[4]	A score of 13 (EPDS) or more in *antenatal* period can be used to detect possible major depression.(p23) Health professionals should be aware that women who score 13 or more on the EPDS may be experiencing anxiety, either alone or co-occurring with depression.(p23) For women with high scores on the EPDS (e.g. 15 or more): the	GPP

Guideline	Recommendation	Evidence Grade*
	administering health professional should ensure access to timely mental health assessment and management.(p25) For women who score 1, 2 or 3 on EPDS Question 10: the administering health professional should assess the woman's current safety and the safety of children in her care, and act according to clinical judgement, seek advice and/or refer immediately for mental health assessment.(p25)	
RNAO[7]	A score of 13 or greater indicates the presence of depressive symptoms. If a mother scores positive (1, 2 or 3) on self-harm item number 10, further assessment should be done.(p115)	No grade

*See Appendix 1 for guidelines' evidence grade definitions.

6. Is a repeat assessment recommended for some women?

Table 7: Guidelines' Recommendations and Their Evidence Grades for Repeat Assessment

Guideline	Recommendation	Evidence Grade*
BC Reproductive Mental Health Program[2]	Repeat the screening between four and six months postpartum for women with moderate scores on the early screen. (p21) Rescreen in 2-4 weeks for scores of 9-11.(p22)	No grade
USPSTF[8]	Not included	
beyondblue[4]	For women who score 10, 11 or 12 on the EPDS: administration of the EPDS should be repeated within 2–4 weeks, and existing support services reviewed and increased if needed.(p24)	GPP
RNAO[7]	Not included	

*See Appendix 1 for guidelines' evidence grade definitions

7. What, if any, guidance is provided regarding the use of clinical judgement for deciding on type of follow-up?

The guidelines' recommendations related to clinical judgement address two decision points: determining how to act upon the screening results and other screening assessments; and, developing a management plan after comprehensive assessment.

Table 8: Guidelines' Recommendations and Their Evidence Grades for Use of Clinical Judgement

Guideline	Recommendation	Evidence Grade*
beyondblue[4]	Clinical judgement is central to decision-making about further support and/or referral as it informs the interpretation of answers to the psychosocial factor assessment and scores derived from the EPDS.(p17)	GPP

*See Appendix 1 for guidelines' evidence grade definitions.

Table 9: Guidelines' Recommendations and Their Evidence Grades for Development of a Management Plan Following a Comprehensive Mental Health Assessment

Guideline	Recommendation	Evidence Grade*
BC Reproductive Mental Health Program[2]	The treatment recommended for a specific woman will depend on several factors including: 1. The nature of the mental health disorder. 2. The severity of symptoms. 3. Her previous response to treatment. 4. The support, resources and desires of the woman.(p24) For women with mild to moderate symptoms, non-pharmacological treatments are recommended before pharmacological treatments. If non-pharmacological treatments are not effective, medication may be required.(p24) For women with severe symptoms, medications may be initiated as the first-line therapy and non-pharmacological treatments added when the time is appropriate. Women who are acutely suicidal will require intensive home treatment or hospitalization.(p24)	No grade
USPSTF[8]	Given the potential harms to the fetus and newborn child from certain pharmacologic agents, clinicians are encouraged to consider evidence-based counseling interventions when managing depression in pregnant or breastfeeding women.(p382)	No grade
beyondblue[4]	In cases where comprehensive mental health assessment is required,	GPP

Guideline	Recommendation	Evidence Grade*
	health professionals should identify referral options and actively encourage and support women to use them.[(p35)] Decision-making about the type of psychological therapy should be based on the woman's preferences, the suitability of a particular therapy to the individual woman, the severity of her disorder and the availability of a suitably trained practitioner.[(p44)] In decision-making about the use of pharmacological treatment in the antenatal period, consideration should be given to the potential risks and benefits to the pregnant woman and fetus of treatment versus non-treatment.[(p49)] In decision-making about the use of pharmacological treatment in the postnatal period, this needs to be weighed against minimal possible exposure to the infant during breastfeeding.[(p49)]	
RNAO[7]	Depending on the assessment outcome following a comprehensive assessment for perinatal depression, a tailored plan of care is indicated. Examples of five potential outcomes of a perinatal depression assessment are listed in Table 2 (of the source guideline), along with suggested follow-up strategies. In each case, the expert panel recommends a collaborative approach that supports person-centred care and informed decision making. The care plan also needs to be documented, reviewed, and revised, as required, according to the person's response to the intervention or changing needs.[(p33-34)]	No grade

*See Appendix 1 for guidelines' evidence grade definitions.

Specific recommendations for treatment options and care pathways are provided by all four guidelines to varying degrees of detail. However, the RNAO and beyondblue guidelines provide evidence grades supporting the strength of each of their intervention recommendations. For details on these recommendations, see the related guideline documents.

Screening in the Immediate Post-Partum Period

There are potentially three sources of information on the effectiveness of screening in the immediate post-partum period (< 4 weeks):

- Screening effectiveness studies involving women
- Validation studies of the EPDS
- Correlation studies of EPDS scores in the immediate and later post-partum periods.

Unfortunately, none of the included perinatal depression screening studies included in the USPSTF evidence review screened women in the immediate post-partum period.[10]

Among EPDS validation studies, the USPSTF[10] identified four (see Table 2 of reference) that included at least some women from the immediate post-partum period.[12-15] Additional literature searches conducted by PHO Library Services identified an additional three studies.[16,17,18] Table 11 provides a summary of these 7 studies. Of these, five studies restricted participation to women in the immediate post-partum period. All assessed outcomes of major and minor depression or any depressive disorder, in which a cut-off of 10 is typically used, and all used non-English versions of the EPDS. While two studies did assess the EPDS' characteristics for detecting major depression (cut-off of 12 or 13 typically), both included women from a broad time period with most of the women being tested beyond four weeks postpartum. Neither study provided a breakdown of the EPDS' test characteristics for women in the immediate postpartum period. Overall, no validation studies were identified that applied the EPDS to detect major depression in the immediate post-partum period. Furthermore, all but one of the studies utilized non-English versions of the EPDS.

It is possible to compare the non-English EPDS validation results for minor and major depression, or any depressive disorder (scores of ≥10), for studies conducted in the immediate post-partum period and those conducted in the later post-partum period (

Table Table 10). Overall, the sensitivity and specificity are similar for these two time periods. However, it is not clear, and of particular relevance for the public health care pathway, whether there is similarity of the EPDS scoring characteristics of the ≥13 scores with respect to major depression.

Table 10: Comparison of Test Characteristics of Non-English EPDS Validation Studies of Minor/Major Depression by Postpartum Time Period

Post-partum Time Period	# Studies	Sensitivity (Range)	Sensitivity (Average)	Specificity (Range)	Specificity (Average)
< 4 weeks	6	61-100%	77%	60-95%	85%
≥ 4 weeks*	6	50-90%	72%	78-98%	91%

*Source: USPSTF Systematic Evidence Review. Appendix D Table 8.[11(p102)]

Table 11: Diagnostic Accuracy Studies of the EPDS Involving Women in the Immediate Postpartum Period

Source	Language	Country	No. of Patients	Weeks Postpartum	Setting	Reference Standard (weeks tested); Outcome	EPDS Threshold Sensitivity; Specificity
Alvarado-Esquivel et al., 2006[16]	Spanish	Mexico	49	<4	Routine postnatal care at public hospital	DSM-IV; Major and minor depression	≥10 Sensitivity: 75%; Specificity: 91%
Beck and Gable, 2001[12]	English	U.S.	150	2-12 (mean 39 days); no results breakdown by time	Preparation for child birth classes or newspaper advertisement	DSM-IV (2-12); Major Depression	≥12 Sensitivity: 78%; Specificity: 99%
Benvenuti et al., 1999[13]	Italian	Italy	113	0.5 (3 days)	Obstetric clinic outpatients	MINI DSM-III-R (0.5 (3 days)); Any depressive disorder	≥10 Sensitivity: 61%; Specificity: 95%
Bunevicius et al., 2009[14]	Lithuanian	Lithuania	94	2	Subset of larger study	CIDI-SF (2); Any depressive disorder	≥10 Sensitivity: 69%; Specificity: NR
Chen et al., 2013[15]	Chinese	Singapore	487	1-22 (median 5	Maternity hospital	DSM-IV-TR; Major	≥13 Sensitivity:

Source	Language	Country	No. of Patients	Weeks Postpartum	Setting	Reference Standard (weeks tested); Outcome	EPDS Threshold Sensitivity; Specificity
				wks); no results breakdown by time		depression	87%; Specificity: 97%
Jardri et al., 2006[17]	French	France	363	0.5 (3-5 days)	Maternity unit patients	MINI DSM-IV (8 weeks); Major and minor depression	≥10 Sensitivity: 82%; Specificity: 60%
Leonardou et al., 2009[18]	Greek	Greece	81	0.3 (day 2)	Maternity ward	DSM-III-R (8); Major and minor depression	≥10 Sensitivity: 100%; Specificity: 92%

CIDI-SF: Composite International Diagnostics Interview Short-Form; DSM: Diagnostic and Statistical Manual of Mental Disorders; NR: not reported.

An additional source of evidence is correlation studies between EPDS results in the immediate post-partum period and at a later point in time. For example, Dennis reported the correlation of 1-week EPDS scores with those at 4 weeks (r=0.72) and 8 weeks (r=0.65).[19] There are numerous other studies that have similarly reported such correlations. For example, Hannah et al. reported a correlation of 0.6 between measures at 5 days and 6 weeks,[20] Teissedre and Chabrol reported a correlation of 0.59 between measures at 2-3 days and 4-6 weeks,[21] and Edhborg reported a correlation of 0.39 between measures at 1 week and 2 months.[22]

While reported results from studies are statistically significant, the magnitudes of the correlations themselves are at best moderate. For example, a correlation of 0.6 means that the results of the EPDS scores shortly after delivery explain only 36% of the variance in scores at the later time period. The study by Hannah et al. provided sufficient detail to gain insight into what was occurring among the women that were screened.[20] At day 5, 33 women scored ≥13 on the EPDS while 25 scored ≥13 at week 6. Only 12 women overlapped between both groups. In addition to these 12 women, at week 6 there were 5 other women that had scored 10-12 at day 5 and whose scores had worsened with a further 8 who had had scores of <10 at that time. With 12 of the 33 women scoring ≥13 at day 5 accounted for, this means that the other 21 women no longer had scores of 13 or higher. The implication, as indicated by the magnitude of the correlation, is that scores in the immediate post-partum and later periods are associated with each other, but not strongly predictive.

Discussion

The ADAPTE process provided a useful approach to reviewing and summarizing recommendations of existing guidelines for screening for perinatal depression. The existing guidelines, collectively, addressed almost all of the components for the public health pathway. In order to inform the HHDT's decision-making regarding a public health care pathway for perinatal depression, existing guidelines would ideally be rigorous, comprehensive (i.e., address breadth of pathway components), and granular (i.e., address detailed aspects of practice). Table 12 shows that none of the guidelines were the top-rated for every characteristic.

While the guideline by the BC Reproductive Mental Health Program[2] is comprehensive and granular, and is frequently used by Ontario public health staff, its major drawback is the lack of a defined approach to the review and application of evidence for its recommendations. It therefore scored lowest for rigour. In contrast, the USPSTF recommendation[8] had a highly rigorous process, but only addresses whether or not screening should occur. The RNAO guideline[7] had the highest rigour and was comprehensive, but did not address some fundamental practice issues such as which screening tool to utilize. Overall, the beyondblue guideline from Australia[4] had the best combination of the three desired guideline characteristics.

Table 12: Comparison of Guideline Characteristics

Characteristic	BC RMHP	USPSTF	beyondblue	RNAO
Rigour	11%	89%	78%	90%
Comprehensiveness	Yes	No	Yes	Yes
Granular detail	Yes	No	Yes	No

Recommendations for Care Pathway Components

The ADAPTE process recommends the creation of a recommendation matrix allowing the comparison of guidelines' recommendations and associated evidence rating for specific care pathway components. Table 13 summarizes the recommendations for the various pathway components that were provided in the results section of this report.

Table 13: Summary of Recommendations to the HHDT for Public Health Care Pathway Components

Component	Recommendation	Consensus/Evidence	Comments
1.Should healthcare providers screen for perinatal depression	Routine screening is recommended in pregnant and post-partum women	Supported by all 4 guidelines; USPSTF and beyondblue concluded sufficient evidence (B ratings) while RNAO based on expert opinion, committee reports, clinical experience (V rating)	BC RMHP: valid for new biological fathers and parents of adopted babies USPSTF: adequate systems in place to ensure accurate diagnosis, treatment and follow-up
2.When and how often should the screening tool be administered	Two guidelines (BC, RNAO) state can screen anytime. beyondblue suggests prenatal and 6-12 weeks after birth; BC RMHP suggests 28-32 weeks gestation and 6-15 weeks post-partum	Optimal timing and interval for screening is not known. No evidence grades provided. beyondblue utilizes a Good Practice Point for this item	USPSTF: use clinical judgement in consideration of risk factors, comorbid conditions, and life events to determine if additional screening of high-risk patients is warranted.
3.What tool should be used to screen for perinatal depression	EPDS is the recommended tool	Agreement among 3 guidelines with beyondblue providing a B rating; RNAO does not provide a recommendation because out-of-scope to research question	
4a.Are additional assessments recommended beyond the screening tool	Ask questions about psychosocial domains and assess mother-infant interactions	1 guideline addresses these issues (beyondblue Good Practice Points)	
4b.Are additional assessments recommended beyond	A positive screening result should lead to referral for a	Agreement among all guidelines (BC RMHP and USPSTF: no	

Component	Recommendation	Consensus/Evidence	Comments
the screening tool	comprehensive mental health assessment	rating; beyondblue-GPP; RNAO-V)	
5a.What cut-offs are recommended for the EPDS	A score of 13 or greater can be used in prenatal and post-partum period to detect possible major depression	Three guidelines identify 13 as the threshold for screening (USPSTF-no rating; beyondblue-GPP/C; RNAO-no rating); BC RMHP guideline identifies 12 as threshold	BC RMHP guideline notes that may be appropriate to use a lower cut-off score for fathers than mothers (10 vs 13)
5b.What cut-offs are recommended for the EPDS	Positive scores (1,2,3) on EPDS question 10 for self-harm warrant further assessment	Agreement among 3 guidelines with GPP from beyondblue and no ratings from BC or RNAO.	
6.Is repeat assessment recommended for some women	Repeat EPDS screening in 2-4 weeks for women who score 10-12	Two guidelines make this recommendation; BC (no rating), and beyondblue (GPP).	Note: BC RMHP uses 9-11 since has a 12 threshold for a positive screen; beyondblue also recommends that existing support services be reviewed and increased if needed
7a.What, if any, guidance is provided regarding clinical judgement for deciding on type of follow-up	Clinical judgement is central to decision-making about further support and/or referral as it informs the interpretation of answers to the psychosocial factor assessment and scores derived from the EPDS	One guideline (beyondblue-GPP) addresses this issue explicitly	RNAO recommends integrate theory and clinical practice opportunities regarding the assessment, prevention, screening, and interventions of perinatal depression care into undergraduate nursing and other health sciences curricula. (IV)
7b.What, if any,	Determining the type of	Each guideline	In cases where

Component	Recommendation	Consensus/Evidence	Comments
guidance is provided regarding clinical judgement for deciding on type of follow-up	follow-up needs to consider the number and type of psychosocial and other factors involved, the severity of symptoms and the preferences of the woman and her significant other(s).	provides varying levels of detail addressing how to tailor a plan of care.	comprehensive mental health assessment is required, health professionals should identify referral options and actively encourage and support women to use them. (beyondblue, GPP)

Screening in the Immediate Post-partum Period

In discussing preliminary results from this work with the HHDT, the issue of screening in the immediate post-partum period emerged due to the window of opportunity that public health staff have in contacting women as part of the Healthy Baby Healthy Child (HBHC) assessment process. While ideally this assessment would occur within 48 hours of discharge, for various reasons it can take longer to make contact with most women contacted within 2-3 weeks.

As per the summarized results in Table 13, there is a lack of evidence for identifying an optimal time for conducting screening. While some of the guidelines indicate that the EPDS can be used anytime,[2,7] some guidelines identify ideal screening times of six weeks or more post-partum,[2,4] which is considerably past the less than three week time period by when most women would be contacted through the HBHC assessment. Potential concerns for screening in the immediate post-partum period include the existence of the baby blues experienced by many women and the development of depression later in the post-partum period among some women.

There are potentially three sources of evidence that could inform this issue: i) results of screening effectiveness studies; ii) validation studies of the EPDS; and, iii) correlation of EPDS scores from the immediate post-partum period to later in the post-partum period when screening or validation studies have been shown to be effective.

According to the USPSTF evidence review, none of the six, main screening studies involved screening of women in the immediate post-partum period.[8] Only a small number of validation studies of the EPDS against a gold standard have been conducted with women in the immediate post-partum period. Among these, none used an English-language EPDS with a cut-off of 13 or more (i.e., screening for major depression), which is how the EPDS would likely be used in the Ontario public health context. The only validation studies conducted with women in the immediate post-partum period involved non-English language versions of the EPDS that were screening for major and minor depression or any depressive disorder for which a cut-off of 10 is more appropriate. While the sensitivity and specificity of the non-English language EPDS scales were similar to those of studies with English language EPDS scales using a

cut-off of 10 for screening for major/minor depression or any depressive disorder, this does not indicate how the non-English language scales would perform at a cut-off of 13 or greater for major depression.

The other potential source of information is from correlation studies of EPDS scores in the immediate and later post-partum periods. While there is some association between these scores with correlations observed of approximately 0.6, the immediate post-partum scores explain less than 40% of the variance of scores later in the post-partum.

In summary, there is an absence of evidence regarding the effectiveness of using the English language EPDS in the immediate post-partum period to screen for major depression with a cutoff of 13.

Implications for HHDT

This report's analysis of the recommendations of existing guidelines for screening for perinatal depression provides the input from which the HHDT can consider their acceptability and applicability for the Ontario public health context.

Conclusion

The ADAPTE process was utilized to search and assess existing guidelines for perinatal depression as an alternative to developing new guidelines for Ontario's public health system. Four existing guidelines were included from Canada, the US, and Australia exhibiting a mixture of evidence-based rigour, comprehensiveness, and granularity. The comparison of recommendations from the guidelines provides an important evidence base for informing the HHDT's development of a public health care pathway for inclusion in the perinatal mental health toolkit.

Appendix 1 – Summary of Evidence Grading Systems of Existing Guidelines

BC Reproductive Mental Health Program; Perinatal Services BC

This guideline did not have an evidence grading system.

Source: BC Reproductive Mental Health Program; Perinatal Services BC. Best practice guidelines for mental health disorders in the perinatal period. Vancouver, BC: Perinatal Services BC; 2014 Mar.

Registered Nurses' Association of Ontario

The RNAO utilized the following evidence grading system adapted from:

- Scottish Intercollegiate Guidelines Network. (2011). SIGN 50: A guideline developer's handbook. Retrieved from http://www.sign.ac.uk/pdf/sign50.pdf
- Pati, D. (2011). A framework for evaluating evidence in evidence-based design. Health Environments Research & Design Journal, 4(3), 50-71.

Table A1.1: Levels of Evidence from the Registered Nurses' Association of Ontario

Levels of Evidence	Source of Evidence
Ia	Evidence obtained from meta-analysis or systematic reviews of randomized controlled trials, and/or synthesis of multiple studies primarily of quantitative research.
Ib	Evidence obtained from at least one randomized controlled trial.
IIa	Evidence obtained from at least one well-designed controlled study without randomization.
IIb	Evidence obtained from at least one other type of well-designed quasi-experimental study, without randomization.
III	Synthesis of multiple studies primarily of qualitative research.
IV	Evidence obtained from well-designed non-experimental observational studies,

Levels of Evidence	Source of Evidence
	such as analytical studies or descriptive studies, and/or qualitative studies.
V	Evidence obtained from expert opinion or committee reports, and/or clinical experiences of respected authorities.

Source: Registered Nurses' Association of Ontario. Perinatal depression nursing best practice guideline. 2nd ed. Toronto, ON: Registered Nurses' Association of Ontario; 2018 (in progress).

beyondblue – Australia

This guideline used the grading scheme from: NHMRC Levels of Evidence and Grades for Recommendations for Developers of Guidelines (NHMRC 2009).

Table A1.2: beyondblue Levels of Evidence

Grade	Description
A	Body of evidence can be trusted to guide practice
B	Body of evidence can be trusted to guide practice in most situations
C	Body of evidence provides some support for recommendation(s) but care should be taken in its application
D	Body of evidence is weak and recommendation must be applied with caution

In addition, this guideline also included **'Good Practice Points' (GPP),** which were defined as: "points of advice that are based on lower quality evidence than is required for recommendations, and/or best practice clinical judgement."

Source: Clinical practice guidelines: depression and related disorders -- anxiety, bipolar disorder and puerperal psychosis -- in the perinatal period: a guideline for primary health care professionals. Melbourne, Australia: beyondblue: the national depression initiative; 2011 Feb.

US Preventive Services Task Force

This guideline group uses the following evidence rating scheme:

Table A1.3: US Preventive Services Task Force Guideline's Levels of Evidence

Grade	Definition	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer or provide this service.
C	The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.	Offer or provide this service for selected patients depending on individual circumstances.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the clinical considerations section of USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

Furthermore, the levels of certainty regarding net benefit is also defined as follows:

Table A1.4: US Preventive Services Task Force Guideline's Levels of Certainty Regarding Net Benefit

Level of Certainty	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by such factors as: The number, size, or quality of individual studies. Inconsistency of findings across individual studies. Limited generalizability of findings to routine primary care practice. Lack of coherence in the chain of evidence. As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.
Low	The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of: The limited number or size of studies. Important flaws in study design or methods. Inconsistency of findings across individual studies. Gaps in the chain of evidence. Findings not generalizable to routine primary care practice. Lack of information on important health outcomes. More information may allow estimation of effects on health outcomes.

Source: Siu AL, US Preventive Services Task Force (USPSTF). Screening for depression in adults: US Preventive Services Task Force Recommendation Statement. JAMA 2016;315(4):380-387.

References

1. The ADAPTE process: resource toolkit for guideline adaptation. Version 2.0 [Internet]. Pitlochry, UK: Guideline International Network; 2009 [cited 2018 Jun 4]. Available from: http://www.g-i-n.net/document-store/working-groups-documents/adaptation/adapte-manual-for-guideline.pdf/view?searchterm=ADAPTE

2. BC Mental Health and Substance Use Services, Perinatal Services BC. Best practice guidelines for mental health disorders in the perinatal period [Internet]. Victoria, BC: Provincial Health Services Authority; 2014 [cited 2018 Jun 4]. Available from: http://www.perinatalservicesbc.ca/Documents/Guidelines-Standards/Maternal/MentalHealthDisordersGuideline.pdf

3. Registered Nurses Association of Ontario . Interventions for postpartum depression [Internet]. Toronto, ON: Registered Nurses Association of Ontario; 2005 [cited 2018 Jun 4]. Available from: http://rnao.ca/sites/rnao-ca/files/Interventions_for_Postpartum_Depression.pdf

4. Beyondblue. Clinical practice guidelines: depression and related disorders - anxiety, bipolar disorder and puerperal psychosis - in the perinatal period: a guideline for primary care health professionals. Melbourne, AU: Beyondblue; 2011. Available from: http://resources.beyondblue.org.au/prism/file?token=BL/0891

5. National Institute for Health Care and Excellence (NICE). Antenatal and postnatal mental health: clinical management and service guidance [Internet]. Manchester, UK: National Institute for Health Care and Excellence (NICE); 2014 [cited 2018 Jun 4]. Available from: http://nice.org.uk/guidance/cg192

6. Scottish Intercollegiate Guidelines Network. Management of perinatal mood disorders: a national clinical guideline [Internet]. Edinburgh, UK: Scottish Intercollegiate Guidelines Network; 2012 [cited 2018 Jun 5]. Available from: http://www.sign.ac.uk/assets/sign127.pdf

7. Registered Nurses' Association of Ontario. Perinatal depression nursing best practice guideline. 2nd ed. Toronto, ON: Registered Nurses' Association of Ontario; 2018 (in progress).

8. Siu AL, US Preventive Services Task Force (USPSTF), Bibbins-Domingo K, Grossman DC, Baumann LC, Davidson KW, et al. Screening for depression in adults: US Preventive Services Task Force Recommendation Statement. JAMA. 2016;315(4):380-7. Available from: https://jamanetwork.com/journals/jama/fullarticle/2484345

9. Brouwers MC, Kho ME, Browman GP, Burgers JS, Cluzeau F, Feder G, et al. AGREE II: advancing guideline development, reporting and evaluation in health care. CMAJ. 2010;182(18):E839-42. Available from: http://www.cmaj.ca/content/182/18/E839

10. O'Connor E, Rossom RC, Henninger M, Groom HC, Burda BU. Primary care screening for and treatment of depression in pregnant and postpartum women: evidence report and systematic review for the US Preventive Services Task Force. JAMA. 2016;315(4):388-406. Available from: https://jamanetwork.com/journals/jama/fullarticle/2484344

11. O'Connor E, Rossom RC, Henninger M, Groom HC, Burda BU, Henderson JT, et al. Screening for depression in adults: an updated systematic evidence review for the U.S. Preventive Services Task Force. Evidence synthesis No. 128. AHRQ Publication No. 14-05208-EF-1. Rockville, MD: Agency for Healthcare Research and Quality; 2016. Available from: https://www.ncbi.nlm.nih.gov/books/NBK349027/

12. Beck CT, Gable RK. Comparative analysis of the performance of the Postpartum Depression Screening Scale with two other depression instruments. Nurs Res. 2001;50(4):242-50.

13. Benvenuti P, Ferrara M, Niccolai C, Valoriani V, Cox JL. The Edinburgh Postnatal Depression Scale: validation for an Italian sample. J Affect Disord. 1999;53(2):137-41.

14. Bunevicius A, Kusminskas L, Bunevicius R. Validation of the Lithuanian version of the Edinburgh Postnatal Depression Scale. Medicina (Kaunas). 2009;45(7):544-8. Available from: http://medicina.lsmuni.lt/med/0907/0907-06e.htm

15. Chen H, Bautista D, Ch'ng YC, Li W, Chan E, Rush AJ. Screening for postnatal depression in Chinese-speaking women using the Hong Kong translated version of the Edinburgh Postnatal Depression Scale. Asia Pac Psychiatry. 2013;5(2):E64-72.

16. Alvarado-Esquivel C, Sifuentes-Alvarez A, Salas-Martinez C, Martinez-Garcia S. Validation of the Edinburgh Postpartum Depression Scale in a population of puerperal women in Mexico. Clin Pract Epidemiol Ment Health. 2006;2:33. Available from: https://cpementalhealth.biomedcentral.com/articles/10.1186/1745-0179-2-33

17. Jardri R, Pelta J, Maron M, Thomas P, Delion P, Codaccioni X, et al. Predictive validation study of the Edinburgh Postnatal Depression Scale in the first week after delivery and risk analysis for postnatal depression. J Affect Disord. 2006;93(1-3):169-76.

18. Leonardou A, Zervas Y, Papageorgiou C, Marks M, Tsartsara E, Antsaklis A, et al. Validation of the Edinburgh Postnatal Depression Scale and prevalence of postnatal depression at two months postpartum in a sample of Greek mothers. J Reprod Infant Psychol. 2009;27(1):28-39.

19. Dennis CL. Can we identify mothers at risk for postpartum depression in the immediate postpartum period using the Edinburgh Postnatal Depression Scale? J Affect Disord. 2004;78(2):163-9.

20. Hannah P, Adams D, Lee A, Glover V, Sandler M. Links between early post-partum mood and post-natal depression. Br J Psychiatry. 1992;160:777-80.

21. Teissedre F, Chabrol H. Detecting women at risk for postnatal depression using the Edinburgh Postnatal Depression Scale at 2 to 3 days postpartum. Can J Psychiatry. 2004;49(1):51-4.

22. Edhborg M. Comparisons of different instruments to measure blues and to predict depressive symptoms 2 months postpartum: a study of new mothers and fathers. Scand J Caring Sci. 2008;22(2):186-95.

Public Health Ontario
480 University Avenue, Suite 300
Toronto, Ontario
M5G 1V2
647.260.7100
communications@oahpp.ca
publichealthontario.ca