



## Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to subcriterion 1b).

### Brief Measure Information

**NQF #:** 0722

**Corresponding Measures:**

**De.2. Measure Title:** Pediatric Symptom Checklist (PSC)

**Co.1.1. Measure Steward:** Massachusetts General Hospital

**De.3. Brief Description of Measure:** The Pediatric Symptom Checklist (PSC) is a brief parent-report questionnaire that is used to assess overall psychosocial functioning in children from 3 to 18 years of age. Originally developed to be a screen that would allow pediatricians and other health professionals to identify children with poor overall functioning who were in need of further evaluation or referral, the PSC has seen such wide use in large systems that it has increasingly been used as a quality indicator and as an outcome measure to assess changes in functioning over time. In addition to the original 35 item parent report form of the PSC in English, there are now many other validated forms including translations of the original form into about two dozen other languages, a youth self-report, a pictorial version, and a briefer 17 item version for both the parent and youth forms.

**1b.1. Developer Rationale:** Since it is widely accepted that psychosocial problems in children are common (~12%) but often (> 50%) unrecognized and even more often untreated (< 33%), use of the PSC or other brief, global standardized measures to screen for problems and increase treatment of them could result in earlier and/or more frequent identification of such problems. In the long run, early identification of psychosocial problems could result in fewer mental, emotional and behavioral disorders, which, in turn, could lead to better life outcomes for individuals who are screened and served. Use of the PSC or a similar screen makes it possible to ascertain if children with problems have received mental health services and/or whether they have gotten better. Use of the PSC to measure outcomes can help to pinpoint which interventions work for which children under which circumstances.

**S.4. Numerator Statement:** The PSC is an outcome and a process measure. In the Numerator Statement and in the sections that follow we will delineate specifications for two different meanings of each of these uses of the PSC.

i. The PSC is an "OUTCOME MEASURE OF PSYCHOSOCIAL PROBLEM PREVALENCE"

Number of children aged 3-18 with an initial positive PSC screen for psychosocial problems (cutoff is >23 for ages 3-5 and >27 for ages 6-18).

ii. The PSC is an "OUTCOME MEASURE OF PROBLEM REMISSION/IMPROVEMENT"

Number of children aged 3-18 with an initial positive PSC screen for psychosocial problems who screen negative on the PSC at their next well child visit; or, more precisely, the number of children aged 3-18 with an initial positive PSC screen for psychosocial problems who show a clinically significant improvement (reliable change of six or more points and screen negative at their next well child visit).

iii. The PSC is a "PROCESS MEASURE OF WHETHER SCREENING HAS TAKEN PLACE"

Children aged 3-18 who had documentation of screening with the PSC or another approved, standardized instrument.

iv. The PSC is a "PROCESS MEASURE OF WHETHER FOLLOW-UP HAS OCCURRED FOR PATIENTS WITH A POSITIVE SCREEN"

Children aged 3-18 with a positive screening on the PSC or another standardized psychosocial measure who had a follow up visit with a behavioral health provider within 90 days.

**S.7. Denominator Statement:** i. Number of children aged 3-18 receiving a well child visit.

ii. Number of children aged 3-18 with an initial positive screening on PSC at their annual well child visit who were seen for a subsequent well child visit and rescreened with the PSC.

iii. Number of children aged 3-18 seen for a well child visit in the given measurement year.

iv. Number of children aged 3-18 who had screened positive for a psychosocial problem during a well child visit.

**S.10. Denominator Exclusions:** Children aged 3.0 to 17.99 who did not have a well-child visit during the measurement period.

**De.1. Measure Type:** Outcome

**S.23. Data Source:** Claims, Electronic Health Data, Electronic Health Records, Instrument-Based Data, Management Data, Other, Paper Medical Records

**S.26. Level of Analysis:** Clinician : Group/Practice, Clinician : Individual, Facility, Health Plan, Integrated Delivery System, Other, Population : Community, County or City, Population : Regional and State

**IF Endorsement Maintenance – Original Endorsement Date:** Jan 17, 2011 **Most Recent Endorsement Date:** Jan 17, 2011

**IF this measure is included in a composite, NQF Composite#/title:**

**IF this measure is paired/grouped, NQF#/title:**

**De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results?**

## 1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all subcriteria to pass this criterion and be evaluated against the remaining criteria.**

**1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form**  
[NQF722\\_Evidence\\_Aug\\_04\\_2014.docx](#)

### 1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- disparities in care across population groups.

**1b.1. Briefly explain the rationale for this measure** (e.g., the benefits or improvements in quality envisioned by use of this measure) Since it is widely accepted that psychosocial problems in children are common (~12%) but often (> 50%) unrecognized and even more often untreated (< 33%), use of the PSC or other brief, global standardized measures to screen for problems and increase treatment of them could result in earlier and/or more frequent identification of such problems. In the long run, early identification of psychosocial problems could result in fewer mental, emotional and behavioral disorders, which, in turn, could lead to better life outcomes for individuals who are screened and served. Use of the PSC or a similar screen makes it possible to ascertain if children with problems have received mental health services and/or whether they have gotten better. Use of the PSC to measure outcomes can help to pinpoint which interventions work for which children under which circumstances.

**1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis.** (This is required for endorsement maintenance. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included). This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use. Recent studies [1, 2, 3] have confirmed previous reports [4,5] that many children with behavioral health problems are not identified by their pediatricians and that only a fraction of these children receive behavioral health services. These new studies also demonstrate that routine psychosocial screening in pediatrics can be used as a measure of quality of care. Since 2008 the Commonwealth of Massachusetts has made an effort to achieve full compliance with longstanding federal EPSDT guidelines which state that all well child pediatric visits for the ~ 40 million US children who are covered by Medicaid [6] should include screening for behavioral health problems. The Massachusetts program, called the Children's Behavioral Health Initiative, requires that all pediatric providers screen all children for behavioral health problems annually, that they bill for these screens using a specific CPT code (96110) and that they indicate positive or negative screens with a specific (U2/U1) modifier code [7]. Over its first six years, the

program has continued to grow, with more screens and a higher percent of visits with screens each year. By the end of 2013, about 1.8 million screens [8] had been completed. Since more than one million of these screens were collected for children aged 3-17 [8] and since several studies suggest that the PSC is by far the most frequently used screen for children in this age range, accounting for 39%-83% of all screens statewide [3,9,10,16] it is possible to use statewide CBHI data as a rough proxy for PSC data. Data presented on the CBHI website show 11% of the 1,017,678 screens for 3-17 year old children were positive [8]. As reported in two recent studies [1,2] funded by NIMH, Hacker and colleagues took a more in depth look at the Massachusetts data, analyzing individual case claim data from Medicaid on a sample of 355,490 children and teens seen for pediatric well child care during the second year of the program (2009). The authors reported that 103,413 visits (29%) had codes for screens and modifiers that 12% screened positive and that 39% of those who screened positive were newly identified cases, without BH services in the past year [1]. In a second paper on essentially the same sample, Hacker and associates [2] reported that 59% of the positive screens (and 30% of the newly identified positive screens) received at least one BH visit in the three months following screening. The inverses of these figures are also important: fully 41% of all positive screens and 70% of all newly identified positive screens failed to receive mental health services in the months immediately after screening. The main findings from these studies based on billing data were replicated in a study that reviewed the medical records of 600 individual patients and as well as clinic wide billing data on 64,194 patients from two Massachusetts community health centers that participated in the CBHI program [3]. Since routine psychosocial screening is now reimbursed by most commercial insurers in Massachusetts and in many if not most other states, another recent paper by Hacker and her colleagues [11] tracking outcomes for a smaller sample of commercially insured youth was important in suggesting similar patterns for a non-Medicaid population. Reporting on a subsample of youth ages 14-17 at a community health center in Massachusetts who had been screened using the PSC, the authors found that one-hundred seventeen youth screened positive on the PSC. Of these youth, about 54% (n=63) received a mental health referral at the screening visit. Further, among youth with positive screens, almost half (46%) received some form of mental health care (including telephone calls, intake visits, or a scheduled mental health appointment) within 180 days of screening visit [8]. The prevalence of positive screens and treatment rates in these recent Massachusetts samples are very similar to the rates reported for the PSC in national samples in the US (12%) [12] and Chile (11%) [13]. As will be presented in greater detail below, the Massachusetts Medicaid program tracks the percentage of well child visits that receive the required BH screen (a figure that had risen to 70% by the end of 2013) [14] and the percent of positive screens that receive follow up mental health visits (53%) in its 'report cards' for health centers which also include rates of colorectal, breast cancer, and other medical and behavioral screens. These rates are also published as quality indicators for the five managed care organizations that provide services to Medicaid patients in Massachusetts [15].

1. Hacker K, Goldstein J, Link D, Sengupta N, Bowers R, Tendulkar S, Wissow L. Pediatric provider processes for behavioral health screening, decision making, and referral in sites with colocated mental health services. *Journal of Developmental and Behavioral Pediatrics*. 2013; 34(9):680-687.
2. Hacker KA, Penfold R, Arsenault L, Zhang F, Murphy JM, Wissow L. Behavioral health services following screening in children enrolled in Massachusetts Medicaid. *Pediatrics*. 2014. Accepted for publication.
3. Romano-Clarke G, Tang MH, Xerras DC, Egan HS, Pasinski RC, Kamin HS, McCarthy AE, Newman J, Jellinek MS, Murphy JM. Have rates of behavioral health assessment and treatment increased for Massachusetts children since the Rosie D. decision? A report from two primary care practices. *Clinical Pediatrics*. 2014; 53(3):243-249.
4. Costello EJ, Edelbrock C, Costello AJ, Dulcan M, Burns BJ, Brent D. Psychopathology in pediatric primary care: the new hidden morbidity. *Pediatrics*. 1988;82(3):415-424.
5. Kelleher K, Childs GE, Wasserman RC, McInerney TK, Nutting PA, Gardner WP. Insurance status and recognition of psychosocial problems. *Arch Pediatr Adolesc Med*. 1997; 151(11):1109-1115.
6. Kuhlthau KA, Jellinek MS, White G, Vancleave J, Simons J, Murphy JM. Increases in behavioral health screening in pediatric care for Massachusetts Medicaid patients. *Arch Pediatr Adolesc Med*. 2011;165:660-664.
7. Coakley M, Hammond D. Defendant's Report on Implementation. Rosie D., et al., Plaintiffs, v. Deval L. Patrick, et al., Defendants 2012; 91. <http://www.mass.gov/eohhs/docs/masshealth/research/cbhi-status-report-05-16-2012.pdf>. Accessed July 25, 2014.
8. MassHealth. Quarterly Behavioral Health Screening Report: Behavioral health screening January 2008-December 2013. Hingham, MA: Executive Office of Health and Human Services;2014. <http://www.mass.gov/eohhs/gov/commissions-and-initiatives/cbhi/cbhi-publications-and-reports.html>. See also page 56 in the appendix to this document.
9. Semansky RM, Koyanagi C, Vandivort-Warren R. Behavioral health screening policies in Medicaid programs nationwide. *Psychiatr Serv*. 2003;54(5):736-739.
10. Davis DW, Honaker SM, Jones VF, Williams PG, Stocker F, Martin E. Identification and management of behavioral/mental health problems in primary care pediatrics; perceived strengths, challenges, and new delivery models; *Clin Pediatrics* published online 18 April 2012; DOI: 10.1177/0009922812441667

11. Hacker K, Arsenault L, Franco I, Shaligram D, Sidor M, Olfson M, Goldstein J. Referral and follow-up after mental health screening in commercially insured adolescents. *J. Adolesc Health*. 2014;55(1):17-23.
12. Kelleher K, Childs GE, Wasserman RC, McInerney TK, Nutting PA, Gardner WP. Insurance status and recognition of psychosocial problems. *Arch Pediatr Adolesc Med*. 1997; 151(11):1109-1115.
13. Guzman MP, Jellinek M, George M, Hartley M, Squicciarini AM, Canenguez K, Kuhlthau K, Yucel R, White G, Guzman, Murphy JM. Mental health matters in elementary school; First grade screening predicts fourth grade achievement test scores. *European Child and Adolescent Psychiatry*. 2011; 20(8):401-411.
14. MassHealth. Quarterly Behavioral Health Screening Report: Behavioral health screening January 2008-December 2013. Hingham, MA: Executive Office of Health and Human Services;2014. <http://www.mass.gov/eohhs/gov/commissions-and-initiatives/cbhi/cbhi-publications-and-reports.html>. See also page 56 in the appendix to this document.
14. PCC & Service Location Comparison User's Guide, MA Executive Office of Health and Human Services;2012. See page75 in the appendix to this document.
15. Primary Care Clinician, Plan Provider Handbook. <http://www.mass.gov/eohhs/docs/masshealth/provider-services/forms/pcc-handbook.pdf>. Accessed July 25, 2014.
16. Savageau JA, Keller D, Willis G, Muhr K, Li Y and Simons J. Universal Behavioral Health Screening in Massachusetts Children on Medicaid. AcademyHealth Annual Research Meeting: Behavioral Health Special Interest Group, San Diego, CA, June 7, 2014.

**1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.**

**1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability.** *(This is required for endorsement maintenance. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.*

Disparities in the prevalence of psychosocial problems have long been noted in the research literature and in studies of the PSC [1]. The rates of psychosocial impairment are higher in children from risk groups such as low-income and/or single-parent households, males, and children from older age groups [2]. The PSC has also been used to assess disparities in psychosocial problem recognition and treatment in a nationally representative sample of 21,065 children from more than 400 pediatric and family practice sites [3]. Although this study did not find disparities in psychosocial problem recognition and referral by racial/ethnic groups it did report disparities according to patient gender, whether the pediatrician was the patient's PCP, and the time spent in the visit.

1. Murphy JM, Jellinek MS. Screening for psychosocial dysfunction in economically disadvantaged and minority group children: Further validation of the Pediatric Symptom Checklist. *Am J Orthopsychiatry*. 1988;58(3):450-456.
2. Jellinek MS, Murphy JM, Little M, Pagano ME, Comer DM, Kelleher KJ. Use of the Pediatric Symptom Checklist to screen for psychosocial problems in pediatric primary care: A national feasibility study. *Arch Pediatr Adolesc Med*. 1999;153(3):254-260.
3. Kelleher KJ, Moore CD, Childs GE, Angelilli ML, Comer DM. Patient race and ethnicity in primary care management of child behavior problems: A report from PROS and ASPN. *Med Care*. 1999;37(11):1092-1104.

**1b.5. If no or limited data on disparities from the measure as specified is reported in 1b4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations.**

**1c. High Priority** (previously referred to as High Impact)

The measure addresses:

- a specific national health goal/priority identified by DHHS or the National Priorities Partnership convened by NQF; OR
- a demonstrated high-priority (high-impact) aspect of healthcare (e.g., affects large numbers of patients and/or has a substantial impact for a smaller population; leading cause of morbidity/mortality; high resource use (current and/or future); severity of illness; and severity of patient/societal consequences of poor quality).

**1c.1. Demonstrated high priority aspect of healthcare**

Affects large numbers, A leading cause of morbidity/mortality, Patient/societal consequences of poor quality, Frequently performed procedure, High resource use

**1c.2. If Other:**

**1c.3. Provide epidemiologic or resource use data that demonstrates the measure addresses a high priority aspect of healthcare. List citations in 1c.4.**

Psychosocial problems are among the most common and debilitating concerns in children and adults [1, 2, 3]. Depending on the criteria used, estimates of prevalence range between 5% and 20%, with 12% an often-cited single figure. The World Health Organization reports that depression--just one of many types of psychosocial problems--is a leading cause of disability worldwide [4].

**1c.4. Citations for data demonstrating high priority provided in 1a.3**

1. O'Connell ME, Boat T, Warner KE. Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities. Washington, D.C.: Committee on the Prevention of Mental Disorders and Substance Abuse Among Children Youth and Young Adults; 2009.
2. Costello EJ, Costello AJ, Edelbrock C, et al. Psychiatric disorders in pediatric primary care: Prevalence and risk factors. Arch Gen Psychiatry. 1988;45:1107-1116.
3. Kelleher KJ, McInerney TK, Gardner WP, Childs GE, Wasserman RC. Increasing identification of psychosocial problems: 1979-1996. Pediatrics. 2000;105(6):1313-1321.
4. Murray C, Lopez A. The Global Burden of Disease. Cambridge, MA: Harvard University Press; 1996.

**1c.5. If a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)**

Research has suggested that routine behavioral health screening in primary care is acceptable to staff and parents and leads to increased parent disclosure of mental health concerns [1, 2]. In a qualitative study at four community health centers, Hacker and colleagues found that pediatricians valued behavioral health screens (the PSC, Parents' Evaluation of Developmental Status, Patient Health Questionnaire, and Modified Checklist for Autism in Toddlers) for prompting discussions about patient mental health [2]. There is also evidence that the routine use of the PSC in pediatric practices leads to better parent-provider communication [3].

1. Romano-Clarke G, Xerras DC, Egan H, et al. Has pediatric mental health care changed for Massachusetts children since the Rosie D decision? A report on psychosocial screening at two pediatric practices. Clin Pediatr (Phila). 2014;53(3):243-249.
2. Kolko DJ, Campo JV, Kilbourne AM, Kelleher K. Doctor-office collaborative care for pediatric behavioral problems: a preliminary clinical trial. Arch Pediatr Adolesc Med. 2012; 166(3): 224-231.
3. Hacker K, Goldstein J, Link D, Sengupta N, Tendulkar S, Wissow L. Pediatric provider processes for behavioral health screening, decision making, and referral in sites with collocated mental health services. J Dev Behav Pediatr. 2013;34(9):680-687.
4. Hayutin LG, Reed-Knight B, Blount RL, Lewis J, McCormick ML. Increasing parent-pediatrician communication about children's psychosocial problems. J Pediatr Psychol. Nov-Dec 2009;34(10):1155-1164.

## 2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the subcriteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

**2a.1. Specifications** The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

**De.5. Subject/Topic Area** (check all the areas that apply):

Behavioral Health

**De.6. Non-Condition Specific** (check all the areas that apply):

Health and Functional Status : Total Health, Person-and Family-Centered Care, Primary Prevention, Screening

**S.1. Measure-specific Web Page** (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

[http://www.massgeneral.org/psychiatry/services/psc\\_home.aspx](http://www.massgeneral.org/psychiatry/services/psc_home.aspx)

**S.2a. If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

**This is not an eMeasure Attachment:**

**S.2b. Data Dictionary, Code Table, or Value Sets** (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

**No data dictionary Attachment:**

**S.3. For endorsement maintenance**, please briefly describe any changes to the measure specifications since last endorsement date and explain the reasons.

The specification for the PSC has not changed. However, SAMSHA has recently written a contract to electronically specify the PSC for possible inclusion in Meaningful Use Stage 3. The PSC has also been programmed into the Foundational Library of Epic (in both the main medical notes section and in the patient portal called MyChart), Cerner, CHADIS, Partners Healthcare LMR, and other electronic medical record systems. The PSC and a score report are available for free online through CNS Vital signs:

<https://sync.cnsvs.com/pscscreen.html>. A link to this site is also provided on the PSC

website([http://www.massgeneral.org/psychiatry/services/psc\\_home.aspx](http://www.massgeneral.org/psychiatry/services/psc_home.aspx))

**S.4. Numerator Statement** (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome)

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.

The PSC is an outcome and a process measure. In the Numerator Statement and in the sections that follow we will delineate specifications for two different meanings of each of these uses of the PSC.

i. The PSC is an "OUTCOME MEASURE OF PSYCHOSOCIAL PROBLEM PREVALENCE"

Number of children aged 3-18 with an initial positive PSC screen for psychosocial problems (cutoff is >23 for ages 3-5 and >27 for ages 6-18).

ii. The PSC is an "OUTCOME MEASURE OF PROBLEM REMISSION/IMPROVEMENT"

Number of children aged 3-18 with an initial positive PSC screen for psychosocial problems who screen negative on the PSC at their next well child visit; or, more precisely, the number of children aged 3-18 with an initial positive PSC screen for psychosocial problems who show a clinically significant improvement (reliable change of six or more points and screen negative at their next well child visit).

iii. The PSC is a "PROCESS MEASURE OF WHETHER SCREENING HAS TAKEN PLACE"

Children aged 3-18 who had documentation of screening with the PSC or another approved, standardized instrument.

iv. The PSC is a "PROCESS MEASURE OF WHETHER FOLLOW-UP HAS OCCURRED FOR PATIENTS WITH A POSITIVE SCREEN"

Children aged 3-18 with a positive screening on the PSC or another standardized psychosocial measure who had a follow up visit with a behavioral health provider within 90 days.

**S.5. Time Period for Data** (What is the time period in which data will be aggregated for the measure, e.g., 12 mo, 3 years, look back to August for flu vaccination? Note if there are different time periods for the numerator and denominator.)

PSC scores are collected for each patient at the annual pediatric well child visit. Repeat administrations of the PSC can also occur at shorter or longer intervals. In the outpatient child psychiatry services at Massachusetts General Hospital the PSC is administered at intake and then every 3 months. In a national school based mental health program in Chile, the PSC is administered to students at intervals of 2 and 5 years (in preschool, 1st, 3rd, and 8th grades).

**S.6. Numerator Details** (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.



- i. PSC score above predefined cutoff score; Modifier U2 given in conjunction with CPT code 96110;
- ii. PSC score below predefined cutoff score (or below cutoff score and -6+ points); Modifier U1 given in conjunction with CPT code 96110;
- iii. PSC score mentioned in note for well child visit; CPT code 96110 given on same day as well child visit (CPT 99381, 99382, 99383, 99384, 99385, 99391, 99392, 99393, 99394, 99395);
- iv. At least one CPT code for a mental health visit (90801-90829, 90846-90849, 90853, 90857, 90862, 90870, 99058, 99212, 99241-99245) given within 3 months of an indication in the medical record of a positive screening or of CPT code 96110/U2.

**S.7. Denominator Statement** (Brief, narrative description of the target population being measured)

- i. Number of children aged 3-18 receiving a well child visit.
- ii. Number of children aged 3-18 with an initial positive screening on PSC at their annual well child visit who were seen for a subsequent well child visit and rescreened with the PSC.
- iii. Number of children aged 3-18 seen for a well child visit in the given measurement year.
- iv. Number of children aged 3-18 who had screened positive for a psychosocial problem during a well child visit.

**S.8. Target Population Category** (Check all the populations for which the measure is specified and tested if any):

Children

**S.9. Denominator Details** (All information required to identify and calculate the target population/denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

- i. All children seen for well child visits (CPT codes for age groups infants through young adults, for new and established patients: 99381, 99382, 99383, 99384, 99385, 99391, 99392, 99393, 99394, 99395);
- ii. All children who had an indication in their medical records of a positive screen on the PSC in previous well child visit who were seen for a subsequent well child visit; all children who had CPT code 96110/U2 in conjunction with previous well child visit who were seen for a subsequent well child visit;
- iii. All children seen for well child visits (CPT codes: 99381, 99382, 99383, 99384, 99385, 99391, 99392, 99393, 99394, 99395);
- iv. All children who had had an indication of a positive screening score on the PSC(or 96110/U2)in the previous well child visit with at least one CPT code for a mental health visit: 90801-90829, 90846-90849, 90853, 90857, 90862, 90870, 99058, 99212, 99241-99245 within 90 days of the well child visit.

**S.10. Denominator Exclusions** (Brief narrative description of exclusions from the target population)

Children aged 3.0 to 17.99 who did not have a well-child visit during the measurement period.

**S.11. Denominator Exclusion Details** (All information required to identify and calculate exclusions from the denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

N/A

**S.12. Stratification Details/Variables** (All information required to stratify the measure results including the stratification variables, definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b)

This measure is not currently stratified. We plan to take up the issue of stratification as a part of a planned renorming project.

**S.13. Risk Adjustment Type** (Select type. Provide specifications for risk stratification in S.12 and for statistical model in S.14-15)

Other

If other: [Risk-adjustment devised specifically for this measure/condition.](#)

**S.14. Identify the statistical risk model method and variables** (*Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development and testing should be addressed with measure testing under Scientific Acceptability*)

[We will collect the following variables for study for potential use in future risk adjustment for the PSC as both a screening tool and a delta measure of outcome: gender, socioeconomic status, race, ethnicity, primary language, psychiatric comorbidity, medical comorbidity and presence of externalizing behaviors.](#)

**S.15. Detailed risk model specifications** (*must be in attached data dictionary/code list Excel or csv file. Also indicate if available at measure-specific URL identified in S.1.*)

*Note: Risk model details (including coefficients, equations, codes with descriptors, definitions), should be provided on a separate worksheet in the suggested format in the Excel or csv file with data dictionary/code lists at S.2b.*

**S.15a. Detailed risk model specifications** (*if not provided in excel or csv file at S.2b*)

**S.16. Type of score:**

[Categorical](#)

If other:

**S.17. Interpretation of Score** (*Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score*)

[Better quality = Score within a defined interval](#)

**S.18. Calculation Algorithm/Measure Logic** (*Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.*)

[Total continuous score is sum of all 35 weighted items; \(often=2; sometimes=1; 0=never\); 4 or more items missing = invalid test.](#)

[Continuous score from 0-70 that can be recoded into a dichotomous \(case/not case\) variable based on established cutoffs. Change scores can be based on either continuous \(post-pre test global or subscale total\) change scores or categorical change scores \(percent of pre-test cases no longer cases at post-test\) or clinically significant improvement \(case > non case + post-pretest total score => 6\). Process measures of outcome assess rate/proportion of cases screened or of positive screens followed up on \[1\]](#)

[Higher PSC total score indicates more psychosocial problems. In the US, cutoff scores for positive screen are 28 or higher = psychosocial problem for 6-18 year olds on PSC 35 parent form; 24 or higher = problem for 3-5 year olds on PSC 35 parent report, 15 or higher on PSC 17 parent report; 30 or higher on PSC-Y form for youth aged 12 and older. Changes from case to non case on the PSC indicate psychosocial problem remission. For process measures of screening and follow up rates, higher rates indicate higher quality care. In Medicaid of Massachusetts, 90th percentile benchmarks are 97% for rate of screening and 79% for rate of follow up \[2\].](#)

1. [Murphy JM, Blais M, Baer L, McCarthy A, Kamin H, Masek B, Jellinek M. Measuring outcomes in outpatient child psychiatry: Reliable improvement, deterioration, and clinically significant improvement. Clinical Child Psychology and Psychiatry, 2013; 0 \(0\):1-14.](#)

2. [MassHealth. PCC and service location comparison: MGH-Chelsea HealthCare Center Report Card, April 2012. Appendix p. 55.](#)

**S.19. Calculation Algorithm/Measure Logic Diagram URL or Attachment** (*You also may provide a diagram of the Calculation Algorithm/Measure Logic described above at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1*)

[Available at measure-specific web page URL identified in S.1](#)

**S.20. Sampling** (*If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.*)

[IF a PRO-PM, identify whether \(and how\) proxy responses are allowed.](#)



The measure and its denominator are not based on samples.

The PSC is usually filled out by a parent or guardian about her/his child. Teens can also fill out the form about themselves (PSC-Y).

**S.21. Survey/Patient-reported data** (If measure is based on a survey, provide instructions for conducting the survey and guidance on minimum response rate.)

IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.

Parents are asked to complete the PSC about their child in conjunction with a well child visit. Office staff or the clinician scores the measure by summing all items and ascertaining if the total score falls about the cutoff (28+ for children 6-17). Usually both the total score and whether it is above the cutoff are reported in the visit note or template.

**S.22. Missing data** (specify how missing data are handled, e.g., imputation, delete case.)

Required for Composites and PRO-PMs.

If more than 3 items on the PSC are left blank, the score is not valid and the result is coded as missing data.

**S.23. Data Source** (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.24.

Claims, Electronic Health Data, Electronic Health Records, Instrument-Based Data, Management Data, Other, Paper Medical Records

**S.24. Data Source or Collection Instrument** (Identify the specific data source/data collection instrument e.g. name of database, clinical registry, collection instrument, etc.)

IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.

The PSC can be collected via paper forms, software (CHADIS), internet (CNS Vital Signs, MGH Patient Gateway); digital pens/software (FusionForm), Electronic Health Record (Epic, Cerner, MGH LMR) as either free form text note, score in a field in a well child visit template or flowsheet for lab data or vitals, or a scanned PDF; telephone voice administration (Minnesota Somali form), billing records (CPT code 96110) with modifiers to indicate positive vs negative screen (U2 vs U1) in the Commonwealth of Massachusetts and BCBS of MA. Each of these sources keeps its own database.

**S.25. Data Source or Collection Instrument** (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

Available at measure-specific web page URL identified in S.1

**S.26. Level of Analysis** (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)

Clinician : Group/Practice, Clinician : Individual, Facility, Health Plan, Integrated Delivery System, Other, Population : Community, County or City, Population : Regional and State

**S.27. Care Setting** (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)

Emergency Department and Services, Home Care, Inpatient/Hospital, Outpatient Services

If other:

**S.28. COMPOSITE Performance Measure** - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

**2a. Reliability** – See attached Measure Testing Submission Form

**2b. Validity** – See attached Measure Testing Submission Form

NQF722\_Measure\_Testing\_Aug\_04\_2014.docx

### 3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

#### 3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure,

lab test, diagnosis, medication order).

**3a.1. Data Elements Generated as Byproduct of Care Processes.**

Generated or collected by and used by healthcare personnel during the provision of care (e.g., blood pressure, lab value, diagnosis, depression score)

If other:

**3b. Electronic Sources**

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

**3b.1. To what extent are the specified data elements available electronically in defined fields?** (*i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields*)

ALL data elements are in defined fields in a combination of electronic sources

**3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.**

**3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL.**

Attachment:

**3c. Data Collection Strategy**

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

**3c.1. Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**

**IF a PRO-PM, consider implications for both individuals providing PROM data (patients, service recipients, respondents) and those whose performance is being measured.**

For close to a decade the PSC has been recognized as the most frequently used brief psychosocial screen in general outpatient pediatrics for children 3-17 in the US [1]. Over the past decade its use as an indicator of the presence of psychosocial problems has spread for both clinical and research use in specialty pediatric areas like diabetes or HIV clinics and in subpopulations like differing minority and risk groups in the US and around the world. We have seen how readily the PSC has been adopted as a required measure in a number of state and national programs and how it can be administered, scored, and stored electronically across a wide range of electronic platforms through software delivered over the internet, digital pens, templated notes in EHRs, etc. We have also begun to demonstrate the levels of agreement between PSC scores and billing codes and modifiers in administrative data that make it possible to track psychosocial screening, risk, follow up, and problem remission in practice, plan, state, and national data. The fact that the PSC is one of just ten approved measures chose for the Massachusetts Medicaid Children's Behavioral Health Initiative [2], one of two required measures in a national school based mental health program in Chile [3], and one of a handful of required measures in the SAMSHA System of Care Expansion Implementation Cooperative Agreements evaluation [4] attest to its perceived feasibility and acceptability as does the fact that probably more than one half million PSC's have been administered in the Massachusetts CBHI program [5, 6] and another half million in the Chilean Skills for Life school based mental health program over the past six to ten years [3].

1. Semansky RM, Koyanagi C, Vandivort-Warren R. Behavioral health screening policies in Medicaid programs nationwide. Psychiatr Serv. 2003;54(5):736-739.

2. Kuhlthau KA, Jellinek MS, White G, Vancleave J, Simons J, Murphy JM. Increases in behavioral health screening in pediatric care for Massachusetts Medicaid patients. Arch Pediatr Adolesc Med. 2011;165:660-664.

3. Guzman MP, Jellinek M, George M, Hartley M, Squicciarini AM, Canenguez K, Kuhlthau K, Yucel R, White G, Guzman, Murphy JM. Mental health matters in elementary school; First grade screening predicts fourth grade achievement test scores.

European Child and Adolescent Psychiatry. 2011; 20(8):401-411.

4. See Appendix I, page 76. Westat Children's Mental Health Initiative, Project Summary. [www.westat.com](http://www.westat.com). Accessed July 25, 2014.

5. Children's Behavioral Health Initiative, "BH Screening January 2008 - December 2013".

<http://www.mass.gov/eohhs/docs/masshealth/cbhi/bh-screening.pdf> Accessed July 25, 2014.

6. Savageau JA, Keller D, Willis G, Muhr K, Li Y and Simons J. Universal Behavioral Health Screening in Massachusetts Children on Medicaid. AcademyHealth Annual Research Meeting: Behavioral Health Special Interest Group, San Diego, CA, June 7, 2014.

**3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm).**

None

#### 4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

##### 4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

##### 4.1. Current and Planned Use

*NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.*

Planned	Current Use (for current use provide URL)
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	<p>Public Reporting  Massachusetts Medicaid (MassHealth) / Managed Care Organization Plan  <a href="http://www.mass.gov/anf/docs/anf/medicaid-del-model-commission/med-del-mod-comm-pcc-mco-overview-presentation-7-17.pdf">http://www.mass.gov/anf/docs/anf/medicaid-del-model-commission/med-del-mod-comm-pcc-mco-overview-presentation-7-17.pdf</a></p> <p>Public Health/Disease Surveillance  Massachusetts Medicaid (MassHealth) Children's Behavioral Health Initiative  <a href="http://www.mass.gov/eohhs/docs/masshealth/cbhi/bh-screening.pdf">http://www.mass.gov/eohhs/docs/masshealth/cbhi/bh-screening.pdf</a>  SAMHSA System of Care Expansion Implementation Evaluation/Westat  <a href="https://depts.washington.edu/pbhjp/projects-programs/page/evaluation-comprehensive-community-supports-children-and-their-families">https://depts.washington.edu/pbhjp/projects-programs/page/evaluation-comprehensive-community-supports-children-and-their-families</a></p> <p>Payment Program  Massachusetts Medicaid (MassHealth) CBHI  <a href="http://www.mass.gov/eohhs/docs/masshealth/bull-2011/all-211.pdf">http://www.mass.gov/eohhs/docs/masshealth/bull-2011/all-211.pdf</a>  Commercial healthcare insurers of CT, MA and many other states reimburse for screening; see document 3: IMPACT; Integrating Behavioral Health and Primary Care  <a href="http://www.chdi.org/ourwork-signature-behavioral.php">http://www.chdi.org/ourwork-signature-behavioral.php</a></p> <p>Professional Certification or Recognition Program  Pediatric Specialty Care Group of the Maine Medical Center/American Board of Pediatrics Recertification  <a href="http://www.mmc.org/mmp_spcare_home.cfm?id=5361">http://www.mmc.org/mmp_spcare_home.cfm?id=5361</a></p> <p>Quality Improvement (Internal to the specific organization)  Massachusetts General Hospital Physicians Organization  <a href="http://mgpo.partners.org/QualitySafety/QualityIncentiveProgram.html">http://mgpo.partners.org/QualitySafety/QualityIncentiveProgram.html</a></p>
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**4a.1. For each CURRENT use, checked above, provide:**

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included

**a. Public Reporting:**

**a1. Name of Program:** Massachusetts Medicaid (MassHealth) / Managed Care Organization Plan

**Purpose:** Massachusetts Medicaid (MassHealth) publishes quality data on the 5 managed care organizations (MCO's) which cover about half of the children on Medicaid in the state. Quality data include % of well child visits that receive a standardized psychosocial screen and % of positive screens that receive a BH visit within six months of positive screening among the quality of care benchmarks which permit comparisons of MCO's. Rates of routine psychosocial screening and follow up services and other quality benchmarks are reported by each Managed Care Organization so that they can be compared for quality in these areas.

**Geographic area:** The 5 MCCO's cover about 500,000 members from the entire state of Massachusetts, about half of the Medicaid enrollees in the state. Boston Medical Center (BMC; 190,000 members) Fallon Community Health Plan (FCHP; 13,000); Health New England (HNE; 7,000); Neighborhood Health Plan (NHP; 156,000); Network Health (124,000).

**b. Public Health/Disease Surveillance:**

**b1. Name of Program:** Massachusetts Medicaid (MassHealth) Children's Behavioral Health Initiative

**Purpose:** MassHealth also makes known the results of its psychosocial screening program for the other half of its members who are enrolled in the MassHealth Primary Care Clinician Plan. This screening program is called the Children's Behavioral Health Initiative and summary data can be found on the CBHI website. Data show the percentage of well child visits that receive BH screening and the prevalence of positive screens for each quarter since the start of the program in 2008. Data are also broken down by geographical area of the state and by age group. Rates of routine psychosocial screening are reported to document progress toward the goal of having 100% of all pediatric well child visits receiving a screen to demonstrate compliance with federal EPSDT regulations requiring screening and the mandate to measure and report compliance that were a part of the judgment in the Rosie D vs Romney

lawsuit. Results are presented overall and also by year/quarter, by age group, and by region.

Geographic area: The PCC Program covers ~350,000 children, just under half of all child Medicaid enrollees in the state of Massachusetts.

b2. Name of Program: SAMHSA System of Care Expansion Implementation Evaluation/Westat

Purpose: The PSC-17 has been proposed (pending OMB clearance) as one of the primary measures in the national cross-site evaluation of the SAMHSA-funded System of Care expansion grants. The national evaluation is being conducted by Westat and academic partners (University of Washington, Indiana University) and will administer the PSC as one of the core outcome measures at baseline and then 6 and 12 month follow ups to ascertain prevalence of psychosocial problems and the rates of improvement comparatively across sites in an in-depth sample of ~ 4000 individual cases representative of one dozen county children's mental health systems of care.

Geographic area: The twelve sites are from counties or metropolitan areas in 11 states and one territory of the US.

c. Payment Program

c1. Name of Program: Massachusetts Medicaid (MassHealth) CBHI.

Purpose: Massachusetts Medicaid requires that all pediatric well child visits include a standardized screen for psychosocial problems and that CPT code 96110 with a modifier indicating positive or negative screening be billed. Each screen is reimbursed at a rate of ~ \$10 per screen. A copy of one of the report cards for an individual health center can be found in the Appendix (page 55). Pediatric providers from throughout the state participate and about 1.8 million screens have been billed in the first six years of the program.

c2. Commercial healthcare insurers of CT and many other states.

Purpose: Most commercial health insurance companies in the states of Connecticut, Massachusetts and many other states now reimburse pediatricians for administering standardized behavioral and developmental measures as part of routine well child care. For each screen billed with CPT code 96110, the provider is reimbursed at a rate of up to \$20. For more than a decade the Child Health and Development Institute of Connecticut has used Federal, state, and foundation funding to promote psychosocial screening and other aspects of psychosocial care in public and private pediatric practices. Recent efforts have used 'academic detailing' and other innovative approaches to provide the PSC and other reimbursable behavioral and developmental screens to practices and to teach the billing procedures that can obtain reimbursement for these screens As shown in the figures presented in the Appendix (p. 70) in Massachusetts for just the first few years after the reimbursement for routine screening was sanctioned, hundreds of thousands of screens were reimbursed by just a single commercial insurer in a single state (Blue Cross and Blue Shield of Massachusetts). It seems probable that over the past five years, millions of psychosocial screens have been reimbursed through commercial insurers in these and other states

Geographic Area: Connecticut, Massachusetts and many other states.

e. Professional Certification or Recognition Program:

e1. Name of Program: Pediatric Specialty Care Group of the Maine Medical Center/American Board of Pediatrics Recertification

Purpose: The Pediatric Specialty Care Group of Maine Medical Center chose implementing routine psychosocial screening using the Pediatric Symptom Checklist as the quality improvement component of its American Board of Pediatrics, Maintenance of Certification program, with all ~ 20 pediatricians/eight specialty groups engaging in a 3 month QI program. Approximately 1000 children were screened.

Every five years ABP certified pediatricians are required to participate in a Maintenance of Certification activity which includes a Performance in Practice, Quality Improvement Project. Groups of pediatricians, in this case the Pediatric Specialty Group of MMC, can decide on an area of importance to them (in this case, exploring the feasibility and value of routine psychosocial screening with the PSC), participate in an effort to improve quality, and then evaluate and write up their results..

Geographic area: The Pediatric Specialty Care Group is based primarily in Portland, ME but has affiliations with group practices in six other communities from around the state.

f. Quality Improvement with Benchmarking (external benchmarking to multiple organizations):

f1. Massachusetts Medicaid requires that all pediatric well child visits include a standardized screen for psychosocial problems and that all children with positive BH screens receive a follow up visits with a mental health provider within six months. In the Primary Care Clinician (PCC) Reports issued to the health centers twice each year, MassHealth reports each health center's rates of screening and follow up along with benchmarks for the 50th and 90th percentiles for other health centers in the state. The provider handbook that mentions these reports (on page 23) can be found at: <http://www.mass.gov/eohhs/docs/masshealth/provider-services/forms/pcc-handbook.pdf>. A copy of one of the report cards for an individual health center can be found in the Appendix (p. 55).

g. Quality Improvement (Internal to the specific organization):

g1. Name of Program: Massachusetts General Hospital Physicians Organization

Purpose: The Massachusetts General Hospital Physician's Organization provides financial incentives for staff who achieve selected clinical benchmarks each quarter. In the most recently completed quarter the QA goal for psychologists was to have at least 35% of all new case evaluations include the PSC (already required) and to report on its score in their treatment plans (new requirement). This goal was met.

Geographic area: MGH is located in downtown Boston but draws many of its cases from the metropolitan area that surrounds the city and from the rest of New England. The child psychiatry service at MGH is one of the largest in New England and is a division of the MGH psychiatry department which is consistently ranked as one of the top psychiatry programs in the country.

**4a.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons?** (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

**4a.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement.** (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

#### 4b. Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

**4b.1. Progress on Improvement. (Not required for initial endorsement unless available.)**

Performance results on this measure (current and over time) should be provided in 1b.2 and 1b.4. Discuss:

- Progress (trends in performance results, number and percentage of people receiving high-quality healthcare)
- Geographic area and number and percentage of accountable entities and patients included

Progress on improvement for increasing compliance with the statewide requirement for routine psychosocial screening has been clearly demonstrated statewide as well as in all geographical areas and all age groups in the state.. It is also important to note that rates of screening and rates of improvement in screening vary geographically and by age group [1], suggesting the possibilities of both further improvement and of the existence of disparities in quality in pediatric psychosocial care in the state of Massachusetts. There is also clear evidence that many of the positively screened children had not been receiving behavioral health services [2] and that many of the newly identified cases went on to receive behavioral health services [3]. There are also studies that show that the increase in screening has been followed by increased rates of initial visits for mental health on a clinic- [4] and on a state-wide level [5]. Finally, the large longitudinal studies of screening and outcomes in elementary school students in Chile have demonstrated statistically significant relationships between positive screening on the PSC and poorer standardized academic test scores [6] and grade point averages and attendance rates [7] and between improvements in PSC scores (from risk to not risk) and improvements in grade point averages, attendance, and teacher rated behavior over a 1.5 year interval [7]. Reviewing some of these findings in greater depth, according to statewide data, rates of behavioral health screening have continually increased in Massachusetts Medicaid following implementation of the Children's Behavioral Health Initiative in 2008. As shown in the figure on the first page of the CBHI summary report) [1] in the 2008, the first year of the program, just 31% of pediatric patients with MassHealth insurance



received behavioral health screens during their well child visits. Rates have steadily increased over ensuing years and, in 2013, the last year for which data are available, 70% of well child visits received a screen.

Between 2008 and 2013, just over one million MassHealth patients within the PSC's validated age range (3-17 years) received screens during their well child visits [1]. The PSC is one of only three approved measures for this age range approved by MassHealth [8] and, in a study of two urban community health centers over fiscal years (FYs) 2007-2009, Romano-Clarke and colleagues found that 84% of screens for patients ages 3-17 were conducted with the PSC [4]. Romano-Clarke and colleagues also reported that, in a sample of 64,194 patients seen for well child visits in FYs 2007-2009, rates of behavioral health treatment increased significantly after the implementation of mandated behavioral health screening [4]. Kuhlthau and her associates examined data on statewide claims for mental health evaluations during the first two years of the CBHI program and found an increase [5].

As noted earlier, data from a large national screening and intervention program in Chile shows first grade students who are screened as being at risk on the PSC have significantly poorer scores on standardized tests of reading, math, and science in fourth grade and poorer grade point averages and attendance in third grade than PSC non risk students [6,9]. Work in progress shows that at risk children who participate in a 15 session school based CBT type intervention show significantly greater improvements on their PSC scores and in their rates of school attendance than do at risk students who do not participate in the intervention [10].

1. MassHealth. Quarterly Behavioral Health Screening Report: Behavioral health screening January 2008-December 2013. Hingham, MA: Executive Office of Health and Human Services;2014. <http://www.mass.gov/eohhs/gov/commissions-and-initiatives/cbhi/cbhi-publications-and-reports.html>. See also page 56 in the appendix to this document.
2. Hacker K, Goldstein J, Link D, Sengupta N, Bowers R, Tendulkar S, Wissow L. Pediatric provider processes for behavioral health screening, decision making, and referral in sites with colocated mental health services. *Journal of Developmental and Behavioral Pediatrics*. 2013; 34(9):680-687.
3. Hacker KA, Penfold R, Arsenault L, Zhang F, Murphy JM, Wissow L. Behavioral health services following screening in children enrolled in Massachusetts Medicaid. *Pediatrics*. 2014. Accepted for publication. See appendix for a copy of this paper.
4. Romano-Clarke G, Tang MH, Xerras DC, Egan HS, Pasinski RC, Kamin HS, McCarthy AE, Newman J, Jellinek MS, Murphy JM. Have rates of behavioral health assessment and treatment increased for Massachusetts children since the Rosie D. decision? A report from two primary care practices. *Clinical Pediatrics*. 2014; 53(3):243-249.
5. Kuhlthau KA, Jellinek MS, White G, Vancleave J, Simons J, Murphy JM. Increases in behavioral health screening in pediatric care for Massachusetts Medicaid patients. *Arch Pediatr Adolesc Med*. 2011;165:660-664.
6. Guzman MP, Jellinek M, George M, Hartley M, Squicciarini AM, Canenguez K, Kuhlthau K, Yucel R, White G, Guzman, Murphy JM. Mental health matters in elementary school; First grade screening predicts fourth grade achievement test scores. *European Child and Adolescent Psychiatry*. 2011; 20(8):401-411.
7. Murphy JM, Kamin H, Masek B, Vogeli C, Caggiano R, Sklar K et al. Using brief clinician and parent measures to track outcomes in outpatient child psychiatry: Longer term follow-up and comparative effectiveness. *Child and Adolescent Mental Health*. Published online 3 Jan 2012.
8. Executive Office of Health and Human Services. The MassHealth-approved screening tools. Children's Behavioral Health Initiative 2014; <http://www.mass.gov/eohhs/gov/commissions-and-initiatives/cbhi/screening-for-behavioral-health-conditions/the-masshealth-approved-screening-tools/>. Accessed Jul 23, 2014.
9. Murphy JM, Guzmán J, McCarthy AE, et al. Mental health predicts better academic outcomes: A longitudinal study of elementary school students in Chile. *Child Psychiatry Hum Dev*. Published online April 26, 2014. doi:10.1007/s10578-014-0464-4.
10. Guzman J, Murphy JM, Kessler R, Squicciarini AM, George M, Baer L, Canenguez K, McCarthy AE, Jellinek M. Evidence for the effectiveness of a national, school-based mental health program: A naturalistic study of elementary school students in Chile. 2014. Unpublished manuscript, Massachusetts General Hospital.

**4b.2. If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.**

#### **4c. Unintended Consequences**

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such

evidence exists).

**4c.1. Were any unintended negative consequences to individuals or populations identified during testing; OR has evidence of unintended negative consequences to individuals or populations been reported since implementation? If so, identify the negative unintended consequences and describe how benefits outweigh them or actions taken to mitigate them.**

There have been no reports of unintended consequences to individuals or populations. The PSC is susceptible to all the inaccuracies that patient completed surveys face: respondents can misread questions, mark their answers incorrectly, etc. But studies over the past few years have demonstrated that the PSC is as accurate as other brief child [1] and adult [2] patient reported outcome measures.

1. Gardner W, Lucas A, Kolko DJ, Campo JV. Comparison of the PSC-17 and alternative mental health screens in an at-risk primary care sample. J Am Acad Child Adolesc Psychiatry. 2007;46(5):611-618.
2. Murphy JM, Blais M, Baer L, McCarthy A, Kamin H, Masek B, Jellinek M. Measuring outcomes in outpatient child psychiatry: Reliable improvement, deterioration, and clinically significant improvement. Clinical Child Psychology and Psychiatry, 2013; 0 (0):1-14.

## 5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

### 5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

No

#### 5.1a. List of related or competing measures (selected from NQF-endorsed measures)

#### 5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.

### 5a. Harmonization

The measure specifications are harmonized with related measures;

**OR**

The differences in specifications are justified

#### 5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):

Are the measure specifications completely harmonized?

#### 5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.

### 5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

**OR**

Multiple measures are justified.

#### 5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):

Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

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## Appendix

**A.1 Supplemental materials may be provided in an appendix.** All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

**Attachment** **Attachment:** [NQF722\\_Appendix\\_Aug\\_04\\_2014.pdf](#)

## Contact Information

**Co.1 Measure Steward (Intellectual Property Owner):** [Massachusetts General Hospital](#)

**Co.2 Point of Contact:** [Michael, Murphy, MMURPHY6@partners.org, 617-724-3163-](#)

**Co.3 Measure Developer if different from Measure Steward:** [Massachusetts General Hospital](#)

**Co.4 Point of Contact:** [Michael, Murphy, MMURPHY6@partners.org, 617-724-3163-](#)

## Additional Information

**Ad.1 Workgroup/Expert Panel involved in measure development**

**Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**

**Measure Developer/Steward Updates and Ongoing Maintenance**

**Ad.2 Year the measure was first released:** [1990](#)

**Ad.3 Month and Year of most recent revision:** [01, 2004](#)

**Ad.4 What is your frequency for review/update of this measure?** [Continuous review; new norms for each new population group in US and international](#)

**Ad.5 When is the next scheduled review/update for this measure?** [09, 2014](#)

**Ad.6 Copyright statement:** [copyright 1984, Michael Jellinek and Michael Murphy, Massachusetts General Hospital](#)

**Ad.7 Disclaimers:**

**Ad.8 Additional Information/Comments:**