Developmental Screening and Follow-up: Follow-up Referral Tracking

Section 1. Basic Measure Information

1.A. Measure Name

Follow-up Referral Tracking

1.B. Measure Number

0205

1.C. Measure Description

Please provide a non-technical description of the measure that conveys what it measures to a broad audience.

Percentage of patients aged 6 to 36 months whose primary care clinician received feedback from a referral to a follow-up care clinician within 6 months of the date that referral for follow-up care was made.

1.D. Measure Owner

Agency for Healthcare Research and Quality (AHRQ), Pediatric Measurement Center of Excellence (PMCoE).

1.E. National Quality Forum (NQF) ID (if applicable)

Not applicable.

1.F. Measure Hierarchy

Please note here if the measure is part of a measure hierarchy or is part of a measure group or composite measure. The following definitions are used by AHRQ:

1. **Please identify the name of the collection of measures to which the measure belongs (if applicable). A collection is the highest possible level of the measure hierarchy. A collection may contain one or more sets, subsets, composites, and/or individual measures.**

   Developmental Screening and Follow-up

2. **Please identify the name of the measure set to which the measure belongs (if applicable). A set is the second level of the hierarchy. A set may include one or more subsets, composites, and/or individual measures.**

   Developmental Screening and Follow-up

3. **Please identify the name of the subset to which the measure belongs (if applicable). A subset is the third level of the hierarchy. A subset may include one or more composites, and/or individual measures.**

   Not applicable.

4. **Please identify the name of the composite measure to which the measure belongs (if applicable). A composite is a measure with a score that is an aggregate of scores from other measures. A composite may include one or more other composites and/or individual measures. Composites may comprise component measures that can or cannot be used on their own.**

   Not applicable.

1.G. Numerator Statement

Patients whose primary care clinician received feedback from a referral to a follow-up care clinician (see note 1) within 6 months of the date that referral for follow-up care (see note 2) was made.

Note 1. Feedback from a follow-up care clinician refers to correspondence between the two clinicians by way of phone, fax, paper documentation transmitted through mail, or other permissible means of transferring patient information regarding the result of the patient's visit for follow-up services.

Note 2. Referral for follow-up care is defined as the formal event by which the clinician provides a referral to the patient family (which does not include any further steps in the process like securing the appointment, confirming appointment attendance, etc.) and refers for further evaluation or to any type of therapy, intervention, or education to mitigate developmental delays and can be within the medical home or outside the medical home.

Some referral types are listed as examples here, but the list is not exhaustive:

- Part C early intervention program.
- Referral for follow-up testing.
- Home visiting for 0-5.
- Physical therapist.
- Occupational therapist.
- Speech/language pathologist.
- Medical home clinician internal
- Specialty clinician external.
- Early Head Start.
- Network care manager.

- Family-to-family support.
- Hearing and vision specialists.
- Mental health specialist.

Proper referral by the physician should include a parent consent form authorizing the use or disclosure of health information between healthcare providers. This authorization should prevent any limitation of the follow-up care clinician in being able to effectively provide feedback on the patient.

1.H. Numerator Exclusions

None.

1.I. Denominator Statement

All patients aged 6 months to 36 months who received a referral for developmental delay follow-up care or evaluation.

1.J. Denominator Exclusions

Patients who were referred for follow-up services but did not continue care in the medical home where diagnosed.

1.K. Data Sources

Check all the data sources for which the measure is specified and tested.

Paper Medical Record, Electronic Medical Record.

If other, please list all other data sources in the field below.

Section 2: Detailed Measure Specifications

Provide sufficient detail to describe how a measure would be calculated from the recommended data sources, uploading a separate document (+ Upload attachment) or a link to a URL. Examples of detailed measure specifications can be found in the CHIPRA Initial Core Set Technical Specifications Manual 2011 published by the Centers for Medicare & Medicaid Services. Although submission of formal programming code or algorithms that demonstrate how a measure would be calculated from a query of an appropriate electronic data source are not requested at this time, the availability of these resources may be a factor in determining whether a measure can be recommended for use.

Please see Attachment 2.1 for measure specifications.

Section 3. Importance of the Measure

In the following sections, provide brief descriptions of how the measure meets one or more of the following criteria for measure importance (general importance, importance to Medicaid and/or CHIP, complements or enhances an existing measure). Include references related to specific points made in your narrative (not a free-form listing of citations).

3.A. Evidence for General Importance of the Measure

Provide evidence for all applicable aspects of general importance:

- **Addresses a known or suspected quality gap and/or disparity in quality (e.g., addresses a socioeconomic disparity, a racial/ethnic disparity, a disparity for Children with Special Health Care Needs (CSHCN), a disparity for limited English proficient (LEP) populations).**
- **Potential for quality improvement (i.e., there are effective approaches to reducing the quality gap or disparity in quality).**
- **Prevalence of condition among children under age 21 and/or among pregnant women**
- **Severity of condition and burden of condition on children, family, and society (unrelated to cost)**
- **Fiscal burden of measure focus (e.g., clinical condition) on patients, families, public and private payers, or society more generally, currently and over the life span of the child.**
- **Association of measure topic with children's future health – for example, a measure addressing childhood obesity may have implications for the subsequent development of cardiovascular diseases.**
- **The extent to which the measure is applicable to changes across developmental stages (e.g., infancy, early childhood, middle childhood, adolescence, young adulthood).**

Care coordination is a key component of pediatric care. Lack of care coordination in the context of a positive developmental screen leads to a delay in approximately half of children referred for early intervention (EI) reaching agencies or alternative community resources. This lack of coordination tends to be caused by lack of communication between different agencies, and children may receive redundant screenings or lack of services (Macy, Marks, Towle, 2014). An estimated one-half to one-third of young children diagnosed with behavioral or developmental concerns through screening fail to receive evaluations or services addressing these issues. This is particularly striking as a study by Jennings and Hanline (2013) found that in the long-term, the cost-effectiveness of developmental screening is only realized when screening results in young children with delays receive needed services in a timely manner. In addition, poor referral tracking has been hypothesized to nullify the intended effect of widespread screening on delays in young children, as children may not receive services or may fall through the cracks if primary care clinicians are not communicating with the referring clinicians or organizations and are unaware that a developmental delay is not being further addressed (Jennings, Hanline, 2013).

Further, as described and documented in the American Academy of Pediatrics policy statement of 2006, Identifying Infants and Young Children with Developmental Disorders in the Medical Home: An Algorithm for Developmental Surveillance and Screening (American Academy of Pediatrics [AAP], 2006), early identification and treatment of children with neurodevelopmental and behavioral problems are critical to their well-being and development. This guidance provided the pediatric practitioner with a new paradigm and algorithm to direct screening within the medical home. This policy statement is currently being revised to "create a universal system of screening of all children in the primary care setting for the wide range of neurodevelopmental and behavioral conditions that affect the early and long term development and achievement of affected children." Early identification of problems and referral for treatment are essential for children to achieve their full potential. The 2006 policy statement emphasizes the critical need to simultaneously pursue any indicated medical evaluation while also linking the family with early intervention or early childhood education (AAP, 2006).

This goal of universal surveillance and screening is encouraged and expected, not only in medical homes, but now with other health care professionals in numerous settings. For example, the Departments of Health and Human Services and Education have launched their developmental and behavioral screening initiative, Birth to 5: Watch Me Thrive! This effort encourages all early childhood experts to work together to screen, identify developmental delays, and refer for more in-depth evaluation and treatment, as appropriate (Administration for Children and Families). The Federal partners that are a part of this initiative speak to the need and importance of screening and referral and include: the Administration for Children and Families; the Centers for Disease Control and Prevention (CDC); the National Institute of Child Health and Human Development (NICHD); the Substance Abuse and Mental Health Services Administration (SAMHSA); the Centers for Medicare & Medicaid Services (CMS); the Health Resources and Services Administration (HRSA); and the Department of Education's Office of Special Education and Rehabilitative Services. There are existing developmental screening measures (National Quality Measures Clearinghouse, 2007; National Academy for State Health Policy, 2005; National Committee for Quality Assurance [NCQA], 2009a, 2009b); however, at this time, these measures have not been adopted nationally for quality assessment and improvement use. Please see Attachment 3A.1 for additional information on the existing measures. In addition, the current proposed set of measures on Developmental Screening Follow-up are recommended for use. These and other initiatives are necessary because of the known quality gap in developmental screenings and follow-up. As noted by the CDC, 13 percent of children in the United States have developmental or behavioral disabilities (Boulet, Boyle, Schieve, 2009); however according to the U.S. Department of Education, fewer than half of the children with developmental delays are identified before starting school (Department of Education).

Obviously, when a delay in diagnosis and treatment occurs, critical and often time-sensitive early brain and child development opportunities are missed. Over the last few years there has been an improvement in the number of primary care physicians who routinely perform developmental screening with a validated tool, but still only 50 percent do so, demonstrating the potential and need for quality improvement (QI). Even for those who perform the evaluation, the issues of documenting the results, discussing the results with the families, referring when appropriate, and

following up on the referrals are daunting at best. The importance of the measures becomes even more critical with the addition of numerous organizations involved in the screening. The link back to the medical homes will be crucial, in order to assure that the screening is done and the families receive consistent messaging and also to complete the evaluation and confirm/document the referrals and follow the outcomes with partners.

These measures are applicable to changes across the developmental stages of infancy and early childhood. Their association with children's future health and education has been documented. The earlier the intervention, the less need there will be for future, more extensive, intensive, and expensive interventions (Heckman, undated). The recent Robert Wood Johnson Foundation Commission to Build a Healthier America number one recommendation was to "make investing in America's youngest children a high priority" to "build a strong foundation in the early years for a lifetime of good health (Robert Wood Johnson Foundation, 2014)."

References

Administration for Children and Families. Birth to 5: Watch Me Thrive! Early Childhood Development Web Site. Available at www.acf.hhs.gov/programs/ecd/watch-me-thrive. Accessed August 13, 2014.

American Academy of Pediatrics. Identifying Infants and Young Children with Developmental Disorders in the Medical Home: An Algorithm for Developmental Surveillance and Screening. Pediatrics 2006; 118(1):405-420. Available at http://pediatrics.aappublications.org/content/pediatrics/118/1/405.full.pdf. Accessed June 7. 2016.

Boulet SL, Boyle CA, Schieve LA. Health Care Use and Health and Functional Impact of Developmental Disabilities Among US Children, 1997-2005. Arch Pediatr Adolesc Med 2009; 163(1):19-26.

Heckman JJ. The Case for Investing in Disadvantaged Young Children. In Big Ideas for Children: Investing in Our Nation's Future, pp 49-58. Washington, DC: First Focus; undated. Available at www.heckmanequation.org/content/resource/case-investing-disadvantaged-young-children. Accessed August 13, 2014.

Jennings DJ, Hanline MF. Developmental Screening Referrals: Child and Family Factors That Predict Referral Completion. Topics Early Child Spec Educ 2013; 33(2):102-11.

Macy M, Marks K, Towle A. Missed, Misused, or Mismanaged: Improving Early Detection Systems to Optimize Child Outcomes. Topics Early Child Spec Educ 2014; 34(2):94-105.

National Academy for State Health Policy. Key measurement issues in screening, referral, and follow-up care for young children's social and emotional development. 2005. Available at www.nashp.org/wp-content/uploads/sites/default/files/key_measurement_issues.pdf. Accessed July 18, 2016.

National Committee for Quality Assurance. Well-Child Visits in the First 15 Months of Life. Washington, DC; 2009a.

National Committee for Quality Assurance. Well-Child Visits in the Third, Fourth, Fifth, and Sixth Years of Life. Washington, DC; 2009b.

National Quality Measures Clearinghouse. Measure Summary: Follow-up for children at risk for delays: proportion of children who were determined to be at significant risk for development, behavioral, or social delays who received some level of follow-up care. Rockville, MD: Agency for Healthcare Research and Quality; 2007.

Robert Wood Johnson Foundation Commission to Build a Healthier America. Time to Act: Investing in the Health of Our Children and Communities. Available at www.rwjf.org/content/dam/farm/reports/reports/2014/rwjf409002#page=44 Updated January 2014. Accessed August 13, 2014.

U.S. Department of Education, Office of Special Education Programs [Internet], Data Analysis System (DANS), Part C Child Count, 1997–2006.

3.B. Evidence for Importance of the Measure to Medicaid and/or CHIP

Comment on any specific features of this measure important to Medicaid and/or CHIP that are in addition to the evidence of importance described above, including the following:

- **The extent to which the measure is understood to be sensitive to changes in Medicaid or CHIP (e.g., policy changes, quality improvement strategies).**

- **Relevance to the Early and Periodic Screening, Diagnostic and Treatment benefit in Medicaid (EPSDT).**

- **Any other specific relevance to Medicaid/CHIP (please specify).**

Early and Periodic Screening, Diagnosis and Treatment (EPSDT) was established to meet the child health component of Medicaid (Centers for Medicare & Medicaid Services [CMS], EPSDT Web site). EPSDT specifically addresses: Early—starting at birth; Periodic—checking at appropriate times and ages; Screening—developmental, hearing, vision, physical, mental, and other tests to identify problems; Diagnostic—performing appropriate testing when a problem is identified; and Treatment—treating any problems found. In 1967 the program was developed to "discover, as early as possible, the ills that handicap our children" and to provide continuing follow-up and treatment "so that handicaps do not go neglected." This program is exactly what is being facilitated with the proposed measures as defined. It is clear to see why CMS is involved in the Help Me Thrive initiative.

In addition, the prevention guidelines for children (Bright Futures and the Periodicity Schedule) as included in the Affordable Care Act (ACA) clearly define the times for pediatric preventive care visits for the first 5 years of life, at which time developmental surveillance and screening should take place (American Academy of Pediatrics, Periodicity Schedule). The screening evaluation, follow-up referral, and referral tracking are the next necessary steps. Documentation and measurement of the referral, treatment, and outcomes through referral tracking are critical for appropriate interventions and outcomes.

Federal law requires that Medicaid cover a comprehensive set of benefits and services specifically for children. Since one in three U.S. children under age 6 is eligible for Medicaid, EPSDT offers a very important way to ensure that young children receive appropriate health, mental health, and developmental services (Maternal and Child Health Bureau, EPSDT Background, undated).

Both the Title V Maternal and Child Health Services Block Grant and the EPSDT component of Medicaid recognize social and emotional development as an integral aspect of children's health care, and research demonstrates the value of early identification and intervention to address children's needs. In Title V, the definition of children with special health care needs (CSHCN) includes social-emotional and needs (Maternal and Child Health Bureau, Title V, undated).

From screening, to diagnosis, to treatment, Medicaid and EPSDT are critical to financing evidence-based services for children (Howell, Teich, 2008). Federal law requires comprehensive well-child examinations with screening services through EPSDT, including screening for potential developmental, mental, behavioral, and/or substance use disorders. EPSDT also finances diagnostic and treatment services, if medically necessary, for these conditions (Maternal and Child Health Bureau, EPSDT, undated).

However, studies have found that as low as 23 percent of low-income children enrolled in Medicaid receive the recommended preventive and developmental services considered a basic threshold for quality care (National Collaborative for Innovation in Quality Measurement, 2011; unpublished). In addition, children insured by Medicaid had almost a two-fold higher prevalence of any developmental disorder compared to those with private insurance, and children from families below the Federal poverty level had a higher prevalence of developmental disabilities (CDC, 2011). Given the higher prevalence of developmental delay and the low percentage of children receiving adequate developmental services, quality measures that track referrals could greatly improve the long-term health outcomes of children enrolled in Medicaid and CHIP.

References

Centers for Disease Control and Prevention. Key Findings: Trends in the Prevalence of Developmental Disabilities in U.S. Children, 1997-2008. Available at https://www.cdc.gov/ncbddd/developmentaldisabilities/features/birthdefects-dd-keyfindings.html. Accessed July 18, 2016.

Centers for Medicare & Medicaid Services. Early and Periodic Screening, Diagnostic, and Treatment. EPSDT Web site. Available at www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Benefits/Early-and-Periodic-Screening-Diagnostic-and-Treatment.html. Accessed July 20, 2016.

Howell EM, Teich J. Variations in Medicaid mental health service use and cost for children. Adm Policy Ment Health 2008; 35(3):220-8.

Maternal and Child Health Bureau. EPSDT Background. Available at http://mchb.hrsa.gov/epsdt/overview.html. Accessed June 16, 2016.

Maternal and Child Health Bureau. Title V: Maternal and Child Health Services Block Grant Program. Available at http://mchb.hrsa.gov/programs/titlevgrants/. Accessed June 16, 2016.

National Collaborative for Innovation in Quality Measurement Center of Excellence (NCINQ). (2011). Developmental screening in children. Developed by NCINQ for use in the AHRQ PQMP Consortium. Unpublished.

Periodicity Schedule. American Academy of Pediatrics Web site. www.aap.org/enus/ professional-resources/practice-support/Pages/PeriodicitySchedule.aspx Accessed August 13, 2014.

3.C. Relationship to Other Measures (if any)

Describe, if known, how this measure complements or improves on an existing measure in this topic area for the child or adult population, or if it is intended to fill a specific gap in an existing measure category or topic. For example, the proposed measure may enhance an existing measure in the initial core set, it may lower the age range for an existing adult-focused measure, or it may fill a gap in measurement (e.g., for asthma care quality, inpatient care measures).

This measure enhances the developmental screening measure in the initial core set (CMS, 2011) filling the critically important follow-up referral tracking component of the next appropriate steps in care for a positive developmental screen. This measure will complement other existing measures and the others in this set through assessment of whether feedback from further evaluation or treatment was received by the primary care clinician from the referral context to follow-up after a positive developmental screening result. This measure will give a better indication about the outcomes of the referral, and whether the referral was successful and fully utilized in directing the parents towards the next appropriate step in diagnosing and treating their child's developmental health concerns when these exist.

Reference

Centers for Medicare & Medicaid Services (CMS). Initial Core Set of Children's Health Care Quality Measures: Technical Specifications and Resource Manual for Federal Fiscal Year 2011 Reporting. Baltimore, MD; 2011.

Section 4. Measure Categories

CHIPRA legislation requires that measures in the initial and improved core set, taken together, cover all settings, services, and topics of health care relevant to children. Moreover, the legislation requires the core set to address the needs of children across all ages, including services to promote healthy birth. Regardless of the eventual use of the measure, we are interested in knowing all settings, services, measure topics, and populations that this measure addresses. These categories are not exclusive of one another, so please indicate "Yes" to all that apply.

Does the measure address this category?

a. **Care Setting – ambulatory:** Yes.
b. **Care Setting – inpatient:** No.
c. **Care Setting – other – please specify:** Other: Community and Public Health Settings.
d. **Service – preventive health, including services to promote healthy birth:** yes
e. **Service – care for acute conditions:** No.
f. **Service – care for children with acute conditions:** Yes.
g. **Service – other (please specify):**
h. **Measure Topic – duration of enrollment:** No.
i. **Measure Topic – clinical quality:** Yes.
j. **Measure Topic – patient safety:** Yes.
k. **Measure Topic – family experience with care:** No.
l. **Measure Topic – care in the most integrated setting:** Yes.
m. **Measure Topic other (please specify):** No.
n. **Population – pregnant women:** No.
o. **Population – neonates (28 days after birth) (specify age range):** No.
p. **Population – infants (29 days to 1 year) (specify age range):** Yes, 6 months to 36 months.
q. **Population – pre-school age children (1 year through 5 years) (specify age range):** No.
r. **Population – school-aged children (6 years through 10 years) (specify age range):** No.
s. **Population – adolescents (11 years through 20 years) (specify age range):** No.
t. **Population – other (specify age range):** No.
u. **Other category (please specify):** No.

Section 5. Evidence or Other Justification for the Focus of the Measure

The evidence base for the focus of the measures will be made explicit and transparent as part of the public release of CHIPRA deliberations; thus, it is critical for submitters to specify the scientific evidence or other basis for the focus of the measure in the following sections.

5.A. Research Evidence

Research evidence should include a brief description of the evidence base for valid relationship(s) among the structure, process, and/or outcome of health care that is the focus of the measure. For example, evidence exists for the relationship between immunizing a child or adolescent (process of care) and improved outcomes for the child and the public. If sufficient evidence existed for the use of immunization registries in practice or at the State level and the provision of immunizations to children and adolescents, such evidence would support the focus of a measure on immunization registries (a structural measure).

Describe the nature of the evidence, including study design, and provide relevant citations for statements made. Evidence may include rigorous systematic reviews of research literature and high-quality research studies.

Screening tests can identify children with developmental delay with reasonable accuracy. Research has shown that parental questioning is a valid means of screening for developmental delays, and that standardized instruments have sensitivity and specificity similar to that of screens that require direct elicitation of a child's skills (Hamilton, 2006). See Attachment 5A.1 for the Pediatric Developmental Screening Flowchart for appropriate evidence-based developmental screening follow-up.

The definition of a medical home was established by the AAP, and it requires the maintenance of a central, accessible, and comprehensive record containing all pertinent information about the child. Furthermore, assessment may be provided in various locations, but regardless of the venue in which the screening or care occurs, a designated physician must ensure that the appropriate follow-up services are in fact provided (Medical Home Initiatives for Children with Special Needs Project Advisory Committee, 2008). As a developmental delay can impact a child's ability to function in many settings, it is important that children who fail a screen are referred promptly for evaluation and, when appropriate, to follow-up services. In order for a provider to comply with the AAP's medical home guidelines, referrals must be tracked.

A study assessing the degree to which a national sample of pediatric practices could implement the AAP recommendations for developmental screening and referrals found that while difficult to implement, referral tracking was feasible with a few workflow modifications. In addition, practices that successfully tracked referrals found that many families do not follow through with referrals and families often do not understand where they are being referred or the reason for referral. Tracking of referrals leads to better communication with local referral resources, and in this study, tracking led some practices to conclude that more children are being identified and linked to services as feedback on eligibility status of the referred children informs practices about their screening success (King, Tandon, Macias, et al., 2010).

It has been reported that physicians fail to identify and refer 60 to 90 percent of children with developmental delays in a timely manner (King, et al, 2010). Similarly, among children classified as having delays at 9 months, only 9 percent received follow-up services, and among children classified as having delays at 24 months, only 10-12 percent had received services (Rosenberg, Zhang, Robinson, 2008). Likewise, a study by Tang, Feldman, Huffman, et al. (2012) found that 34-37 percent of high-risk infants who failed a developmental screen were not referred to either early intervention or other therapies. A study cited in the report notes that the mean time between identification of a developmental delay and early intervention referral is more than 5 months.

As a developmental delay can profoundly impact a child's ability to function in multiple settings, it is imperative that children who have positive screens are referred to and receive follow-up services as soon as possible.

Rosenberg and colleagues (2008) found that only 10.1 percent of children who were classified as having delays at 24 months received early intervention (EI) services. Further, data from the Early Child Longitudinal Study, which draws from a nationally representative sample of the nearly 4 million U.S. children born in 2001, found that among children eligible to receive EI services at 9 months, only 9 percent received services. Similarly, of the children eligible to receive EI services at 24 months, 12 percent actually received services (Feinberg, Silverstein, Donahue, et al., 2012).

A child who is identified as having a developmental delay by the time school starts and has participated in an EI program is more likely to graduate high school, maintain a job, live independently, and avoid delinquency and violence. This represents a savings of between $30,000 and $100,000 per (NCINQ, 2011, unpublished).

Jensen and colleagues state that care coordinated by the primary care provider is vital for timely treatment to take place, since developmental delays often require services from a range of medical and nonmedical providers (Jensen, Chan, Weiner et al., 2009). In addition, Macy et al. suggest that collaboration between agencies and disciplines is required to efficiently coordinate early detection programs (Macy, Marks, Towle, 2014). They further state that there is a need to coordinate culturally appropriate referrals and ongoing monitoring services and also to improve the identification and referral rates and promptly link at-risk children to alternative community resources (Macy, et al., 2014). Additionally, the creation of more efficient referral paths, easier access, and improved coordination of services and resources will advance the early detection process for children and families alike. In fact, poor referral tracking was cited in a study by Jennings and Hanline (2013) as a reason why there was insufficient evidence to suggest a relationship between widespread screening and developmental delays in children.

It is imperative that developmental screening providers follow-up on referrals to make sure children are receiving the benefits from evaluation and recommended services. Further, referral completion tracking can improve the cost-effectiveness and efficacy of developmental screening (Jennings, Hanline, 2013).

Families of children with special health care needs (CSHCN) face many obstacles while navigating the complex care system for needed services. Obstacles to adequate care include gaps in available services, delays in access to care, insufficient resources to assist families in coordinating their child's care across multiple settings, and a lack of effective communication among care providers. Such fragmentation of the health service delivery system leads to child health needs that are unmet even with the presence of an adequate family income, regular access to medical care, and insurance coverage. Further, such issues prevent the family from promoting their child's health (Farmer, Marien, Frasier, 2003).

References

Farmer JE, Marien WE, Frasier L. Quality improvements in primary care for children with special health care needs: use of a brief screening measure. Child Health Care 2003; 32(4):273-85.

Feinberg E, Silverstein M, Donahue S, et al. The impact of race on participation in Part C early intervention services. J Dev Behav Pediatr 2012; 32(4):284-91.

Hamilton S. Screening for developmental delay: reliable, easy-to-use tools. J Fam Pract 2006; 55(5):415-22.

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King TM, Tandon SD, Macias MM, et al. Implementing developmental screening and referrals: lessons learned from a national project. Pediatrics 2010; 125(2):350-60.

Macy M, Marks K, Towle A. Missed, misused, or mismanaged: improving early detection systems to optimize child outcomes. Topics Early Child Spec Educ 2014; 34(2):94-105.

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National Collaborative for Innovation in Quality Measurement Center of Excellence (NCINQ). Developmental screening in children. Developed by NCINQ for use in the AHRQ PQMP Consortium. 2011. Unpublished.

Rosenberg SA, Zhang D, Robinson CC. Prevalence of developmental delays and participation in early intervention services for young children. Pediatrics 2008; 121(6):1503-9.

Tang BG, Feldman HM, Huffman LC, et al. Missed opportunities in the referral of high-risk infants to early intervention. Pediatrics 2012; 129(6):1027-34.

5.B. Clinical or Other Rationale Supporting the Focus of the Measure (optional)

Provide documentation of the clinical or other rationale for the focus of this measure, including citations as appropriate and available.

Section 6. Scientific Soundness of the Measure

Explain the methods used to determine the scientific soundness of the measure itself. Include results of all tests of validity and reliability, including description(s) of the study sample(s) and methods used to arrive at the results. Note how characteristics of other data systems, data sources, or eligible populations may affect reliability and validity.

6.A. Reliability

Reliability of the measure is the extent to which the measure results are reproducible when conditions remain the same. The method for establishing the reliability of a measure will depend on the type of measure, data source, and other factors.

Explain your rationale for selecting the methods you have chosen, show how you used the methods chosen, and provide information on the results (e.g., the Kappa statistic). Provide appropriate citations to justify methods.

Manual Chart Abstraction of the Measure

Testing Sites. The sites for testing reliability through manual chart abstraction of the measure elements included the primary care networks of the Chicago Pediatric Quality and Safety Consortium (CPQSC): Lurie Children's Hospital, Advocate Children's Hospital– Park Ridge, Advocate Children's Hospital – Oak Lawn, and John H. Stroger, Jr. Hospital. See description of the CPQSC in Attachment 6A.1.

Methods. Each site identified two research nurses with previous experience conducting pediatric chart abstractions. The nurses received additional project-specific training on how to identify, select, and stratify the charts for inclusion; conduct the manual chart abstraction; and construct each measure in the measure set. A chart abstraction tool and algorithm developed by the Developmental Screening Follow-up Leadership Team (Attachment 6A.2) was used at each site to complete the manual chart abstractions, and the research nurses received formal training on how to use these tools.

In August 2014, each site was instructed to identify up to 70 charts for retrospective review that matched the denominator criteria. For this measure, chart abstractors abstracted demographic information, numerator elements, and denominator elements and noted any pertaining exclusions according to the developed algorithm.

To complete the manual chart abstraction, the following algorithm was followed:

1. Select charts: Patients with CPT code 96110; well-child visit codes 99381, 99382, 99391, and 99392; and between ages 6-42 months during 2011 and 2013; charts meeting these criteria were randomized for inclusion.
2. Scan charts for specific phrases using natural language processing (NLP), if possible (Attachment 6A.3).
3. Collect demographics and elements for equity assessment: Gender, Race/Ethnicity, Language Preference, Insurance Status/Type, Age.
4. Review and document measure elements in the chart abstraction tool.
5. Record a summary of measure elements.
6. Note relevant comments.

Analysis. The intent of the analysis was to test the construction of the Developmental Screening Follow-up Measure through manual chart abstraction and to test the reliability and validity of the

measure to provide a basis for its use as a measure of performance for public reporting and quality improvement. The level of agreement was assessed between the two independent nurse reviewers for each element of the measure and for the overall performance reported.

Results. Across all testing sites the medical charts for 141 pediatric patients, aged 6 – 42 months were reviewed. See Patient Characteristics in Attachment 6A.4, Table 1. Of these, four (~24 percent) children received a referral.

Performance and reliability results for this measure can be found in Attachment 6A.4, Table 2. There were not enough cases to report on reliability, primarily due to the drop-off in charts meeting the denominator criteria for this measure, leading to a smaller N for analysis.

For overall performance, referral tracking was performed on only one of the children referred (25 percent). See results in Table 3 in Attachment 6A.4.

eMeasure Testing

Testing Sites. Based on feasibility testing (See Section 8 for more detail), two sites, Children's Hospital of Philadelphia (CHOP) and Ashe Pediatrics, were able to implement the Developmental Screening Follow-up: Follow-up Referral Tracking measure in their electronic health record (EHR) systems. CHOP performed feasibility testing in their fully-electronic system by attempting to implement this measure whereas, Ashe Pediatrics participated in parallel forms reliability testing.

CHOP Testing. CHOP started using a customized EHR system for developmental screening in 2011, and use extends across practices and early intervention programs in 13 counties in Pennsylvania and New Jersey, with approximately 42,000 developmental screens completed each year. Screenings at well-child visits can be completed by the patient's family. The clinician is presented with a summary score and full responses to each item in the chart. When relevant, tailored decision support tools will also appear. Follow-up referrals, when necessary, are also stored in the electronic system.

CHOP randomly selected 20 patient records with a positive developmental screening result between July 2011 and November 2013 to test the measure. The CHOP EHR was able to construct this measure as an eMeasure. Manual chart abstraction was conducted to assess reliability of the measure as an eMeasure. Thirty-three of the charts contained any documentation that feedback was received within 6 months, with 16.5 percent of the charts containing data in structured fields that were included in the eMeasure and an additional 16.5 percent of charts meeting the measure through documentation elsewhere in the charts. Sixty-six percent of the charts did not meet the measure according to the gold standard of manual chart review.

CHOP may implement a "flag" that will pop up for the patient's clinician at the next CHOP primary care office visit for a child who recently failed a developmental screening, reminding the provider to check on the status of the referral and make a note of the progress in the child's chart. The performance result of 66 percent of the charts not meeting the measure (no documented referral feedback within 6 months of referral) is consistent with clinical experience and reported studies (King, Tandon, Macias, 2010) and therefore likely a reliable result.

Ashe Pediatrics Testing. Ashe Pediatrics is a small private practice in North Carolina with a highly customized EHR based on eClinicalWorks. Ashe Pediatrics is a Level III Medical Home and vaccines and hearing, vision, and developmental screenings for well child care check-ups. They also offer premier care for children and youth with special health care needs (CYSHCN), attention deficit hyperactivity disorder (ADHD), and other chronic illnesses.

As feasibility testing indicated that this measure was technically feasible in Ashe Pediatrics' EHR system, this site performed parallel forms reliability testing. The measure was constructed in the HER, and manual chart abstraction was performed on the same charts. Ashe Pediatrics implemented the Developmental Screening Follow-up: Follow-up Referral Tracking measure in their EHR using an electronic algorithm, which constructed the measure automatically and generated a performance report on a sample of patients. At the same time, a trained chart abstracter performed manual chart reviews on the same patients' charts. Performance according to manual chart abstraction was then compared to the automated data eMeasure report to determine the reliability of the overall measure and individual measure elements.

A total of 224 developmental screens (117 unique patients) were identified for the period January 2013 – December 2013 and were abstracted both manually and electronically. While this eMeasure was considered technically feasible—as there is a queriable field in the EHR indicating whether a developmental screening score is abnormal—after feasibility testing at this site, parallel forms reliability testing indicated that the structured field for indicating that a developmental screening score is abnormal is not routinely used. Thus, because we were unable to identify if a referral was warranted, and the denominator elements of this eMeasure could not be identified, the eMeasure failed implementation feasibility and was deemed not feasible.

Reference

King TN, Tandon SD, Macias MM, et al. Implementing developmental screening and referrals: lessons learned from a national project. Pediatrics 2010; 125(2):350-60.

6.B. Validity

Validity of the measure is the extent to which the measure meaningfully represents the concept being evaluated. The method for establishing the validity of a measure will depend on the type of measure, data source, and other factors.

Explain your rationale for selecting the methods you have chosen, show how you used the methods chosen, and provide information on the results (e.g., R2 for concurrent validity).

Manual Chart Abstraction Data

The data collected through the manual chart abstraction in the primary care networks of the CPQSC were also used to assess the accuracy of the performance score and the validity of the measure. Direct inspection of the data was performed to determine that each of the elements of the measure could be abstracted from the charts. The data were reviewed to assess for missing data or other irregularities in the data and to assess the accuracy of the data and the validity of the resulting overall performance score.

Results

All the elements of the Follow-up Referral after Positive Developmental Screening measure are generally documented in the charts when done. There were insufficient cases to assess the validity of this measure at this time. However, the clinical performance assessed for this measure nonetheless is consistent with the literature reports of the results of referral tracking (Feinber, Silverstein, Donahue, et al., 2012; King, Tandon, Macias, et al., 2010; Jennings, Hanline, 2013; Jensen, Chan, Weiner, et al., 2009). See Attachment 6A.4 Tables 1-3.

Public Comment

In fall of 2013, the three Developmental Screening Follow-up measures went through an online public comment process. Prior to the Public Comment Period, members of the PMCoE Developmental Screening Follow-up Expert Workgroup were asked to identify organizations and individuals who could provide valuable feedback on the measures. Materials were provided to these groups, and they were asked in turn to pass along the materials as well in order to achieve a comprehensive and broad range of stakeholder views and comments. Stakeholders were notified and requested to participate through an email that included a link to the measures and the online survey. Participants were provided with some background information on the AHRQ-CMS CHIPRA PMCoE and the Pediatric Quality Measurement Program and were asked to review the descriptions of each of the measures. Comments were requested specifically on any or all of the following aspects of each measure: importance, feasibility, consistency with current organizations' practices, and additional evidence for consideration. One hundred eighty-five stakeholders started the public comment survey, and 108 stakeholders reviewed and commented on the developmental screening follow-up measure set. Please see Attachment 6B.1 for a summary of participants.

Feedback received during public comment was then analyzed by the PMCoE Developmental Screening Follow-up Leadership Team. Results on a scale of 1 (not important) to 9 (extremely important) were aggregated for the domains of importance, feasibility, validity, and clinical relevance. Please see Attachment 6B.2 for histograms of the validity and clinical relevance domains.

Comments were sorted initially by measure and by domain. Then, comments were analyzed thematically and sorted according to the identified themes. For this measure, themes included measure setting confusion, feasibility of obtaining feedback, timeframe concerns, validity of the feedback received, EHR configurations, parental permission as a barrier, and definitional discrepancies. This allowed the Leadership Team and Expert Workgroup to identify key stakeholder concerns and then to address them by updating and refining the measure as necessary.

Results from Public Comment

On a scale of 1 (not important) to 9 (extremely important), of those who commented on the Developmental Screening Follow-up Follow-up Referral Tracking measure, 94 percent of participants responded that this measure was very important by providing a score of 7 or higher. Similarly, 75 percent of participants thought the measure was very valid (score of 7 or higher),

with 90 percent responding that the measure was very clinically relevant (score of 7 or higher). These high scores indicate participants' belief that this measure accurately represents the concept being evaluated and would be useful in a clinical context.

Participants were also provided with a free text comment box in which they could express their comments on the measure and suggest any changes. Some excerpts that speak to the validity of the measure include:

"We really applaud the intent of this measure."

"Considered a highly clinically relevant and important information that can improve the delivery of care."

"This is an important and critical measure in that it will focus on this concept and on enhancement of standardization of EMRs to allow for measurement of this topic area."

"It is critical to go beyond measuring screenings and have appropriate follow-up to ensure services are received."

"The measure is important."

"Feedback is crucial to provide consistent support to children and families."

"I would like to track referrals and hope in future to track referrals."

"Not only is it important that critical children are referred for further evaluation and interventions but it is just as important that the physician is aware if the evaluations and interventions have taken place."

"The support a receiving agency can give to the good referral practices of a physician/clinic is vital to continuing and increasing these positive referral practices."

One concern that was raised regarding the validity of the measure focused on the usefulness of feedback received. The Leadership Team discussed this and ultimately decided that regardless of the content, it is still useful for a primary care clinician to receive notice that a patient was seen at a follow-up care appointment. Knowledge of this fact will help the clinician better move forward with caring for the patient in the future and will also maintain all medical records and referrals in one place, which may prevent duplicate referrals or a patient falling through the cracks by never scheduling an appointment with a follow-up care physician.

References

Feinberg E, Silverstein M, Donahue S, et al. The impact of race on participation in Part C early intervention services. J Dev Behav Pediatr 2012; 32(4):284-91.

King TM, Tandon SD, Macias MM, et al. Implementing developmental screening and referrals: lessons learned from a national project. Pediatrics 2010; 125(2):350-60.

Jennings DJ, Hanline MF. Developmental screening referrals: child and family factors that predict referral completion. Topics Early Child Spec Educ 2013; 33(2):102-11.

Jensen RE, Chan KS, Weiner JP, et al. Implementing electronic health record-based quality measures for developmental screening. Pediatrics 2009; 124(4):e648-54.

Section 7. Identification of Disparities

CHIPRA requires that quality measures be able to identify disparities by race, ethnicity, socioeconomic status, and special health care needs. Thus, we strongly encourage nominators to have tested measures in diverse populations. Such testing provides evidence for assessing measure's performance for disparities identification. In the sections below, describe the results of efforts to demonstrate the capacity of this measure to produce results that can be stratified by the characteristics noted and retain the scientific soundness (reliability and validity) within and across the relevant subgroups.

7.A. Race/Ethnicity

The first developmental screening follow-up measure—follow-up with patient's family after a developmental screen was tested in four of the Chicago Pediatric Quality and Safety Consortium Sites by manual chart review. Across all sites, 32.14 percent of the population was white, 30.71 percent was black, 14.29 percent was Hispanic, 7.86 percent was other, and 15.00 percent was unknown. Please see Attachment 7A.1 for Table 1 Demographic Information.

In order to meet the denominator criteria of this measure, a validated screening tool must be administered during a developmental screening. Across all sites, over 90 percent of white patients were screened with a validated screening tool. In stark contrast, only approximately 17 percent of black patients and 52 percent of Hispanic patients were screened using a validated tool. This disparity is further pronounced when looking across sites, as one site, Site D, has a predominantly black patient population and rarely uses a validated screening tool, reporting rates as low as 16.5 percent for white patients, 8.5 percent for black patients, and 20 percent for Hispanic patients. Please see Attachment 7A.1 for Table 2 Use of a Validated Tool by Race.

As for measure performance, sites were unable to easily identify patients with positive developmental screens prior to performing a chart review, and very few patients met the denominator criteria for this measure. As such, we were unable to conduct enough chart reviews to evaluate the performance of this measure by race/ethnicity.

Our results are supported by AHRQ National Health Care Disparities Report, 2013 that reports in 2011 and 2012, black children and Hispanic children had lower rates of well-child visits compared with their white counterparts (Agency for Healthcare Research and Quality, 2013). If children are unable to attend well-child visits, they are unlikely to receive a developmental screening administered with a validated screening tool. Further, even with access to care,

developmental screening in the pediatric setting with a standardized tool is only close to 50 percent and the American Academy of Pediatrics in a Technical Report on racial and ethnic disparities concluded that racial/ethnic disparities in children's health and health care are extensive, pervasive, and persistent and occur across the spectrum of health and health care (Flores, 2010).

References

Agency for Healthcare Research and Quality. National Healthcare Disparities Report, 2013. Available at www.ahrq.gov/research/findings/nhqrdr/nhdr13/index.html. Accessed June 22, 2016.

Flores G. Technical report: racial and ethnic disparities in the health and health care of children. Pediatrics 2010; 124(4):e979-e1020.

7.B. Special Health Care Needs

The performance of this measure was not assessed for children with special health care needs, as all children who qualify for this measure will have had a positive developmental screening result and would be considered children with special health care needs.

7.C. Socioeconomic Status

Across all testing sites, 64.29 percent of patients used Medicaid, 32.14 percent of patients used private insurance, and insurance data were missing for 3.57 percent of patients. Please see Attachment 7A.1 for Table 1, Demographic Information.

In order to meet the denominator criteria of this measure, a validated screening tool must be administered during a well-child visit. Across all testing sites, approximately, 41.76 percent of Medicaid users were screened using a validated tool; nearly 98 percent of patients using private insurance were screened with a validated tool. The site-specific data are included in Attachment 7C.1 Table 1, Use of a Validated Tool by Insurance Status.

As for measure performance, sites were unable to easily identify patients with positive developmental screens prior to performing a chart review, and very few patients met the denominator criteria for this measure. As such, we were unable to conduct enough chart reviews to evaluate the performance of this measure by insurance status.

7.D. Rurality/Urbanicity

All testing sites are located in the Chicagoland area, and therefore, the measure performance was not tested by rurality/urbanicity.

7.E. Limited English Proficiency (LEP) Populations

Across all testing sites, the majority of patients were English-speaking (95.74 percent). Please see Attachment 7A.1 for Table 1, Demographic Information.

In order to meet the denominator criteria of this measure, a validated screening tool must be administered during a well-child visit. Across all sites, approximately 59 percent of English-speaking patients and 67 percent of non-English-speaking patients received a developmental screen using a validated screening tool. While it may appear that non-English speaking patients were more likely to be screened with a validated tool, this result is primarily driven by the low rates of validated tool use at Site D, as in all other sites, non-English speaking patients were as likely or less likely to receive a developmental screening using a validated screening tool. Please see Attachment 7E.1 for Table 1, Use of a Validated Tool by Language.

As for measure performance, sites were unable to easily identify patients with positive developmental screens prior to performing a chart review, and very few patients met the denominator criteria for this measure. As such, we were unable to conduct enough chart reviews to evaluate the performance of this measure for LEP populations.

Our results are supported by an American Academy of Pediatrics (AAP) Periodic Survey of Fellows, which reported that while health literacy is not limited to immigrant families, developmental screening, referral, and follow-up can certainly be much more difficult in the context of language proficiency issues and health literacy fellows (American Academy of Pediatrics, 2013-2014).

Reference

American Academy of Pediatrics. Periodic survey of fellows, #86, August 2013-2014. Available at www.aap.org/en-us/professional-resources/Research/pediatrician-surveys/Pages/Periodic-Survey-of-Fellows.aspx. Accessed June 22, 2016.

Section 8. Feasibility

Feasibility is the extent to which the data required for the measure are readily available, retrievable without undue burden, and can be implemented for performance measurement. Using the following sections, explain the methods used to determine the feasibility of implementing the measure.

8.A. Data Availability

1. What is the availability of data in existing data systems? How readily are the data available?

Manual Chart Abstraction

Feasibility of construction of the Developmental Screening Follow-up Measure: Follow-up Referral Tracking was tested in the primary care networks of the Chicago Pediatric Quality and Safety Consortium (CPQSC), including: Mount Sinai Children's Hospital, Advocate Children's Hospital—Park Ridge, Advocate Children's Hospital—Oak Lawn, John H. Stroger Hospital, and Lurie Children's Hospital.

Across all testing sites the medical charts for 141 pediatric patients, aged 6 – 42 months were reviewed. See Patient Characteristics in Attachment 6A.4 Table 1. Of these, 4 (~24 percent) children received a referral.

Results for this measure are found in Attachment 6A.4 Table 2. There was considerable drop-off in charts meeting the denominator criteria, leading to a small N for analysis.

eMeasure Feasibility Testing – CPQSC

eMeasure feasibility testing was conducted in the primary care networks of the CPQSC. The EHR vendor systems assessed included Epic, Cerner, and Allscripts TouchWorks. See the Data Element Table (DET) tool used for data collection (Attachment 8A.1, DET Example).

Test site capabilities to calculate the measure are summarized in Tables 8.1-8.2. Demographic data elements including race, gender, ethnicity, preferred language, and payer are currently captured in structured data fields at all sites. Some important data elements required to calculate this measure do not exist in structured fields in CPQSC EHRs at this time. Therefore, it is not possible to calculate this measure electronically using only structured data fields from the EHRs of these test sites.

eMeasure Feasibility Testing – National Search

The PMCoE Team conducted a national search through the networks and suggestions of the PMCoE Developmental Screening Follow-up (DSF) Expert Workgroup for practices with EHRs that may have the measure elements in structured fields to test this eMeasure for public use.

Twelve networks that comprise 52 sites overall were recommended. Of these, seven networks could feasibly or nearly feasibly construct the measures in the Developmental Screening Follow-up measure. Systems that had the necessary elements for the measures were either eClinicalWorks or individually customized EHR systems. The Children's Hospital of Philadelphia (CHOP) and Ashe Pediatrics performed feasibility testing.

eMeasure Testing—CHOP. CHOP started using an electronic system for developmental screening in 2011, and use now extends across practices in 13 counties and early intervention programs. Screenings at well-visits can be completed by the patient's family. The clinician is presented with a summary score and full responses to each item in the chart. Follow-up referrals are also stored in the electronic system. To test the feasibility to construct this eMeasure in the CHOP EHR, CHOP randomly selected 24 patients who had a positive developmental screening and were referred for follow-up care from July 2011- April 2014. The CHOP EHR system was able to construct this measure. Through review of the results and reliability testing through comparison with manual chart review, it was determined that 33 percent of patients had some feedback and met the measure criteria. Additionally, 50 percent of the referrals were from an external source.

eMeasure Testing—Ashe Pediatrics. Ashe Pediatrics, a private practice in North Carolina with a customized EHR system based on eClinicalWorks, also completed feasibility testing. All required structured, queriable fields exist in the Ashe Pediatrics EHR; therefore, it is technically

possible to calculate this measure electronically using only structured data fields. See Attachment 8A.1 and Table 8.2 for the DET and feasibility testing results.

2. If data are not available in existing data systems or would be better collected from future data systems, what is the potential for modifying current data systems or creating new data systems to enhance the feasibility of the measure and facilitate implementation?

Important data elements required to calculate this measure do not exist in structured data fields in CPQSC site EHRs at this time. For example, the denominator element "positive developmental screening result" and the corresponding date are not captured as a structured variable at any of the test sites. While developmental screening can be identified with CPT code 96110 at each test site, none of the sites have structured fields to indicate administration of an acceptable developmental screening tool for this measure. If a developmental screening tool is administered at a site, the results are scanned into the EHR systems, and there is no structured data field indicating whether or not the screen was positive. The numerator element "Referral for follow-up care" is captured as an HL7 coded value at two sites for internal referrals only (paper requests are sent to outside providers). At three of the five test sites, both internal and external referrals were paper-based. The numerator element "Feedback from follow-up care clinician" and the corresponding date are not recorded in structured fields at any of the testing sites but are instead documented as free text in note fields (after a phone or email conversation with referred physician) or as a document that is scanned into the patient's chart. The exclusion "referral sent but care discontinued" was not recorded in a structured field at any of the test sites, while "follow-up visit not attended" was codified only at Stroger Hospital, and "pre-existing or concurrent care" was codified at the two Advocate sites and Lurie Children's Hospital.

Recommendations for changes to future EHR systems include the following:

1. All sites should administer a developmental screening tool to patients, preferably electronically rather than paper-based, so that the results could be more easily incorporated into an EHR.
2. Each site should have a structured data field within the EHR that stores a dichotomous variable (e.g., "positive" or "negative") indicating the results of the screen and the corresponding date.
3. Each site should have a structured data field within the EHR that stores a dichotomous variable (e.g., "true" or "false") indicating whether or not a patient received a referral for follow-up care and includes a drop-down menu of referral types.
4. A structured field for the date of the referral should be provided.
5. As was done in CHOP's customized EHR, a structured field with a drop-down menu should be included to assess the reasons a referral was not made.
6. Clinician workflows affected referral documentation in structured fields. However, when a provider does use the drop-down menu, a wealth of information can be collected including why a patient was not referred (already receiving services, did not want services, etc.).
7. Closure of referral loops should be effected by marking referrals as "reviewed" by the primary care physician. The EHR should prompt providers if the referral responses are not received or reviewed within a particular time frame. A report detailing this information

would also be helpful, including outreach rates for referrals and the rate of successful outreach.

Sites capable of free text searches using natural language processing (NLP), such as Lurie Children's Hospital, may be capable of extracting the necessary data elements with NLP. Sites for which NLP techniques cannot be implemented will require workflow modifications or changes to the EHRs. See the Recommendations to Vendors Table, Attachment 8A.2.

8.B. Lessons from Use of the Measure

1. Describe the extent to which the measure has been used or is in use, including the types of settings in which it has been used, and purposes for which it has been used.

The Developmental Screening Follow-up Measure—Referral Tracking, as specified by the PMCoE Developmental Screening Leadership Team and Expert Technical Panel was considered for use by the American Board of Pediatrics (ABP) Maintenance of Certification (MOC) – Part 4 Performance Improvement Module (PIM) for use by physicians in the process of Re-Certification. Ultimately it was decided that this measure would not work within the timeline of an MOC PIM.

2. If the measure has been used or is in use, what methods, if any, have already been used to collect data for this measure?

Not applicable.

3. What lessons are available from the current or prior use of the measure?

Not applicable.

Section 9. Levels of Aggregation

CHIPRA states that data used in quality measures must be collected and reported in a standard format that permits comparison (at minimum) at State, health plan, and provider levels. Use the following table to provide information about this measure's use for reporting at the levels of aggregation in the table.

For the purpose of this section, please refer to the definitions for provider, practice site, medical group, and network in the Glossary of Terms.

If there is no information about whether the measure could be meaningfully reported at a specific level of aggregation, please write "Not available" in the text field before progressing to the next section.

Level of aggregation (Unit) for reporting on the quality of care for children covered by Medicaid/ CHIP†:

State level* Can compare States

Intended use: **Is measure intended to support meaningful comparisons at this level? (Yes/No)**
Yes.

Data Sources: **Are data sources available to support reporting at this level?**
No.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Not available at this time.

In Use: **Have measure results been reported at this level previously?**
No.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
No.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
There are no unintended consequences for reporting this measure if the data are accurate. For State programs that do not reimburse for CPT code 96110, which indicates that a validated developmental screening tool was used, it may be difficult to identify the accurate denominator population. If physicians use this code to indicate that an appropriate screening tool was used in the medical records, eligible subjects could be left out of the denominator.

Other geographic level: Can compare other geographic regions (e.g., MSA, HRR)

Intended use: **Is measure intended to support meaningful comparisons at this level? (Yes/No)**
Yes.

Data Sources: **Are data sources available to support reporting at this level?**
No.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Not available at this time.

In Use: **Have measure results been reported at this level previously?**
No.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
No.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
There are no unintended consequences for reporting this measure if the data are accurate.

Medicaid or CHIP Payment model: Can compare payment models (e.g., managed care, primary care case management, FFS, and other models)

Intended use: **Is measure intended to support meaningful comparisons at this level? (Yes/No)**
Yes.

Data Sources: **Are data sources available to support reporting at this level?**
No.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Not available at this time.

In Use: **Have measure results been reported at this level previously?**
No.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
No.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
There are no unintended consequences for reporting this measure if the data are accurate. For State programs that do not reimburse for CPT code 96110, which indicates that a validated developmental screening tool was used, it may be difficult to identify the accurate denominator population. If physicians use this code to indicate that an appropriate screening tool was used in the medical records, eligible subjects could be left out of the denominator.

Health plan*: Can compare quality of care among health plans.

Intended use: **Is measure intended to support meaningful comparisons at this level? (Yes/No)**
Yes.

Data Sources: **Are data sources available to support reporting at this level?**
No.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Not available at this time.

In Use: **Have measure results been reported at this level previously?**
No.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
No.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
There are no unintended consequences for reporting this measure if the data are accurate.

Provider Level

Individual practitioner: Can compare individual health care professionals

Intended use: **Is measure intended to support meaningful comparisons at this level? (Yes/No)**
Yes.

Data Sources: **Are data sources available to support reporting at this level?**
No.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Not available at this time.

In Use: **Have measure results been reported at this level previously?**
No.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
No.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
There are no unintended consequences for reporting this measure if the data are accurate.

Provider Level

Hospital: Can compare hospitals

Intended use: **Is measure intended to support meaningful comparisons at this level? (Yes/No)**
No.

Data Sources: **Are data sources available to support reporting at this level?**
No.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Not available at this time.

In Use: **Have measure results been reported at this level previously?**
No.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
No.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
Not applicable.

Provider Level

Practice, group, or facility:** Can compare: (i) practice sites; (ii) medical or other professional groups; or (iii) integrated or other delivery networks.

Intended use: **Is measure intended to support meaningful comparisons at this level? (Yes/No)**
Yes.

Data Sources: **Are data sources available to support reporting at this level?**
No.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**
Not available at this time.

In Use: **Have measure results been reported at this level previously?**
No.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**
No.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**
There are no unintended consequences for reporting this measure if the data are accurate.

Section 10. Understandability

CHIPRA states that the core set should allow purchasers, families, and health care providers to understand the quality of care for children. Please describe the usefulness of this measure toward achieving this goal. Describe efforts to assess the understandability of this measure (e.g., focus group testing with stakeholders).

Public Reporting

This measure is based on guideline-recommended practice (American Academy of Pediatrics, 2009; National Center for Medical Home Implementation, undated) and modeled on the elements of the well-respected American Academy of Pediatrics (AAP), Bright Futures national initiative and the Health Resources and Services Administration (HRSA),Maternal Child Health (MCHB) Early Periodic Screening, Diagnostic, and Treatment (EPSDT) Program (American Academy of Pediatrics, Bright Futures, undated; Health Resources and Services Administration, undated). In addition, the measures in the Developmental Screening Follow-up measure set are being prepared for implementation for use in two State Medicaid/CHIP Programs (North Carolina and Pennsylvania). Developmental screening follow-up and particularly follow-up referral tracking to ensure receipt of further evaluation or additional services and to track the results of a referral are fundamental aspects of pediatric practice and that are essential to early childhood pediatric care quality.

An estimated one-half to one-third of young children diagnosed with behavioral or developmental concerns through screening fail to receive evaluations or services addressing these issues. This is particularly striking, as the same study found that in the long-term, the cost-effectiveness of developmental screening is only realized when screening results in young children with delays receiving needed services in a timely manner (Jennings, Hanline, 2013). In addition, poor referral tracking has been hypothesized to nullify the intended effect of widespread screening on delays in young children, as children may not receive services or may fall through the cracks if primary care clinicians are not communicating with the referring clinicians or organizations and are unaware that a developmental delay is not being further addressed (National Center for Medical Home Implementation, undated). Obviously, when a delay in diagnosis and treatment occurs, critical and often time-sensitive early brain and child development opportunities are missed.

It is easy for both clinicians and families to understand the rationale and importance of a child's pediatrician tracking the evaluations and care the child receives. This is an important measure for assessment of care quality because there are known gaps in care in this domain. This measure can be used to provide transparency regarding comparative best, evidence-based pediatric practice for the child and his or her family and provide a measure of accountability for payers, purchasers, and States. Because this measure and the two other measures in the Developmental Screening Follow-up measure set are focused on such a fundamental aspect of primary care pediatrics, these may represent a proxy for general pediatric primary care quality. This measure is meant to be used to calculate performance and/or reporting at the practice, institution, health plan, State, regional, and national levels.

The results from a broad range of stakeholders (N=108) through public comment regarding this measure indicate that the measure is Important, Valid, and Clinically Relevant. See Attachment 6B.2.

Performance Improvement

Performance measurement serves as an important component of a quality improvement strategy. This measure can be used appropriately for performance measurement directed at improving the frequency of evidence-based follow-up with the patient's family after a developmental screening. These measures can provide critical information to direct improvement as they are linked directly to specific guideline-recommended processes for developmental screening follow-up and operational steps that clinicians can apply in pediatric primary care practice to improve care.

References

American Academy of Pediatrics. Bright Futures; Materials and Tools. Practice Guides and Other Resources. Available at http://brightfutures.aap.org/practice_guides_and_other_resources.html. Accessed June 28, 2016.

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Section 11. Health Information Technology

Please respond to the following questions in terms of any health information technology (health IT) that has been or could be incorporated into the measure calculation.

11.A. Health IT Enhancement

Please describe how health IT may enhance the use of this measure.

Health IT could be helpful in resolving three issues with construction of the measure in the EHR. The issues are related to the denominator elements "positive developmental screening result" and "referral for follow-up care" after a positive screening result, and the numerator element "feedback from a follow-up care clinician." First, positive developmental screening results could be more clearly identified and stratified within the EHR if two pieces of information were

encoded: one, a dichotomous variable in a structured field indicating whether or not a developmental screening result was positive (i.e., yes/no or true/false) and the corresponding date the positive screening result was identified; and two, including one or more ICD-9-CM codes that further describe a positive developmental screen. Some possibilities include 783.42 (Delayed milestones), 315.31 (Language disorder, developmental), 315.9 (Learning disorder, NOS), 348.3 (Static encephalopathy), and 781.3 (Lack of coordination). See Attachment 11A.1 for additional codes. Second, a referral for follow-up care would be more effectively documented by coding three pieces of information in the EHR: one, a dichotomous variable in a structured field indicating if a referral for a positive developmental screen was ordered, along with the corresponding date; two, the type of referral given, possibly from a drop-down list, including, but not necessarily limited to Part C, Early Intervention Program, Referral for Follow-up Testing, Home Visiting for 0-5, Physical Therapist, Occupational Therapist, Speech/Language Pathologist, Medical Home Clinician Internal, Specialty Clinician External, Early Head Start, Network Care Manager, Family-to-family Support, Hearing and Vision Specialists, and Mental Health Specialist; and three, one or more CPT and/or ICD-9-CM codes for the referral (CPT 99241-99245, 99201-99205, 99211-99215, 90806, 97001, 97002, 97039, 97110, 97116, 97530, 92506, 92507, 92610, ICD-9-CM V68.81). Feedback from a follow-up care clinician could be electronically tracked through communication between EHR systems. However, if this is infeasible, the primary care provider will have to enter this information manually. At minimum, two pieces of information should be captured in structured data fields: one, a check-box indicating that feedback has been received, and two, the date on which the feedback was received.

11.B. Health IT Testing

Has the measure been tested as part of an electronic health record (EHR) or other health IT system?
Yes.

If so, in what health IT system was it tested and what were the results of testing?

Feasibility testing for construction of this measure was conducted using three EHR vendor systems (Cerner, EPIC, and eClinicalWorks) and a self-developed system. It was determined that of these four systems, only eClinicalWorks has the necessary elements for the construction of Developmental Screening Follow-up Measure 3 - Follow-up Referral Tracking. Further detail is provided in Section 8 and in Attachment 8A, Table 8.1.

11.C. Health IT Workflow

Please describe how the information needed to calculate the measure may be captured as part of routine clinical or administrative workflow.

The Health IT workflow for this measure could be enhanced in four ways (see Attachment 8A.2 for a summary). One way is to create a structured data field in the EHR to identify if the score from a screening result that is entered into the record lies below the cutoff according to the particular scoring tool's logic. In addition, a prompt function could be activated if the score falls below the cutoff. This would help to flag the record and remind the provider that the patient should be referred to an appropriate specialist to address the issue(s). In order to keep track of

and summarize a patient's developmental progress over time, a report function could be created that allows grouping of positive screens by time interval, individual primary care provider, domain, or child age.

Another way to improve workflow and prevent oversight would be to create a structured data field for referral categories, allowing the provider to choose the category from a drop-down list. In the case that a patient received a positive developmental screening result and no referral was ordered, a prompt function reminding the provider to indicate the screening type would be helpful. Furthermore, providing a report function that is capable of returning a list of children with a positive screening result by date and type of referral would help with comparative analysis and to identify trends in the patient population. Yet another improvement could be to close the referral loop by providing a structured data field in the EHR allowing referral responses to be reviewed.

A further enhancement would be to provide a prompt function to the provider when a referral response has not been received or reviewed within a particular time frame. A referral tracking system could be facilitated by creating a report function that listed referrals and properties associated with them, including whether they have been received, completed, responded to, and reviewed. These could be grouped by chosen time intervals for stratification. Electronic documentation of referral results is necessary for this measure to be calculated properly. A report function capable of returning outreach rates associated with a referral for a positive screen as well as the rate of successful outreach to the referee (indicating a closed referral loop) would allow the primary care provider to assess the quality of the referral process. Of course, to be effective, these workflow modifications should fit well with current practices and not significantly increase the time the provider takes to enter information into the EHR, since complicating the information entry tends to decrease the amount of time the provider spends conversing with the patient, parent, or caregiver.

11.D. Health IT Standards

Are the data elements in this measure supported explicitly by the Office of the National Coordinator for Health IT Standards and Certification criteria (see http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__standards_ifr/1195)?

No.

If yes, please describe.

11.E. Health IT Calculation

Please assess the likelihood that missing or ambiguous information will lead to calculation errors.

Two of the elements for this measure ("birth date" and "encounter") were identifiable and encoded as structured data in the EHR systems of each of our test sites. We are confident that these two elements will exist as structured data in the majority of EHR systems. The biggest concern regarding the calculation of this measure is that the four remaining denominator elements ("positive developmental screening result" and "positive developmental screening

result, date," "referral for follow-up care," and "referral for follow-up care, date) and the two numerator elements ("feedback from follow-up care clinician" and "feedback from follow-up care clinician, date") will not be captured in structured data fields.

There are five potential issues. The first is the ability to determine whether a developmental screen was positive. This element will most likely not exist in many EHR systems. The second issue is whether or not it is possible to determine that, if a screening result was positive, a referral for follow-up care was provided. The third issue is that, if a referral was made, whether the category or type of referral is identifiable in the EHR. We have identified a list of possible referrals (Part C, Early Intervention Program, Referral for Follow-up Testing, Home Visiting for 0-5, Physical Therapist, Occupational Therapist, Speech/Language Pathologist, Medical Home Clinician Internal, Specialty Clinician External, Early Head Start, Network Care Manager, Family-to-Family Support, Hearing and Vision Specialists, and Mental Health Specialist) that could be ordered.

A possible fourth issue that we identified during feasibility testing is that the EHRs at some facilities (both Advocate sites in our test) have the capability to record internal (i.e., within-network), but not external referrals, which will lead to inconsistent results in measure calculation. For this measure to work correctly, all referrals would need to be tracked electronically, and all relevant information would have to be stored within the patients record. The fifth issue is related to feedback from a referral for follow-up care. This may be the most difficult element to encode as structured data, given current workflows and logistical limitations such as the use of telephone, faxes, and email for communication. In order for this element to be encoded correctly, the "referral loop" must be closed. This involves three steps: one, a referral is made to a follow-up care clinician; two, the patient completes the referral encounter; and three, the referral provider contacts the primary care provider and gives feedback/results for the referral. The occurrence of feedback could be captured in a simple construct such as a check-box, but this will rely on the primary care provider to activate. The multiple steps complicate the documentation of this element.

A report function capable of returning outreach rates associated with a referral for a positive screen as well as the rate of successful outreach to the individual who made the referral (indicating a closed referral loop) would allow the primary care provider to assess the quality of the referral process. Of course, to be effective these workflow modifications should fit well with current practices and not significantly increase the time the provider takes to enter information into the EHR.

11.F. Health IT Other Functions

If the measure is implemented in an EHR or other health IT system, how might implementation of other health IT functions (e.g., computerized decision support systems in an EHR) enhance performance characteristics on the measure?

In order to keep track of and summarize a patient's referral(s), communication with referral providers, and services received over time, a report function could be created that allows the grouping of positive screens by time interval, individual primary care provider, referral domain, communications and timeframe, services received , and the child's age. Finally, providing a

report function that is capable of returning a list of children with a positive screening result by date and type of referral would help with comparative analysis and to identify trends in the patient population. Of course, to be effective these workflow modifications should fit well with current practices and not significantly increase the time the provider takes to enter information into the EHR.

Section 12. Limitations of the Measure

Describe any limitations of the measure related to the attributes included in this CPCF (i.e., availability of measure specifications, importance of the measure, evidence for the focus of the measure, scientific soundness of the measure, identification of disparities, feasibility, levels of aggregation, understandability, health information technology).

Chart Review Measure Limitations

There are two primary limitations of this measure: one, most State Medicaid and CHIP programs find chart review as a method for quality assessment to be challenging and burdensome and therefore do not use measures specified for manual chart abstraction; and two, because most EHRs do not include a structured field with a code to indicate a positive screen, manual review is required to identify records that fit the denominator criteria, making it burdensome to identify appropriate charts and leading to small numbers for assessment.

Since all aspects of Developmental Screening Follow-up represent a critical and fundamental aspect of pediatric care that can lead to considerable morbidity and costs if not performed appropriately, there are no appropriate administrative codes by which to assess developmental screening follow-up, and only a few EHR systems can construct the measure as an eMeasure, manual chart review currently is the only option for most practices. This will change quickly over the next few years and particularly if assessment of developmental screening follow-up becomes used for public reporting of pediatric care quality.

eMeasure Limitations

The slow diffusion of EHRs in pediatrics provides a current limitation for the implementation of eMeasures. EHRs were not designed with pediatric patients in mind, as they were modified from records intended for billing in adult medicine and therefore were not designed to prioritize pediatric-focused care. As more pediatric practices are using EHRs, these practices are beginning to customize their EHR systems in order to collect and report on fundamental aspects of pediatric care, such as Developmental Screening and Developmental Screening Follow-up.

Cerner and Epic, which have large proportions of the EHR market share, do not have structured fields for Developmental Screening Follow-up Referral Tracking to indicate that information was received from follow-up providers.

This measure can be constructed in the eClinicalWorks EHR system and in several practices in Pennsylvania and North Carolina based on EHR systems customized through a CHIPRA State demonstration grant. The construction of this measure was tested as an eMeasure in the EHR system of Ashe Pediatrics, and while there are structured queriable fields (technically feasible) in the EHR, the fields are not used by clinicians. Therefore, this eMeasure did not pass

implementation feasibility and cannot be constructed at this time. Other large progressive practices with EHR systems are customizing their systems to make this measure constructible in their systems. We have also provided feedback to the pediatric EHR developers on elements for inclusion needed to construct this measure.

Another limitation of this measure, even in sites with EHR systems with structured referral tracking fields, is the fragmented complexity of the health care system, which makes it difficult to communicate across care settings to track a patient's care. It is even more complicated for developmental screening follow-up referral tracking, as many of the referrals could be to non-medical providers, such as early intervention or parent education or support groups, that do not mandate communication with a child's pediatrician as part of their mission and role.

State Medicaid and Chip programs currently do not have repositories built to receive and store this type of measure information; however, quality representatives at several State Medicaid and CHIP programs have confirmed that having eMeasures specified for important quality measures that cannot be assessed through administrative claims is very important in order to inform the development of such repositories.

Section 13. Summary Statement

Provide a summary rationale for why the measure should be selected for use, taking into account a balance among desirable attributes and limitations of the measure. Highlight specific advantages that this measure has over alternative measures on the same topic that were considered by the measure developer or specific advantages that this measure has over existing measures. If there is any information about this measure that is important for the review process but has not been addressed above, include it here.

Background

In 2009, Congress passed Public Law 111-3, the Children's Health Insurance Program Reauthorization Act (CHIPRA), an unprecedented opportunity to measure and improve health care quality and outcomes for children. As part of this law, the CHIPRA Pediatric Quality Measures Program (PQMP) was developed to establish a set of measures to effectively assess the quality of pediatric care. An Initial Core Set of 25 pediatric measures was developed and recommended for use. The Pediatric Measurement Center of Excellence (PMCoE) was funded by AHRQ and assigned to develop Developmental Screening Follow-up (DSF) quality measures.

Importance

Lack of care coordination in the context of a positive developmental screen leads to delay in approximately half of Early Intervention (EI) referred children reaching agencies or alternative community resources (Macy, Marks, Towle, 2013). An estimated one-half to one-third of young children diagnosed with behavioral or developmental concerns through screening fail to receive evaluations or services addressing these issues. This is particularly striking as the same study found that in the long-term, the cost-effectiveness of developmental screening is only realized when young children with delays receive needed services in a timely manner (Jennings, Hanline, 2013). Early identification and treatment of children with developmental and behavioral

problems are critical to their well-being and development (Boyle, Boulet, Schieve, et al., 2011). The number one recommendation of the Robert Wood Johnson Foundation Commission to Build a Healthier America was to "make investing in America's youngest children a high priority" to "build a strong foundation in the early years for a lifetime of good health (Robert Wood Johnson Foundation, 2014)."

Measure Development

A quality measure that can be used to assess and monitor whether a practice regularly tracks provided referrals to ensure the child has received the follow-up evaluation or treatment, a critical and fundamental aspect of pediatric care quality, is necessary in order to improve pediatric care quality. A framework for DSF quality measurement was proposed by the PMCoE, modeled on Bright Futures and on pediatric quality measurement work done in North Carolina and Pennsylvania. This framework included a three-measure set: one, Follow-up with Patient's Family after Developmental Screen; two, Follow-up Referral after Positive Developmental Screen; and three, Follow-up Referral Tracking. This measure framework was reviewed, enhanced, and refined by a DSF Expert Workgroup (Attachment 13.1, Expert Workgroup Materials). A broad range of stakeholders (N=108) reviewed and commented on the measures across a public comment period. The measures were considered Important, Valid, and Clinically Relevant. Based on the comments, the measures were refined by the Expert Workgroup and finalized for testing (Attachment 13.2, Finalized DSF Measure Worksheets).

Measure Testing

Feasibility. Feasibility testing for construction as an eMeasure was performed in the CPQSC, and it was determined that the measure was not able to be constructed as an eMeasure in any of the five sites where it was tested. A national search was performed to identify sites that could test the measures as eMeasures. It was determined feasible to construct the measure in the EHRs of CHOP and in Ashe Pediatrics (with workflow modifications), one practice in a statewide network of practices that had customized their eClinicalWorks system with an electronic DSF module.

Reliability. Manual chart abstraction was used to assess the reliability of the measure. Across four sites where reliability testing was performed, the agreement was 61 percent, and kappa was 0.57. Agreement and kappa were limited by the small number of chart sites we were able to identify that met the denominator criteria.

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Section 14: Identifying Information for the Measure Submitter

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The CHIPRA Pediatric Quality Measures Program (PQMP) Candidate Measure Submission Form (CPCF) was approved by the Office of Management and Budget (OMB) in accordance with the Paperwork Reduction Act.

The OMB Control Number is 0935-0205 and the Expiration Date is December 31, 2015.

Public Disclosure Requirements

Each submission must include a written statement agreeing that, should U.S. Department of Health and Human Services accept the measure for the 2014 and/or 2015 Improved Core Measure Sets, full measure specifications for the accepted measure will be subject to public disclosure (e.g., on the Agency for Healthcare Research and Quality [AHRQ] and/or Centers for Medicare & Medicaid Services [CMS] websites), except that potential measure users will not be permitted to use the measure for commercial use. In addition, AHRQ expects that measures and full measure specifications will be made reasonably available to all interested parties. "Full measure specifications" is defined as all information that any potential measure implementer will need to use and analyze the measure, including use and analysis within an electronic health record or other health information technology. As used herein, "commercial use" refers to any sale, license or distribution of a measure for commercial gain, or incorporation of a measure into any product or service that is sold, licensed or distributed for commercial gain, even if there is no actual charge for inclusion of the measure. This statement must be signed by an individual authorized to act for any holder of copyright on each submitted measure or instrument. The authority of the signatory to provide such authorization should be described in the letter.

The signed written statement was submitted.

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