Best Evidence Statement (BESt)

Date published / posted – Final 3-12-2010

Screening of children and adolescents for Major Depressive Disorder (MDD)

Clinical Question

P (population/problem): Among children age 6 to 17 years being referred for major depression screening
I: (intervention) : do rating scales/surveys with semi-structured assessment interviews
C (comparison) : compared to a clinical assessment alone
O: (outcome) : improve accurate diagnosis, including subtype, identification of comorbidities, and assessment of functionality and severity?

Target Population Children and adolescents 6 to 17 years of age being screened for major depression

Recommendation/s (See Table of Recommendation Strength following references)

1. It is recommended, for patients with a suspected primary diagnosis of major depressive disorder, that a semi-structured assessment interview be conducted using rating scales/surveys in conjunction with the clinical assessment during the initial visit(s) (see Table 1 below). Use of the appropriate survey instruments (rating scales) aid in comprehensive diagnosing and future treatment planning *(Barton 2009 [5a], Birmaher 2007 [5a])*. (See attachment 1 for suggested schedule of use by visit for screening and long term treatment).

Note 1: Rating scales/surveys assist in the assessment interview and treatment of children and adolescents with psychopathology allowing for quantification and comparison of symptoms over time, across individuals and situations. Patient developmental appropriateness for the patient, psychometrics, and utility are several factors to consider when selecting one or more appropriate scales/surveys for use. Using multiple scales may minimize the limitations of a single scale *(Myers 2002 [5a])*.

Table 1: Rating Scales/Survey Instruments for Diagnosis of Major Depressive Disorder

Scale/Survey	Function	Age	Evidence
Achenbach Child Behavior Checklist - CBCL	Differentiate diagnosis	6 to 18	*See Note 2*
Achenbach Youth Self Report - YSR	Differentiate diagnosis	11 to 18	
Kiddie Schedule for Affective Disorders - K-SADS	Suicidality evaluation	Child to Adolescent	*See Note 3*
Clinical Global Impression CGI-Severity CGI-Improvement	Categorize severity		*See Note 4*
Clinical Global Assessment of Functioning - C-GAF	Determine level of functioning *5 minutes to interpret*		*See Note 5*
History and Physical	Identify Contributing/Risk Factors		*See Note 6*
Mental Status Exam - MSE	Diagnostic and treatment accuracy	6 to 17	*See Note 7*
Quick Inventory of Depressive Symptomology - QIDS-17	Diagnosis and severity *10 to 15 minutes*	12 to17	*See Note 8*
Parenting Stress Index - PSI	Identify Stress factors	Parent	*See Note 9*
Pediatric Quality of Life Inventory PedsQL	Measure change in functionality	2 to 18	*See Note 10*
Children's Interview for Psychiatric Syndromes – ChIPS	Diagnostic and identify comorbidities *(ADHD, GAD,ODD, SUD)* *Minutes: 49 inpatient/30 outpatient*	6 to18	*See Note 11*

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Note 2: The Child Behavior Checklist is a well-established survey originally developed and tested in 1987. The use of this survey more recently demonstrated utility for identifying children at high risk for subsequent psychiatric disorders within a population of children already at high risk by virtue of parental psychopathology *(Aebi 2009 [3a], Petty 2008 [4a])*.

Note 3: Because depression is closely related with suicidal thoughts and behavior it is strategic to evaluate these symptoms at the initial and subsequent assessments *(Birmaher 2007 [5a])*. The Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS) survey demonstrated higher reliable detection of adolescent suicidality when compared to clinician interview alone *(Holi 2008 [2a])*.

Note 4: An advantage of global assessment scales is that the total situation of the patient and not just one particular symptom is evaluated *(Schorre 2004 [5a])*. Global scales measuring functional impairment can clarify the impact of the illness, target treatments, determine services needed, and monitor treatment effectiveness *(Winters 2005 [5a])*.

Note 5: Screening for the presence of family psychopathology assists in both the diagnosis and treatment. Parental psychopathology can affect the child's ability and willingness to participate in treatment, may be predictive of course progression, and may influence treatment response *(Birmaher 2007 [5a])*.

Note 6: Clinical areas for inclusion when screening for Major Depressive Disorder include medical illnesses, physical examinations and laboratory tests as indicated *(Birmaher 2007 [5a])*.

Note 7: The child interview may be conceptualized under two broad categories; that which serves for history taking and the other for the mental status examination (MSE). The purpose of the MSE is to obtain a comprehensive cross-sectional description of the patient's mental state and consists of an assessment and description of the child's appearance and functioning as revealed in the interview situation *(King 1997 [5a])*. When combined with the historical information the MSE allows the clinician to formulate an accurate diagnosis and reasoned treatment plan.

Note 8: Measuring depression severity aids in the screening, measurement of treatment effect, and determining symptom remission *(Moore 2007 [2b])*.

Note 9: The Parent Stress Index is one of the most common tools used to provide a valid way for mental health professionals to gain confidence in decisions made on the basis of parents' level of distress *(Haskett 2006 [2a], Reitman 2002 [2a])*

Note 10: Clinical applications of quality of life measures include: assessment of functioning in children and adolescents with chronic medical conditions, responsiveness of patients to psychological interventions, and evaluation of significant changes in health status and impact on clinical decision making *(Palermo 2008 [1a], Varni 2002 [4a])*. The PedsQL survey has been demonstrated to be an adequate assessment instrument regarding depressive symptoms *(Reinfjell 2008 [2a])*.

Note 11: Areas for inclusion when screening for Major Depressive Disorder include subtypes of depressive disorders, and comorbidities *(Birmaher 2007 [5a])*. The Child Interview for Psychiatric Syndromes (ChIPS) is used to maximize clinician efficiency and as a diagnostic instrument in training and research *(Weller 2000 [1b], Swenson 2007 [2a])*.

Discussion/summary of evidence

The American Academy of Child and Adolescent Psychiatry provides guidelines for the psychiatric assessment of children and adolescents with psychiatric disorders *(King 1997 [5a])*. More specifically, the Academy of Child and Adolescent Psychiatry provide guidelines for the assessment and treatment of children and adolescents with depressive disorders *(Birmaher 2007 [5a])*. The use of guidelines along with clinical judgment, aid the clinician in achieving an accurate diagnosis and an appropriate treatment plan

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(Mash 2005 [5a], King 1997 [5a]). The use of rating scales/surveys, when used in the individualized child psychiatric interview assist in the quantitative assessment of specific symptom realms *(King 1997 [5a])*. In a ten-year review of rating scales it is noted that the use of scales are adjunctive to practice and are useful if the clinician selects the right tool for the situation and it is essential the clinician understand the function of the tool, ensure the development match to the patient, and select a tool with the best psychometric properties *(Myers 2002 [5a])*.

Health Benefits, Side Effects and Risks

Benefits: Accurate diagnoses were made when a scale/survey tool was used in the interview evaluation in adolescents *(Williams 2009 [1a])*. There were no studies that demonstrated an improvement in health outcome between the uses of a screening tool versus clinical interview; however depressed youth are at an increased risk of suicide. It is therefore considered reasonable that early identification may lead to earlier decrease in MDD symptoms if prompt treatment follows *(Barton 2009 [5a])*.

Risks: There are no studies that indicate risks from using screening tools for Major Depressive Disorder *(Barton 2009 [5a])*.

References/citations (evidence grade in *[ ]; see Table of Evidence Levels following references*)

Note: When using the electronic version of this document, ☜ indicates a hyperlink to the PubMed abstract. A hyperlink following this symbol goes to the article PDF when the user is within the CCHMC network.

1. **Aebi, M.; Winkler Metzke, C.; and Steinhausen, H.-C.:** Prediction of major affective disorders in adolescents by self-report measures. *Journal of Affective Disorders*, 115(1-2): 140-149, 2009, *[3a]* ☜.
2. **Barton, B.:** Screening and treatment for major depressive disorder in children and adolescents: US Preventive Services Task Force Recommendation Statement. *Pediatrics*, 123(4): 1223-8, 2009, *[5a]* _____ ☜ _____.
3. **Birmaher, B. et al.:** Practice parameter for the assessment and treatment of children and adolescents with depressive disorders. *J Am Acad Child Adolesc Psychiatry*, 46(11): 1503-26, 2007, *[5a]* _____ ☜ _____.
4. **Costello, J. E.; Erkanli, A.; and Angold, A.:** Is there an epidemic of child or adolescent depression? *Journal of Child Psychology and Psychiatry*, 47(12): 1263-1271, 2006, *[1a]* ☜ _____.
5. **Haskett, M. E.; Ahern, L. S.; Ward, C. S.; and Allaire, J. C.:** Factor structure and validity of the parenting stress index-short form. *Journal Of Clinical Child And Adolescent Psychology: The Official Journal For The Society Of Clinical Child And Adolescent Psychology, American Psychological Association, Division 53*, 35(2): 302-312, 2006, *[2a]* _____ ☜ _____.
6. **Holi, M. M.; Pelkonen, M.; Karlsson, L.; Tuisku, V.; Kiviruusu, O.; Ruuttu, T.; and Marttunen, M.:** Detecting suicidality among adolescent outpatients: Evaluation of trained clinicians' suicidality assessment against a structured diagnostic assessment made by trained raters. *BMC Psychiatry*, 8, 2008, *[2a]* ☜.
7. **Hughes, C. W.; Emslie, G. J.; Wohlfahrt, H.; Winslow, R.; Kashner, T. M.; and Rush, A. J.:** Effect of Structured Interviews on Evaluation Time in Pediatric Community Mental Health Settings. *Psychiatr Serv*, 56(9): 1098-1103, 2005, *[2b]* _____ ☜ _____.
8. **King, R. A.:** Practice parameters for the psychiatric assessment of children and adolescents. American Academy of Child and Adolescent Psychiatry. *J Am Acad Child Adolesc Psychiatry*, 36(10 Suppl): 4S-20S, 1997, *[5a]* _____ ☜ _____.
9. **Mash, E. J., and Hunsley, J.:** Evidence-Based Assessment of Child and Adolescent Disorders: Issues and Challenges. *Journal of Clinical Child and Adolescent Psychology*, 34(3): 362-379, 2005, *[5a]* ☜ _____.
10. **Moore, H. K. et al.:** A Pilot Study of an Electronic, Adolescent Version of the Quick Inventory of Depressive Symptomatology. *Journal of Clinical Psychiatry*, 68(9): 1436-1440, 2007, *[2b]* ☜ _____.
11. **Myers, K., and Winters, N. C.:** Ten-year review of rating scales. I: overview of scale functioning, psychometric properties, and selection. *J Am Acad Child Adolesc Psychiatry*, 41(2): 114-22, 2002, *[5a]* _____ ☜ _____.
12. **Palermo, T. M.; Long, A. C.; Lewandowski, A. S.; Drotar, D.; Quittner, A. L.; and Walker, L. S.:** Evidence-based assessment of health-related quality of life and functional impairment in pediatric psychology. *Journal of Pediatric Psychology*, 33(9): 983-996, 2008, *[1a]* ☜ _____.
13. **Petty, C. R.; Rosenbaum, J. F.; Hirshfeld-Becker, D. R.; Henin, A.; Hubley, S.; LaCasse, S.; Faraone, S. V.; and Biederman, J.:** The child behavior checklist broad-band scales predict subsequent psychopathology: A 5-year follow-up. *Journal of Anxiety Disorders*, 22(3): 532-539, 2008, *[4a]* ☜ _____.
14. **Reinfjell, T.; Hjemdal, O.; Aune, T.; Vikan, A.; and Diseth, T. H.:** The Pediatric Quality of Life Inventory (PedsQL) 4.0 as an assessment measure for depressive symptoms: a correlational study with young adolescents. *Nordic Journal of Psychiatry*, 62(4): 279-286, 2008, *[2a]* _____ ☜ _____.
15. **Reitman, D.; Currier, R. O.; and Stickle, T. R.:** A critical evaluation of the Parenting Stress Index-Short Form (PSI-SF) in a head start population. *Journal Of Clinical Child And Adolescent Psychology: The Official Journal For The Society Of Clinical Child And*

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Adolescent Psychology, American Psychological Association, Division 53, 31(3): 384-392, 2002, *[2a]* _____ ☜ _____.

16. **Schorre, B. E., and Vandvik, I. H.:** Global assessment of psychosocial functioning in child and adolescent psychiatry. A review of three unidimensional scales (CGAS, GAF, GAPD). *European Child & Adolescent Psychiatry*, 13(5): 273-286, 2004, *[5a]* _____ ☜ _____.
17. **Swenson, L. P.; Esposito-Smythers, C.; Hunt, J. I.; Hollander, B. L.; Dyl, J.; Rizzo, C. J.; Steinley, D. L.; and Spirito, A.:** Validation of the Children's Interview for Psychiatric Syndromes (ChIPS) with psychiatrically hospitalized adolescents. *J Am Acad Child Adolesc Psychiatry*, 46(11): 1482-90, 2007, *[2a]* _____ ☜ _____.
18. **Varni, J. W.; Seid, M.; Knight, T. S.; Uzark, K.; and Szer, I. S.:** The PedsQL 4.0 Generic Core Scales: sensitivity, responsiveness, and impact on clinical decision-making. *Journal Of Behavioral Medicine*, 25(2): 175-193, 2002, *[4a]* _____ ☜ _____.
19. **Weller, E. B.; Weller, R. A.; Fristad, M. A.; Rooney, M. T.; and Schecter, J.:** Children's Interview for Psychiatric Syndromes (ChIPS). *J Am Acad Child Adolesc Psychiatry*, 39(1): 76-84, 2000, *[1b]* _____ ☜ _____.
20. **Williams, S. B.; O'Connor, E. A.; Eder, M.; and Whitlock, E. P.:** Screening for child and adolescent depression in primary care settings: a systematic evidence review for the US Preventive Services Task Force. *Pediatrics*, 123(4): e716-35, 2009, *[1a]* _____ ☜ _____.
21. **Winters, N. C.; Collett, B. R.; and Myers, K. M.:** Ten-year review of rating scales, VII: scales assessing functional impairment. *J Am Acad Child Adolesc Psychiatry*, 44(4): 309-38; discussion 339-42, 2005, *[5a]* _____ ☜ _____.

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Note: Full tables of evidence grading system available in separate document:

- Table of Evidence Levels of Individual Studies by Domain, Study Design, & Quality (abbreviated table below)
- Grading a Body of Evidence to Answer a Clinical Question
- Judging the Strength of a Recommendation (abbreviated table below)

Table of Evidence Levels (see note above)

Quality level	***Definition***
1a† or 1b†	Systematic review, meta-analysis, or meta-synthesis of multiple studies
2a or 2b	Best study design for domain
3a or 3b	Fair study design for domain
4a or 4b	Weak study design for domain
5	Other: General review, expert opinion, case report, consensus report, or guideline

†a = good quality study; b = lesser quality study

Table of Recommendation Strength (see note above)

Strength	***Definition***
"Strongly recommended"	There is consensus that benefits clearly outweigh risks and burdens (or visa-versa for negative recommendations).
"Recommended"	There is consensus that benefits are closely balanced with risks and burdens.
No recommendation made	There is lack of consensus to direct development of a recommendation.

Dimensions: In determining the strength of a recommendation, the development group makes a considered judgment in a consensus process that incorporates critically appraised evidence, clinical experience, and other dimensions as listed below.

1. Grade of the Body of Evidence (see note above)
2. Safety / Harm
3. Health benefit to patient *(direct benefit)*
4. Burden to patient of adherence to recommendation *(cost, hassle, discomfort, pain, motivation, ability to adhere, time)*
5. Cost-effectiveness to healthcare system *(balance of cost / savings of resources, staff time, and supplies based on published studies or onsite analysis)*
6. Directness *(the extent to which the body of evidence directly answers the clinical question [population/problem, intervention, comparison, outcome])*
7. Impact on morbidity/mortality or quality of life

Supporting information

Background information

Major depressive disorder affects up to 8.5% of youth with the incidence in children having been estimated at 2.8% and in adolescents increasing up to 5.7% *(Costello 2006 [1a])*. Major Depressive Disorder is associated with significant morbidity and mortality. This may be demonstrated by impairment in school performance, poor interpersonal relationships, early pregnancy, increased physical illness, substance abuse, and increase in the risk of suicide *(Barton 2009 [5a])*. Accurate screening is therefore essential when the patient with suspected depression presents.

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Search strategy:

Database: Ovid MEDLINE(R) <1996 to May Week 2 2009>
1 exp Bipolar Disorder/ (11370)
2 limit 1 to english language (10493)
3 limit 2 to ("all infant (birth to 23 months)" or "all child (0 to 18 years)" or "newborn infant (birth to 1 month)" or "infant (1 to 23 months)" or "preschool child (2 to 5 years)" or "child (6 to 12 years)" or "adolescent (13 to 18 years)") (2323)
4 (guideline or meta analysis or practice guidelines or systematic review).pt. or "the cochrane library".jn. or "cochrane database of systematic reviews".jn. (31882)
5 3 and 4 (24)
6 exp Depressive Disorder, Major/ (9500)
7 limit 6 to english language (8985)
8 limit 7 to ("all infant (birth to 23 months)" or "all child (0 to 18 years)" or "newborn infant (birth to 1 month)" or "infant (1 to 23 months)" or "preschool child (2 to 5 years)" or "child (6 to 12 years)" or "adolescent (13 to 18 years)") (2100)
9 8 and 4 (28)
10 from 9 keep 1-28 (28)

Database: EBM Reviews - Cochrane Database of Systematic Reviews <1st Quarter 2009>
Search Strategy:
1 [exp Bipolar Disorder/] (0)
2 limit 1 to english language [Limit not valid; records were retained] (0)
3 limit 2 to ("all infant (birth to 23 months)" or "all child (0 to 18 years)" or "newborn infant (birth to 1 month)" or "infant (1 to 23 months)" or "preschool child (2 to 5 years)" or "child (6 to 12 years)" or "adolescent (13 to 18 years)") [Limit not valid; records were retained] (0)
4 (guideline or meta analysis or practice guidelines or systematic review).pt. or "the cochrane library".jn. or "cochrane database of systematic reviews".jn. (5726)
5 3 and 4 (0)
6 [from 5 keep 1-24] (0)
7 bipolar disorder.mp. [mp=title, short title, abstract, full text, keywords, caption text] (75)
8 7 not protocols.mp. [mp=title, short title, abstract, full text, keywords, caption text] (66)
9 from 8 keep 1-66 (66)
10 depression.mp. [mp=title, short title, abstract, full text, keywords, caption text] (1036)
11 10 not protocols.mp. [mp=title, short title, abstract, full text, keywords, caption text] (889)
12 major depression.mp. [mp=title, short title, abstract, full text, keywords, caption text] (107)
13 12 not protocols.mp. [mp=title, short title, abstract, full text, keywords, caption text] (92)
14 from 13 keep 1-92 (92)

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Additional articles identified from reference lists and clinicians

Applicability issue

Potential outcome to be measured:
Percentage of patients with depression whose initial visit/s includes an assessment using rating scales/surveys to differentiate diagnosis; co-morbid conditions; and risk of suicide.

Copies of this Best Evidence Statement (BESt) are available online and may be distributed by any organization for the global purpose of improving child health outcomes. Website address: http://www.cincinnatichildrens.org/svc/alpha/h/health-policy/ev-based/default.htm
Examples of approved uses of the BESt include the following:

- copies may be provided to anyone involved in the organization's process for developing and implementing evidence based care;
- hyperlinks to the CCHMC website may be placed on the organization's website;
- the BESt may be adopted or adapted for use within the organization, provided that CCHMC receives appropriate attribution on all written or electronic documents; and
- copies may be provided to patients and the clinicians who manage their care.

Notification of CCHMC at HPCEInfo@cchmc.org for any BESt adopted, adapted, implemented or hyperlinked by the organization is appreciated.

For more information about CCHMC Best Evidence Statements and the development process, contact the Health Policy & Clinical Effectiveness office at: 513-636-2501 or ***HPCEInfo@chmcc.org****.*

Note

This Best Evidence Statement addresses only key points of care for the target population; it is not intended to be a comprehensive practice guideline. These recommendations result from review of literature and practices current at the time of their formulation. This Best Evidence Statement does not preclude using care modalities proven efficacious in studies published subsequent to the current revision of this document. This document is not intended to impose standards of care preventing selective variances from the recommendations to meet the specific and unique requirements of individual patients. Adherence to this Statement is voluntary. The clinician in light of the individual circumstances presented by the patient must make the ultimate judgment regarding the priority of any specific procedure.

Reviewed by the Cincinnati Children's Hospital Medical Center Evidence Federation

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Survey	Informant	Visit/Week																							
		S	1	2	3	4	5	6	7	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
Achenbach CBCL	Parent	X																							
Parenting Stress Inventory	Parent		X																						
PedsQL	Parent		X																						
Achenbach YSR	Patient		O																						
Chief Complaint	Parent		X																						
History	Parent		X																						
Past Psyche History	Parent		X																						
Family Psyche History	Parent		X																						
Devlopmental History	Parent		X																						
Medical History	Parent		X																						
Social History	Parent		X																						
ChIPs Modules	Clinician			X																					
ADHD, ODD, GAD, SUD																									
Depression Scales																									
QIDS-17	Parent		X	X		X		X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
QIDS-17	Patient		X	X		X		X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
QIDS-17	Clinician		X	X		X		X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
MSE	Clinician		X																						
K-SADS Suicide Assesment	Clinician	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Outcome Measures																									
CGI-Severity	Clinician	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CGI-Improvement	Clinician		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-GAF		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Safety																									
Weight	PCA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Height	PCA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
BMI	PCA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Waist Circum	PCA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Supine Blood Pressure	PCA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pulse Rate	PCA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SEFCA	Clinician	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

S= Screening Visit 0 = optional

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