NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1354 **NQF Project:** Child Health Quality Measures 2010

MEASURE DESCRIPTIVE INFORMATION

De.1 Measure Title: Hearing screening prior to hospital discharge (EHDI-1a)

De.2 Brief description of measure*:* This measure assesses the proportion of births that have been screened for hearing loss before hospital discharge.

*Numbering within the parentheses references the US national extension quality measure identifiers developed for the Use Cases published in the Integrating the Healthcare Enterprise (IHE) Quality, Research and Public Health (QRPH) EHDI Technical Framework Supplement available at www.ihe.net/Technical_Framework/index.cfm#quality

1.1-2 Type of Measure: Process
De.3 If included in a composite or paired with another measure, please identify composite or paired measure
This measure is paired with other measures relevant to the monitoring and measurement of the early screening evaluation and intervention process.

De.4 National Priority Partners Priority Area: Population health
De.5 IOM Quality Domain: Effectiveness
De.6 Consumer Care Need: Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1 Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes **A.2 Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:**	**A** **Y☐** **N☐**

A.3 Measure Steward Agreement: Government entity and in the public domain - no agreement necessary **A.4 Measure Steward Agreement attached:**	
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** **Y**☐ **N**☐
C. The intended use of the measure includes <u>both</u> public reporting <u>and</u> quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	**C** **Y**☐ **N**☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. **D.1Testing:** Yes, fully developed and tested **D.2 Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** **Y**☐ **N**☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** **Y**☐ **N**☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Frequently performed procedure **1a.2** **1a.3 Summary of Evidence of High Impact:** U.S. Preventive Services Task Force. The USPSTF recommends screening for hearing loss in all newborn infants. There is good evidence that newborn hearing screening testing is highly accurate and leads to earlier identification and treatment of infants with hearing loss. Good-quality evidence shows that early detection improves language outcomes. http://www.uspreventiveservicestaskforce.org/uspstf08/newbornhear/newbhearrs.pdf **1a.4 Citations for Evidence of High Impact:** Nelson HD, Bougatsos C, Nygren P. Universal Newborn Hearing Screening: Systematic Review to Update the 2001 U.S. Preventive Services Task Force Recommendation. AHRQ Publication No. 08-05117-EF-4, July 2008. Agency for Healthcare Research and Quality (AHRQ), Rockville, MD. http://www.ahrq.gov/clinic/uspstf08/newbornhear/newbornart.htm	**1a** **C**☐ **P**☐ **M**☐ **N**☐
1b. Opportunity for Improvement	**1b** **C**☐

1b.1 Benefits (improvements in quality) envisioned by use of this measure: From page 194 of the 2007 Joint Committee on Infant Hearing (JCIH) Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs(http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals)
"The JCIH supports the concept of regular measurements of performance and recommends routine monitoring of these measures for interprogram comparison and continuous quality improvement. Performance benchmarks represent a consensus of expert opinion in the field of newborn hearing screening and intervention. The benchmarks are the minimal requirements that should be attained by high quality programs. Frequent measures of quality permit prompt recognition and correction of any unstable component of the EHDI process."

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
http://www.cdc.gov/ncbddd/ehdi/data.htm

1b.3 Citations for data on performance gap:
"Identifying Infants with Hearing Loss --- United States, 1999—2007." CDC Morbidity and Mortality Weekly Report (MMWR). March 5, 2010 / 59(08);220-223.
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5908a2.htm
"Newborn hearing screening and follow-up: are children receiving recommended services?" Public Health Rep. 2010 Mar-Apr;125(2):199-207.

1b.4 Summary of Data on disparities by population group:
Births occurring in small and rural birthing facilities are more likely not to receive inpatient hearing screening.

1b.5 Citations for data on Disparities:
Some state statutes (e.g. Texas and Kentucky) exempt hospitals with small birth cohorts from requiring hearing screening for all infants.

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1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Children with hearing loss who are screened for hearing loss at birth have better language outcomes at school age than those not screened. Infants identified with hearing loss through universal screening have significantly earlier referral, diagnosis, and treatment than those identified in other ways. Language outcomes at school age strengthen the case for newborn hearing screening but are also dependent on effective methods of referral, follow-up, and treatment.

1c.2-3. Type of Evidence: Cohort study, Observational study, Evidence-based guideline, Expert opinion, Systematic synthesis of research

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
U.S. Preventive Services Task Force (www.ahrq.gov/clinic/uspstf/uspsnbhr.htm)
Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921
(http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals)

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
Grade: B (Recommendation by the USPSTF recommends screening for hearing loss in all newborn infants.)

1c.6 Method for rating evidence: Scientific evidence review conducted by the Oregon Evidence-based Practice Center under contract to the Agency for Healthcare Research and Quality

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1c.7 Summary of Controversy/Contradictory Evidence: There is limited evidence about the harms of screening, with conflicting research findings regarding anxiety associated with false-positive test results. There is limited information about the harms of treatment. **1c.8 Citations for Evidence (***other than guidelines***):** **1c.9 Quote the Specific guideline recommendation (***including guideline number and/or page number***):** "All infants should have access to hearing screening using a physiologic measure at no later than 1 month of age." Page 900. Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. **1c.10 Clinical Practice Guideline Citation:** Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921 (http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals) **1c.11 National Guideline Clearinghouse or other URL:** Newborn Screening Coding and Terminology Guide. http://newbornscreeningcodes.nlm.nih.gov/nb/sc/condition/HEAR **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** Grade: B (Recommendation by the USPSTF recommends screening for hearing loss in all newborn infants.) **1c.13 Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:** **1c.14 Rationale for using this guideline over others:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Numerator contains all live births during the measurement time period born at a facility and screened for hearing loss prior to discharge. **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator.	**2a-specs** **C☐** **P☐** **M☐** **N☐**

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
Total number with "Hearing Screening Performed": evidence of hearing screening performed. (LOINC# 54109-4: Newborn hearing screen – right = Pass LA10392-1 OR Refer LA10393-9 AND LOINC# 54108-6: Newborn hearing screen – left= Pass LA10392-1 OR Refer LA10393-9) before discharge

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
All live births during the measurement time period born at a facility and discharged without being screened OR screened prior to discharge.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Newborn period

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
The time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Total number of newborns discharged. Joint Commission National Quality Core Measures - Discharge Status OR
with "Hearing Screening Performed": evidence of hearing screening performed. (LOINC# 54109-4: Newborn hearing screen – right = Pass LA10392-1 OR Refer LA10393-9 AND LOINC# 54108-6: Newborn hearing screen – left= Pass LA10392-1 OR Refer LA10393-9)

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Patient deceased prior to discharge and without being screened, parental refusal, or not performed due to medical exclusion.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Joint Commission Discharge Disposition - Death Value Set (86986.v1) 1.3.6.1.4.1.33895.1.3.0.12. "Patient Deceased": Patient has expired.
LOINC# 54109-4: Newborn hearing screen – right OR LOINC# 54108-6: Newborn hearing screen – left includes “Parental refusal” (LA6644-4) OR Not performed, medical exclusion - not indicated (LA12409-1)

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
(1) The time period for births included in the estimate is specified (see 2a.2, 2a.7).
(2) All live births that occurred at a facility during the time period are selected.
(3) Result of step 2 is filtered to remove children who died prior to discharge and without being screened, whose parent(s) refused, or children who were not screened due to medical reasons (see 2a.9, 2a.10). This result is saved

The numerator is calculated using the following step:
(4) Result of step 3 is filtered to be limited to the subset that received a screen (see 2a.3) prior to

discharge. This subset would include babies that have been screened, but are not yet discharged. This result is saved as the numerator (see 2a.1).

The denominator is calculated using the following steps:
(5) Result of step 3 is filtered to be limited to the subset that (a) has been discharged, AND (b) did not receive a screen (see 2a.8). This result is saved.
(6) Result of step 4 (i.e., the numerator) is added to the result of step 5. This result is saved as the denominator (see 2a.4).

EHDI-1a is calculated using the following step:
(7) EHDI-1a is calculated by dividing the numerator (result of step 4) by the denominator (result of step 6).

2a.22 Describe the method for discriminating performance *(e.g., significance testing)*:
Method to discriminate performance is based upon jurisdictionally based statistical measurement reflecting local and national variability.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
not applicable

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Public health data/vital statistics, Electronic Health/Medical Record, Registry data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
Electronic Health/Medical Record, Public health information system

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
www.hitsp.org AND www.ihe.net/Technical_Framework/index.cfm#quality AND www.cdc.gov/ncbddd/ehdi/data.htm

2a.29-31 Data dictionary/code table web page URL or attachment: URL
http://newbornscreeningcodes.nlm.nih.gov AND www.hitsp.org AND www.ihe.net/Technical_Framework/index.cfm#quality

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Individual, Facility/Agency, Population: national, Population: states

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Hospital

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Audiologist, Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO), Clinicians: PT/OT/Speech

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)*: Data used in this measure are included in the EHR. As noted in the NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties, "…the EHR will be considered the authoritative source of clinical information and legal record of care. Quality measures based on EHRs require exporting clinical information recorded by healthcare clinicians from discrete computer readable fields; therefore, measurement errors due to manual abstraction, coding by persons other than the originator, or transcription are eliminated."
As these data elements are extracted from EHRs using computer programming, they "are by virtue of automation repeatable (reliable); therefore, testing at the data element level should focus on validity… reliability of data items may be bypassed if validity of data items is demonstrated."
EHR data used in this measure reflect part of a national, population-based public health surveillance data

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collection. Data are collected at the individual-child level within each state/territory and reported nationally at an aggregated state-level to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and 2 territories reported newborn hearing screening data on a total of 3,345,629 births.

2b.2 **Analytic Method** *(type of reliability & rationale, method for testing)*:
As noted in 2b.1., given data are extracted from EHRs, "reliability of data items may be bypassed if validity of data items is demonstrated". (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties)

2b.3 **Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
While the use of EHRs for data elements reflects a particular strength of this measure, "EHRs and EHR measures are new and will most likely require some adjustment of local EHR structures and recording practices to meet standards." (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This has been and will continue to be addressed in the manner recommended in the Guidance document cited above. First, nationally, CDC EHDI has and will continue to provide states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are and will continue to be encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Second, state EHDI programs have been and will continue to be encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.

2c. Validity testing

2c.1 **Data/sample** *(description of data/sample and size)*: Data used in this measure reflect EHR extracted information that is part of a national, population-based public health surveillance data collection. Data are collected at the individual-child level within each state/territory, and reported at state-level aggregate form nationally to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and 2 territories reported newborn hearing screening data on a total of 3,345,629 births.

2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*:
A formal and systematic testing of face validity of the measure score as an indicator of quality has been conducted in order to serve as an acceptable indicator for validity of the measure score (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This evaluation has been conducted through the Joint Committee on Infant Hearing (JCIH), the Directors of Speech and Hearing Programs in State Health and Welfare Agencies (DSHPSHWA) and the CDC EHDI Data Committee.

2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
Face validity has been systematically assessed by relevant stakeholders in order to assess whether the measure represents quality care for this specific topic and whether the focus of this measure is the most important aspect of quality for this specific topic (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties).

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2d. Exclusions Justified

2d.1 **Summary of Evidence supporting exclusion(s):**
Not applicable –exclusions are limited to cases of infant death prior to discharge and without being screened, parental refusal, or medical exclusion.

2d.2 **Citations for Evidence:**
Not applicable – see 2d.1.

2d.3 **Data/sample** *(description of data/sample and size)*: Not applicable – see 2d.1.

2d.4 **Analytic Method** *(type analysis & rationale)*:

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Not applicable – see 2d.1. 2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: Not applicable – see 2d.1.	
2e. Risk Adjustment for Outcomes/ Resource Use Measures 2e.1 **Data/sample** *(description of data/sample and size)*: Not applicable – no risk adjustment is included 2e.2 **Analytic Method** *(type of risk adjustment, analysis, & rationale)*: Not applicable – no risk adjustment is included 2e.3 **Testing Results** *(risk model performance metrics)*: Not applicable – no risk adjustment is included 2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:** Not applicable – no risk adjustment is included	**2e** C☐ P☐ M☐ N☐ NA☐
2f. Identification of Meaningful Differences in Performance 2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: National, population-based public health surveillance data, collected at the individual-child level within each state/territory, and reported at state-level aggregate form nationally to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and 2 territories reported newborn hearing screening data on a total of 3,345,629 births. 2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Statistical analysis comparing individual entities (provider, network of providers, state/territory) to the mean level of performance for similar entities. When appropriate, this can be limited to similar entities within a given jurisdiction (e.g., performance of a specific provider relative to other providers in a state) or nationally (e.g., mean performance across an entire state relative to other state/territories). In addition, performance can be evaluated through direct comparison to current national standards of performance (e.g., CDC National Goals, Joint Committee on Infant Hearing,Healthy People 2020.) 2f.3 **Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: For statistical analyses comparing individual entities to the mean level of performance for similar entities, performance that is 2 standard deviations below the corresponding mean can be flagged. When appropriate, this can be done both within a given jurisdiction and nationally. For example, overall performance for a low performing state may be more than 2 standard deviations below the mean for all states/territories, resulting in that state being identified. However, within that state, there may be no significant difference among providers (i.e., all are performing equally poorly). For direct comparisons to current national standards, identification will consist of (1) a determination that performance falls below the standard, and (2) a measure of the difference between observed performance and the stated standard.	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods 2g.1 **Data/sample** *(description of data/sample and size)*: All data will be collected through Electronic Health Records – not applicable 2g.2 **Analytic Method** *(type of analysis & rationale)*: All data will be collected through Electronic Health Records – not applicable 2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*: All data will be collected through Electronic Health Records – not applicable	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care	**2h**

2h.1 If measure is stratified, provide stratified results *(scores by stratified categories/cohorts)*: Not applicable – measure is not stratified **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** Follow-up analysis can be performed at state and national levels based upon disparities noted in 1b.4 / 1b.5	**C☐ P☐ M☐ N☐ NA☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* **C☐ P☐ M☐ N☐**
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** In use **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:** Healthy People 2010 objective 28-11: Increase the proportion of newborns who are screened for hearing loss by age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months. Proposed Healthy People 2020 ENT-VSL HP2020–8: Increase the proportion of newborns who are screened for hearing loss by no later than age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months. CDC Early Hearing Detection and Intervention (EHDI) Screening and Follow-up Survey (OMB No. 0920-0733) http://www.cdc.gov/ncbddd/ehdi/documents/EHDI_Web_Draft_Survey_12_06.pdf HRSA Title V Block Grant MCHB National Performance Measure #12: Percentage of newborns who have been screened for hearing before hospital discharge. https://perfdata.hrsa.gov/mchb/TVISReports/MeasurementData/MeasurementDataMenu.aspx **3a.3 If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** HRSA Title V Block Grant MCHB National Performance Measure #12: Percentage of newborns who have been screened for hearing before hospital discharge. https://perfdata.hrsa.gov/mchb/TVISReports/MeasurementData/MeasurementDataMenu.aspx **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) **3a.4 Data/sample** *(description of data/sample and size)***:** CDC Survey (http://www.cdc.gov/ncbddd/ehdi/data.htm) Summary of 2007 National CDC EHDI Data: Number Screened = 3,345,629 **3a.5 Methods** *(e.g., focus group, survey, QI project)***:** Hearing Screening and Follow-up Survey (HSFS): OMB No. 0920-0733	**3a** **C☐ P☐ M☐ N☐**

3a.6 **Results** *(qualitative and/or quantitative results and conclusions)*: Quantitative: "Identifying Infants with Hearing Loss --- United States, 1999—2007." CDC Morbidity and Mortality Weekly Report (MMWR). March 5, 2010 / 59(08);220-223. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5908a2.htm	
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:** no current NQF endorsed measure	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?** The Centers for Disease Control and Prevention (CDC), the HRSA Maternal and Child Health Bureau (MCHB) and the National Committee for Quality Assurance (NCQA) have submitted 2010 Child Health Quality Measures to NQF that relate to the topic of newborn screening, however the measures target different care settings and data sources. CDC, MCHB, and NCQA are collaborating to ensure the measure specifications have distinctive additive value and are harmonized.	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry), Survey	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐
4c. Exclusions	**4c**

4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications? No **4c.2 If yes, provide justification.**	**C☐ P☐ M☐ N☐ NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences **4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** The use of EHRs for this measure provide a number of strengths that facilitate data quality, including EHRs serving as the authoritative source of clinical information and legal record of care. Furthermore, the use of discrete, computer readable fields results in reduced measurement error that may emerge from manual abstraction, third party coding, or transcription errors. Nevertheless, potential sources of error exist and include incorrect measure, code, or logic specification, as well as incorrect programming, system structure, or data exporting code, or inconsistent field definitions across providers or users. These can be audited through quality control measures. For example, CDC EHDI provides states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Furthermore, state EHDI programs are encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.	**4d** **C☐ P☐ M☐ N☐**
4e. Data Collection Strategy/Implementation **4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Requires an accurate standardized denominator and numerator to successfully determine that all infants have been accounted for and received necessary care. The limitation has been that providers have only reported on a subset of infants seen. **4e.2 Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Hearing screening prior to hospital discharge is not a proprietary measure. Public health EHDI programs have already assumed the cost to implement and report this measure. Federal funds have been provided to public health programs for this data collection. **4e.3 Evidence for costs:** **4e.4 Business case documentation:**	**4e** **C☐ P☐ M☐ N☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** **C☐ P☐ M☐ N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐ N☐**

A☐

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333

Co.2 Point of Contact
John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-

Measure Developer If different from Measure Steward
Co.3 Organization
Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333

Co.4 Point of Contact
Craig, Mason, Ph.D., Craig_Mason@umit.maine.edu, 207-581-9059-

Co.5 Submitter If different from Measure Steward POC
John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-, Centers for Disease Control and Prevention

Co.6 Additional organizations that sponsored/participated in measure development
On July 24, the Joint Committee on Infant Hearing (JCIH) voted unanimously to proceed with the submission these EHDI measures to NQF. Liaison representatives were present from all of the participating organizations: American Academy of Pediatrics (AAP), American Academy of Audiology (AAA), American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS), American Speech-Language-Hearing Association (ASHA), Alexander Graham Bell Association for the Deaf and Hard of Hearing, Council of Education of the Deaf (CED), and Directors of Speech and Hearing Programs in State Health and Welfare
Agencies (DSHPSHWA).

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
CDC EHDI Data Committee and the Joint Committee on Infant Hearing (JCIH) both participated in the development of EHDI quality benchmarks on which this measure is based.

Ad.2 If adapted, provide name of original measure:
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 2000
Ad.7 Month and Year of most recent revision: 10, 2007
Ad.8 What is your frequency for review/update of this measure?
Ad.9 When is the next scheduled review/update for this measure?

Ad.10 Copyright statement/disclaimers:

Ad.11 -13 Additional Information web page URL or attachment: URL http://jcih.org/posstatemts.htm

Date of Submission (*MM/DD/YY*)**:** 08/30/2010

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1356 **NQF Project:** Child Health Quality Measures 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 Measure Title: Hearing Screening refer rate at hospital discharge (EHDI-1b)
De.2 Brief description of measure*:* This measure assesses the proportion of all newborn infants who fail initial screening and fail any subsequent re-screening before hospital discharge. *Numbering within the parentheses references the US national extension quality measure identifiers developed for the Use Cases published in the Integrating the Healthcare Enterprise (IHE) Quality, Research and Public Health (QRPH) EHDI Technical Framework Supplement available at www.ihe.net/Technical_Framework/index.cfm#quality
1.1-2 Type of Measure: Process **De.3 If included in a composite or paired with another measure, please identify composite or paired measure** This measure is paired with other measures relevant to the monitoring and measurement of the early screening evaluation and intervention process.
De.4 National Priority Partners Priority Area: Population health **De.5 IOM Quality Domain**: Effectiveness **De.6 Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1 Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes **A.2 Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:**	**A** **Y☐** **N☐**

A.3 Measure Steward Agreement: Government entity and in the public domain - no agreement necessary **A.4 Measure Steward Agreement attached:**	
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes <u>both</u> public reporting <u>and</u> quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. **D.1Testing:** No, testing will be completed within 12 months **D.2 Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Frequently performed procedure **1a.2** **1a.3 Summary of Evidence of High Impact:** U.S. Preventive Services Task Force. The USPSTF recommends screening for hearing loss in all newborn infants. There is good evidence that newborn hearing screening testing is highly accurate and leads to earlier identification and treatment of infants with hearing loss. Good-quality evidence shows that early detection improves language outcomes. http://www.uspreventiveservicestaskforce.org/uspstf08/newbornhear/newbhearrs.pdf **1a.4 Citations for Evidence of High Impact:** Nelson HD, Bougatsos C, Nygren P. Universal Newborn Hearing Screening: Systematic Review to Update the 2001 U.S. Preventive Services Task Force Recommendation. AHRQ Publication No. 08-05117-EF-4, July 2008. Agency for Healthcare Research and Quality (AHRQ), Rockville, MD.	**1a** C☐ P☐ M☐ N☐
1b. Opportunity for Improvement	**1b** C☐

1b.1 Benefits (improvements in quality) envisioned by use of this measure: From page 194 of the 2007 Joint Committee on Infant Hearing (JCIH) Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs(http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals)
"The JCIH supports the concept of regular measurements of performance and recommends routine monitoring of these measures for interprogram comparison and continuous quality improvement. Performance benchmarks represent a consensus of expert opinion in the field of newborn hearing screening and intervention. The benchmarks are the minimal requirements that should be attained by high quality programs. Frequent measures of quality permit prompt recognition and correction of any unstable component of the EHDI process."

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
http://www.cdc.gov/ncbddd/ehdi/data.htm

1b.3 Citations for data on performance gap:
"Identifying Infants with Hearing Loss --- United States, 1999—2007." CDC Morbidity and Mortality Weekly Report (MMWR). March 5, 2010 / 59(08);220-223.
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5908a2.htm
"Newborn hearing screening and follow-up: are children receiving recommended services?" Public Health Rep. 2010 Mar-Apr;125(2):199-207.

1b.4 Summary of Data on disparities by population group:
Births occurring in small and rural birthing facilities are more likely not to receive inpatient hearing screening.

1b.5 Citations for data on Disparities:
Some state statutes (e.g. Texas and Kentucky) exempt hospitals with small birth cohorts from requiring hearing screening for all infants.

P☐ M☐ N☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Children with hearing loss who are screened for hearing loss at birth have better language outcomes at school age than those not screened. Infants identified with hearing loss through universal screening have significantly earlier referral, diagnosis, and treatment than those identified in other ways. Language outcomes at school age strengthen the case for newborn hearing screening but are also dependent on effective methods of referral, follow-up, and treatment.

1c.2-3. Type of Evidence: Cohort study, Observational study, Evidence-based guideline, Expert opinion, Systematic synthesis of research

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
U.S. Preventive Services Task Force (www.ahrq.gov/clinic/uspstf/uspsnbhr.htm)
Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921
(http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals)

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
Grade: B (Recommendation by the USPSTF recommends screening for hearing loss in all newborn infants.)

1c.6 Method for rating evidence: Scientific evidence review conducted by the Oregon Evidence-based Practice Center under contract to the Agency for Healthcare Research and Quality

1c
C☐ P☐ M☐ N☐

1c.7 Summary of Controversy/Contradictory Evidence: There is limited evidence about the harms of screening, with conflicting research findings regarding anxiety associated with false-positive test results. There is limited information about the harms of treatment **1c.8 Citations for Evidence (***other than guidelines***):** **1c.9 Quote the Specific guideline recommendation (***including guideline number and/or page number***):** **1c.10 Clinical Practice Guideline Citation:** Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921 (http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals) **1c.11 National Guideline Clearinghouse or other URL:** Newborn Screening Coding and Terminology Guide. http://newbornscreeningcodes.nlm.nih.gov/nb/sc/condition/HEAR **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** **1c.13 Method for rating strength of recommendation** (*If different from* USPSTF system, *also describe rating and how it relates to USPSTF)***:** **1c.14 Rationale for using this guideline over others:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Numerator contains the number of infants born at a given facility during the time window who have not passed ("Fail / Refer") hearing screening before hospital discharge. **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator. **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**	**2a-specs** **C☐** **P☐** **M☐** **N☐**

Total number with final hearing screening results indicating "Fail / Refer" prior to hospital discharge. (LOINC# 54109-4: Newborn hearing screen – right = Refer LA10393-9 OR LOINC# 54108-6: Newborn hearing screen – left= Refer LA10393-9)

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Denominator contains the total number of infants born at a given facility during the time window successfully screened for hearing loss before hospital discharge.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Newborn period

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Total number with "Hearing Screening Performed": evidence of hearing screening performed. (LOINC# 54109-4: Newborn hearing screen – right = Pass LA10392-1 OR Refer LA10393-9 AND LOINC# 54108-6: Newborn hearing screen – left= Pass LA10392-1 OR Refer LA10393-9)

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Patient deceased: Patient has expired prior to discharge.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Joint Commission Discharge Disposition - Death Value Set (86986.v1) 1.3.6.1.4.1.33895.1.3.0.12.

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Score within a defined interval
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
(1) The time period for births included in the estimate is specified (see 2a.2, 2a.7).
(2) All live births that occurred at a facility during the time period are selected.
(3) Result of step 2 is filtered to remove children who died prior to discharge (see 2a.9, 2a.10).

The denominator is calculated using the following step:
(4) Result of step 3 is filtered to be limited to the subset that has been discharged from the hospital AND were screened prior to discharge (see 2a.8). This result is saved as the denominator (see 2a.4).

The numerator is calculated using the following step:
(5) Result of step 4 is further filtered to be limited to the subset that received a “refer” for their final screen prior to discharge (see 2a.3). This result is saved as the numerator (see 2a.1).

EHDI-1b is calculated using the following step:
(6) EHDI-1b is calculated by dividing the numerator (result of step 5) by the denominator (result of step 4).

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**

Method to discriminate performance is based upon jurisdictionally based statistical measurement reflecting local and national variability.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic clinical data, Public health data/vital statistics, Electronic Health/Medical Record, Registry data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
Electronic Health/Medical Record, Public health information system

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
www.hitsp.org AND www.ihe.net/Technical_Framework/index.cfm#quality AND
www.cdc.gov/ncbddd/ehdi/data.htm

2a.29-31 Data dictionary/code table web page URL or attachment: URL
http://newbornscreeningcodes.nlm.nih.gov AND www.hitsp.org AND
www.ihe.net/Technical_Framework/index.cfm#quality

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Individual, Facility/Agency, Population: national, Population: states

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Hospital

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Audiologist, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO), Clinicians: PT/OT/Speech

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** Data used in this measure are included in the EHR. As noted in the NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties, "…the EHR will be considered the authoritative source of clinical information and legal record of care. Quality measures based on EHRs require exporting clinical information recorded by healthcare clinicians from discrete computer readable fields; therefore, measurement errors due to manual abstraction, coding by persons other than the originator, or transcription are eliminated."
As these data elements are extracted from EHRs using computer programming, they "are by virtue of automation repeatable (reliable); therefore, testing at the data element level should focus on validity… reliability of data items may be bypassed if validity of data items is demonstrated."
EHR data used in this measure reflect part of a national, population-based public health surveillance data collection. Data are collected at the individual-child level within each state/territory and reported nationally at an aggregated state-level to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and 2 territories reported newborn hearing screening data on a total of 3,345,629 births.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
As noted in 2b.1., given data are extracted from EHRs, "reliability of data items may be bypassed if validity of data items is demonstrated". (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties)

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
While the use of EHRs for data elements reflects a particular strength of this measure, "EHRs and EHR

2b
C ☐
P ☐
M ☐
N ☐

measures are new and will most likely require some adjustment of local EHR structures and recording practices to meet standards." (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This has been and will continue to be addressed in the manner recommended in the Guidance document cited above. First, nationally, CDC EHDI has and will continue to provide states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are and will continue to be encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Second, state EHDI programs have been and will continue to be encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.	
2c. Validity testing 2c.1 **Data/sample** *(description of data/sample and size)*: Data used in this measure reflect EHR extracted information that is part of a national, population-based public health surveillance data collection. Data are collected at the individual-child level within each state/territory, and reported at state-level aggregate form nationally to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and 2 territories reported newborn hearing screening data on a total of 3,345,629 births. 2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*: A formal and systematic testing of face validity of the measure score as an indicator of quality has been conducted in order to serve as an acceptable indicator for validity of the measure score (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This evaluation has been conducted through the CDC EHDI Data Committee. 2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*: Face validity has been systematically assessed by relevant stakeholders in order to assess whether the measure represents quality care for this specific topic and whether the focus of this measure is the most important aspect of quality for this specific topic (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties).	**2c** C☐ P☐ M☐ N☐
2d. Exclusions Justified 2d.1 **Summary of Evidence supporting exclusion(s):** Not applicable – exclusions are limited to cases of infant death prior to discharge. 2d.2 **Citations for Evidence:** Not applicable – see 2d.1. 2d.3 **Data/sample** *(description of data/sample and size)*: Not applicable – see 2d.1. 2d.4 **Analytic Method** *(type analysis & rationale)*: Not applicable – see 2d.1. 2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: Not applicable – see 2d.1.	**2d** C☐ P☐ M☐ N☐ NA☐
2e. Risk Adjustment for Outcomes/ Resource Use Measures 2e.1 **Data/sample** *(description of data/sample and size)*: Not applicable – no risk adjustment is included 2e.2 **Analytic Method** *(type of risk adjustment, analysis, & rationale)*: Not applicable – no risk adjustment is included 2e.3 **Testing Results** *(risk model performance metrics)*: Not applicable – no risk adjustment is included 2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:** Not applicable – no risk	**2e** C☐ P☐ M☐ N☐ NA☐

adjustment is included	
2f. Identification of Meaningful Differences in Performance 2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: National, population-based public health surveillance data, collected at the individual-child level within each state/territory, and reported at state-level aggregate form nationally to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and 2 territories reported newborn hearing screening data on a total of 3,345,629 births. 2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Statistical analysis comparing individual entities (provider, network of providers, state/territory) to the mean level of performance for similar entities. When appropriate, this can be limited to similar entities within a given jurisdiction (e.g., performance of a specific provider relative to other providers in a state) or nationally (e.g., mean performance across an entire state relative to other state/territories). In addition, performance can be evaluated through direct comparison to current national standards of performance (e.g., CDC National Goals, Joint Committee on Infant Hearing,Healthy People 2020.) 2f.3 **Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: For statistical analyses comparing individual entities to the mean level of performance for similar entities, performance that is 2 standard deviations below the corresponding mean can be flagged. When appropriate, this can be done both within a given jurisdiction and nationally. For example, overall performance for a low performing state may be more than 2 standard deviations below the mean for all states/territories, resulting in that state being identified. However, within that state, there may be no significant difference among providers (i.e., all are performing equally poorly). For direct comparisons to current national standards, identification will consist of (1) a determination that performance falls below the standard, and (2) a measure of the difference between observed performance and the stated standard.	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods 2g.1 **Data/sample** *(description of data/sample and size)*: All data will be collected through Electronic Health Records – not applicable 2g.2 **Analytic Method** *(type of analysis & rationale)*: All data will be collected through Electronic Health Records – not applicable 2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*: All data will be collected through Electronic Health Records – not applicable	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care 2h.**1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: Not applicable – measure is not stratified 2h.2 **If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** Follow-up analysis can be performed at state and national levels based upon disparities noted in 1b.4 / 1b.5	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties*?	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐
3. USABILITY	

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information 3a.1 **Current Use:** In use 3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:** Healthy People 2010 objective 28-11: Increase the proportion of newborns who are screened for hearing loss by age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months. Proposed Healthy People 2020 ENT-VSL HP2020-8: Increase the proportion of newborns who are screened for hearing loss by no later than age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months. 3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) 3a.4 **Data/sample** *(description of data/sample and size)***:** CDC Survey (http://www.cdc.gov/ncbddd/ehdi/data.htm) Summary of 2007 National CDC EHDI Data: Number Screened = 3,345,629 3a.5 **Methods** *(e.g., focus group, survey, QI project)***:** Hearing Screening and Follow-up Survey (HSFS): OMB No. 0920-0733 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)***:** Qualitative: "Identifying Infants with Hearing Loss --- United States, 1999—2007." CDC Morbidity and Mortality Weekly Report (MMWR). March 5, 2010 / 59(08);220-223. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5908a2.htm	**3a** **C**☐ **P**☐ **M**☐ **N**☐
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:** no current NQF endorsed measure	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?** The Centers for Disease Control and Prevention (CDC), the HRSA Maternal and Child Health Bureau (MCHB) and the National Committee for Quality Assurance (NCQA) have submitted 2010 Child Health Quality Measures to NQF that relate to the topic of newborn screening, however the measures target different care settings and data sources. CDC, MCHB, and NCQA are collaborating to ensure the measure specifications have distinctive additive value and are harmonized.	**3b** **C**☐ **P**☐ **M**☐ **N**☐ **NA**☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the**	**3c** **C**☐ **P**☐ **M**☐ **N**☐ **NA**☐

same target population), Describe why it is a more valid or efficient way to measure quality:	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** **C☐** **P☐** **M☐** **N☐**
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** **C☐** **P☐** **M☐** **N☐**
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** **C☐** **P☐** **M☐** **N☐**
4c. Exclusions **4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No **4c.2 If yes, provide justification.**	**4c** **C☐** **P☐** **M☐** **N☐** **NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences **4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** The use of EHRs for this measure provide a number of strengths that facilitate data quality, including EHRs serving as the authoritative source of clinical information and legal record of care. Furthermore, the use of discrete, computer readable fields results in reduced measurement error that may emerge from manual abstraction, third party coding, or transcription errors. Nevertheless, potential sources of error exist and include incorrect measure, code, or logic specification, as well as incorrect programming, system structure, or data exporting code, or inconsistent field definitions across providers or users. These can be audited through quality control measures. For example, CDC EHDI provides states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Furthermore, state EHDI programs are encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.	**4d** **C☐** **P☐** **M☐** **N☐**
4e. Data Collection Strategy/Implementation	**4e** **C☐**

4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues: Requires an accurate standardized denominator and numerator to successfully determine that all infants have been accounted for and received necessary care. The limitation has been that providers have only reported on a subset of infants seen. **4e.2 Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Hearing Screening refer rate at hospital discharge is not a proprietary measure. Many public health EHDI programs have already assumed the cost to implement and report this measure. Depending on availability, federal funds can be provided for additional public health programs to strengthen infrastructure which might be needed for this data collection. **4e.3 Evidence for costs:** **4e.4 Business case documentation:**	**P☐ M☐ N☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** **C☐ P☐ M☐ N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐ N☐ A☐**
CONTACT INFORMATION	
Co.1 Measure Steward (Intellectual Property Owner) **Co.1 Organization** Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333 **Co.2 Point of Contact** John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-	
Measure Developer If different from Measure Steward **Co.3 Organization** Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333 **Co.4 Point of Contact** Craig, Mason, Ph.D., Craig_Mason@umit.maine.edu, 207-581-9059-	
Co.5 Submitter If different from Measure Steward POC John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-, Centers for Disease Control and Prevention	
Co.6 Additional organizations that sponsored/participated in measure development On July 24, the Joint Committee on Infant Hearing (JCIH) voted unanimously to proceed with the submission these EHDI measures to NQF. Liaison representatives were present from all of the participating organizations: American Academy of	

Pediatrics (AAP),
American Academy of Audiology (AAA), American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS), American Speech-
Language-Hearing Association (ASHA), Alexander Graham Bell Association for the Deaf and Hard of Hearing, Council of Education of
▫he Deaf (CED), and Directors of Speech and Hearing Programs in State Health and Welfare Agencies (DSHPSHWA).

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
CDC EHDI Data Committee and the Joint Committee on Infant Hearing (JCIH) both participated in the development of EHDI quality benchmarks on which this measure is based

Ad.2 **If adapted, provide name of original measure:**
Ad.3-5 **If adapted, provide original specifications URL or attachment**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:** 2000
Ad.7 **Month and Year of most recent revision:** 10, 2007
Ad.8 **What is your frequency for review/update of this measure?**
Ad.9 **When is the next scheduled review/update for this measure?**

Ad.10 **Copyright statement/disclaimers:**

Ad.11 -13 **Additional Information web page URL or attachment:** URL http://jcih.org/posstatemts.htm

Date of Submission (*MM/DD/YY*)**:** 08/30/2010

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1357 **NQF Project:** Child Health Quality Measures 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Outpatient hearing screening of infants who did not complete screening before hospital discharge (EHDI-1c)
De.2 **Brief description of measure***:* This measure assesses the proportion of all newborn infants who did not complete a hearing screen prior to discharge, who went on to receive an outpatient screen before the child was 31 days of age. *Numbering within the parentheses references the US national extension quality measure identifiers developed for the Use Cases published in the Integrating the Healthcare Enterprise (IHE) Quality, Research and Public Health (QRPH) EHDI Technical Framework Supplement available at www.ihe.net/Technical_Framework/index.cfm#quality
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** This measure is paired with other measures relevant to the monitoring and measurement of the early screening evaluation and intervention process.
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the**	**A** **Y**☐ **N**☐

right to use aspects of the measure owned by another entity (e.g., risk model, code set)? Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary A.4 **Measure Steward Agreement attached:**	
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** **Y**☐ **N**☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement	**C** **Y**☐ **N**☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** No, testing will be completed within 12 months D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** **Y**☐ **N**☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** **Y**☐ **N**☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Frequently performed procedure 1a.2 1a.3 **Summary of Evidence of High Impact:** U.S. Preventive Services Task Force. The USPSTF recommends screening for hearing loss in all newborn infants. There is good evidence that newborn hearing screening testing is highly accurate and leads to earlier identification and treatment of infants with hearing loss. Good-quality evidence shows that early detection improves language outcomes. http://www.uspreventiveservicestaskforce.org/uspstf08/newbornhear/newbhearrs.pdf 1a.4 **Citations for Evidence of High Impact:** Nelson HD, Bougatsos C, Nygren P. Universal Newborn Hearing Screening: Systematic Review to Update the 2001 U.S. Preventive Services Task Force Recommendation. AHRQ Publication No. 08-05117-EF-4, July 2008. Agency for Healthcare Research and Quality (AHRQ), Rockville, MD. http://www.uspreventiveservicestaskforce.org/uspstf08/newbornhear/newbornart.pdf	**1a** **C**☐ **P**☐ **M**☐ **N**☐

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: From page 194 of the 2007 Joint Committee on Infant Hearing (JCIH) Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs(http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals)
"The JCIH supports the concept of regular measurements of performance and recommends routine monitoring of these measures for interprogram comparison and continuous quality improvement. Performance benchmarks represent a consensus of expert opinion in the field of newborn hearing screening and intervention. The benchmarks are the minimal requirements that should be attained by high quality programs. Frequent measures of quality permit prompt recognition and correction of any unstable component of the EHDI process."

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
http://www.cdc.gov/ncbddd/ehdi/data.htm

1b.3 Citations for data on performance gap:
"Identifying Infants with Hearing Loss --- United States, 1999—2007." CDC Morbidity and Mortality Weekly Report (MMWR). March 5, 2010 / 59(08);220-223.
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5908a2.htm
"Newborn hearing screening and follow-up: are children receiving recommended services?" Public Health Rep. 2010 Mar-Apr;125(2):199-207.

1b.4 Summary of Data on disparities by population group:
The Hispanic population is most likely not to receive the outpatient rescreen
Infants born to mothers who have 12 years of education or less were less likely to obtain the rescreen.
Males are less likely to receive the outpatient rescreen

1b.5 Citations for data on Disparities:
A Programmatic Analysis of a Newborn Hearing Screening Program for Evaluation and Improvement. Theses submitted to the Faculty of the Graduate School of the University of Colorado in partial fulfillment of the requirements for the degree of Doctor of Philosophy. Vickie R Thomson. 2007.

1b
C☐
P☐
M☐
N☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Children with hearing loss who are screened for hearing loss at birth have better language outcomes at school age than those not screened. Infants identified with hearing loss through universal screening have significantly earlier referral, diagnosis, and treatment than those identified in other ways. Language outcomes at school age strengthen the case for newborn hearing screening but are also dependent on effective methods of referral, follow-up, and treatment.

1c.2-3. Type of Evidence: Cohort study, Observational study, Evidence-based guideline, Expert opinion, Systematic synthesis of research

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
U.S. Preventive Services Task Force (www.ahrq.gov/clinic/uspstf/uspsnbhr.htm)
Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921
(http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals)

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
Grade: B (Recommendation by the USPSTF recommends screening for hearing loss in all newborn infants.)

1c
C☐
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N☐

1c.6 Method for rating evidence: Scientific evidence review conducted by the Oregon Evidence-based Practice Center under contract to the Agency for Healthcare Research and Quality. **1c.7 Summary of Controversy/Contradictory Evidence:** There is limited evidence about the harms of screening, with conflicting research findings regarding anxiety associated with false-positive test results. There is limited information about the harms of treatment **1c.8 Citations for Evidence (***other than guidelines***):** **1c.9 Quote the Specific guideline recommendation (***including guideline number and/or page number***):** "Outpatient screening at no later than 1 month of age should also be available to infants who were discharged before receiving the birth admission screening or who were born outside a hospital or birthing center." Page 905. Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. **1c.10 Clinical Practice Guideline Citation:** Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921 (http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals **1c.11 National Guideline Clearinghouse or other URL:** Newborn Screening Coding and Terminology Guide. http://newbornscreeningcodes.nlm.nih.gov/nb/sc/condition/HEAR **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** **1c.13 Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:** **1c.14 Rationale for using this guideline over others:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	**2a-specs** **C☐** **P☐** **M☐** **N☐**
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Numerator contains the number of infants born at a given facility during the time window with no documented hearing screening performed prior to patient discharge and who have been screened for hearing	

loss as an outpatient by 30 days of age.

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator***):**
The time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator.

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
Total number with LOINC# 54109-4: Newborn hearing screen – right OR LOINC# 54108-6: Newborn hearing screen – left equals "Not performed" (LA7304-4)
AND
with "Hearing Screening Performed": evidence of hearing screening performed before the child was 31 days of age. (LOINC# 54109-4: Newborn hearing screen – right = Pass LA10392-1 OR Refer LA10393-9 AND LOINC# 54108-6: Newborn hearing screen – left= Pass LA10392-1 OR Refer LA10393-9).

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Denominator contains the number of infants born at a given facility during the time window with no documented hearing screening performed prior to patient discharge.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Newborn period

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
The time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Total number with LOINC# 54109-4: Newborn hearing screen – right OR LOINC# 54108-6: Newborn hearing screen – left equals "Not performed" (LA7304-4).

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Patient deceased before the child was 31 days of age, parental refusal, or not performed due to medical exclusion.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Joint Commission Discharge Disposition - Death Value Set (86986.v1) 1.3.6.1.4.1.33895.1.3.0.12. "Patient Deceased": Patient has expired.
LOINC# 54109-4: Newborn hearing screen – right OR LOINC# 54108-6: Newborn hearing screen – left includes "Parental refusal" (LA6644-4) OR Not performed, medical exclusion - not indicated (LA12409-1)

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
(1) The time period for births included in the estimate is specified (see 2a.2, 2a.7).
(2) All live births that occurred at a facility during the time period are selected.
(3) Result of step 2 is filtered to remove children who died before the child was 31 days of age, cases of

parental refusal, and/or cases not screened due to medical exclusion (see 2a.9, 2a.10).
(4) Result of step 3 is filtered to be limited to the subset that (a) has been discharged from the hospital following birth, AND (b) had Newborn Hearing Screening identified as "not performed" at the time of discharge (see 2a.8). This result is saved

The numerator is calculated using the following step:
(5) Result of step 4 is further filtered to be limited to the subset with a hearing screening performed after discharge (see 2a.3) AND before the child was 31 days of age (see 2a.2). This result is saved as the numerator (see 2a.1).

The denominator is calculated using the following step:
(6) Result from Step 4 is further filtered to exclude individuals who both (a) are under the age of 31 days AND who also (b) have not received a screen following discharge. The result is saved as the denominator (see 2a.4).

EHDI-1c is calculated using the following step:
(7) EHDI-1c is calculated by dividing the numerator (result of step 5) by the denominator (result of step 6).

2a.22 Describe the method for discriminating performance *(e.g., significance testing)*:
Method to discriminate performance is based upon jurisdictionally based statistical measurement reflecting local and national variability.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
not applicable

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic clinical data, Public health data/vital statistics, Electronic Health/Medical Record, Registry data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
Electronic Health/Medical Record, Public health information system

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
www.hitsp.org AND www.ihe.net/Technical_Framework/index.cfm#quality AND
www.cdc.gov/ncbddd/ehdi/data.htm

2a.29-31 Data dictionary/code table web page URL or attachment: URL
http://newbornscreeningcodes.nlm.nih.gov AND www.hitsp.org AND
www.ihe.net/Technical_Framework/index.cfm#quality

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Individual, Facility/Agency, Population: national, Population: states

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Hospital

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Audiologist, Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO), Clinicians: PT/OT/Speech

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)*: Data used in this measure are included in the EHR. As noted in the NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties, "…the EHR will be considered the authoritative source of clinical information and legal record of care. Quality measures based on EHRs require exporting clinical information recorded by

2b
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N☐

healthcare clinicians from discrete computer readable fields; therefore, measurement errors due to manual abstraction, coding by persons other than the originator, or transcription are eliminated."
As these data elements are extracted from EHRs using computer programming, they "are by virtue of automation repeatable (reliable); therefore, testing at the data element level should focus on validity… reliability of data items may be bypassed if validity of data items is demonstrated."
EHR data used in this measure reflect part of a national, population-based public health surveillance data collection. Data are collected at the individual-child level within each state/territory and reported nationally at an aggregated state-level to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and 2 territories reported newborn hearing screening data on a total of 3,345,629 births.

2b.2 **Analytic Method** *(type of reliability & rationale, method for testing)***:**
As noted in 2b.1., given data are extracted from EHRs, "reliability of data items may be bypassed if validity of data items is demonstrated". (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties)

2b.3 **Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
While the use of EHRs for data elements reflects a particular strength of this measure, "EHRs and EHR measures are new and will most likely require some adjustment of local EHR structures and recording practices to meet standards." (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This has been and will continue to be addressed in the manner recommended in the Guidance document cited above. First, nationally, CDC EHDI has and will continue to provide states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are and will continue to be encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Second, state EHDI programs have been and will continue to be encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.

2c. Validity testing

2c.1 **Data/sample** *(description of data/sample and size)***:** Data used in this measure reflect EHR extracted information that is part of a national, population-based public health surveillance data collection. Data are collected at the individual-child level within each state/territory, and reported at state-level aggregate form nationally to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and 2 territories reported newborn hearing screening data on a total of 3,345,629 births.

2c.2 **Analytic Method** *(type of validity & rationale, method for testing)***:**
A formal and systematic testing of face validity of the measure score as an indicator of quality has been conducted in order to serve as an acceptable indicator for validity of the measure score (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This evaluation has been be conducted through the CDC EHDI Data Committee.

2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)***:**
. Face validity has been systematically assessed by relevant stakeholders in order to assess whether the measure represents quality care for this specific topic and whether the focus of this measure is the most important aspect of quality for this specific topic (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties).

2c
C☐
P☐
M☐
N☐

2d. Exclusions Justified

2d.1 **Summary of Evidence supporting exclusion(s):**
Not applicable –exclusions are limited to cases of infant death before the child was 31 days of age, medical exclusion or parental refusal.

2d.2 **Citations for Evidence:**

2d
C☐
P☐
M☐
N☐
NA☐

Not applicable – see 2d.1. 2d.3 **Data/sample** *(description of data/sample and size)*: Not applicable – see 2d.1. 2d.4 **Analytic Method** *(type analysis & rationale)*: Not applicable – see 2d.1. 2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: Not applicable – see 2d.1.	
2e. Risk Adjustment for Outcomes/ Resource Use Measures 2e.1 **Data/sample** *(description of data/sample and size)*: Not applicable – no risk adjustment is included 2e.2 **Analytic Method** *(type of risk adjustment, analysis, & rationale)*: Not applicable – no risk adjustment is included 2e.3 **Testing Results** *(risk model performance metrics)*: Not applicable – no risk adjustment is included 2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:** Not applicable – no risk adjustment is included	**2e** C☐ P☐ M☐ N☐ NA☐
2f. Identification of Meaningful Differences in Performance 2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: National, population-based public health surveillance data, collected at the individual-child level within each state/territory, and reported at state-level aggregate form nationally to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and 2 territories reported newborn hearing screening data on a total of 3,345,629 births. 2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Statistical analysis comparing individual entities (provider, network of providers, state/territory) to the mean level of performance for similar entities. When appropriate, this can be limited to similar entities within a given jurisdiction (e.g., performance of a specific provider relative to other providers in a state) or nationally (e.g., mean performance across an entire state relative to other state/territories). In addition, performance can be evaluated through direct comparison to current national standards of performance (e.g., CDC National Goals, Joint Committee on Infant Hearing,Healthy People 2020.) 2f.3 **Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: For statistical analyses comparing individual entities to the mean level of performance for similar entities, performance that is 2 standard deviations below the corresponding mean can be flagged. When appropriate, this can be done both within a given jurisdiction and nationally. For example, overall performance for a low performing state may be more than 2 standard deviations below the mean for all states/territories, resulting in that state being identified. However, within that state, there may be no significant difference among providers (i.e., all are performing equally poorly). For direct comparisons to current national standards, identification will consist of (1) a determination that performance falls below the standard, and (2) a measure of the difference between observed performance and the stated standard.	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods 2g.1 **Data/sample** *(description of data/sample and size)*: All data will be collected through Electronic Health Records – not applicable 2g.2 **Analytic Method** *(type of analysis & rationale)*: All data will be collected through Electronic Health Records – not applicable	**2g** C☐ P☐ M☐ N☐ NA☐

2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*: All data will be collected through Electronic Health Records – not applicable	
2h. Disparities in Care 2h.**1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: Not applicable – measure is not stratified 2h.2 **If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** Follow-up analysis can be performed at state and national levels based upon disparities noted in 1b.4 / 1b.5	**2h** **C**☐ **P**☐ **M**☐ **N**☐ **NA**☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* **C**☐ **P**☐ **M**☐ **N**☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information 3a.1 **Current Use:** In use 3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): Healthy People 2010 objective 28-11: Increase the proportion of newborns who are screened for hearing loss by age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months. Proposed Healthy People 2020 ENT-VSL HP2020–8: Increase the proportion of newborns who are screened for hearing loss by no later than age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months. 3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) 3a.4 **Data/sample** *(description of data/sample and size)*: CDC Survey (http://www.cdc.gov/ncbddd/ehdi/data.htm) Summary of 2007 National CDC EHDI Data: Number Screened = 3,345,629 3a.5 **Methods** *(e.g., focus group, survey, QI project)*: Hearing Screening and Follow-up Survey (HSFS): OMB No. 0920-0733 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)*: Qualitative: "Identifying Infants with Hearing Loss --- United States, 1999—2007." CDC Morbidity and Mortality Weekly Report (MMWR). March 5, 2010 / 59(08);220-223. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5908a2.htm	**3a** **C**☐ **P**☐ **M**☐ **N**☐
3b/3c. Relation to other NQF-endorsed measures	

3b.1 **NQF # and Title of similar or related measures:** no current NQF endorsed measure	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?** The Centers for Disease Control and Prevention (CDC), the HRSA Maternal and Child Health Bureau (MCHB) and the National Committee for Quality Assurance (NCQA) have submitted 2010 Child Health Quality Measures to NQF that relate to the topic of newborn screening, however the measures target different care settings and data sources. CDC, MCHB, and NCQA are collaborating to ensure the measure specifications have distinctive additive value and are harmonized.	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No	**4c** C☐ P☐ M☐ N☐ NA☐

4c.2 **If yes, provide justification.**	
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** The use of EHRs for this measure provide a number of strengths that facilitate data quality, including EHRs serving as the authoritative source of clinical information and legal record of care. Furthermore, the use of discrete, computer readable fields results in reduced measurement error that may emerge from manual abstraction, third party coding, or transcription errors. Nevertheless, potential sources of error exist and include incorrect measure, code, or logic specification, as well as incorrect programming, system structure, or data exporting code, or inconsistent field definitions across providers or users. These can be audited through quality control measures. For example, CDC EHDI provides states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Furthermore, state EHDI programs are encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.	**4d** C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Requires an accurate standardized denominator and numerator to successfully determine that all infants have been accounted for and received necessary care. The limitation has been that providers have only reported on a subset of infants seen. 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Outpatient hearing screening of infants who did not complete screening before hospital discharge is not a proprietary measure. Many public health EHDI programs have already assumed the cost to implement and report this measure. Depending on availability, federal funds can be provided for additional public health programs to strengthen infrastructure which might be needed for this data collection. 4e.3 **Evidence for costs:** 4e.4 **Business case documentation:**	**4e** C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** C☐ P☐ M☐ N☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited** ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	Y☐ N☐ A☐

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333

Co.2 Point of Contact
John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-

Measure Developer If different from Measure Steward
Co.3 Organization
Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333

Co.4 Point of Contact
Craig, Mason, Ph.D., Craig_Mason@umit.maine.edu, 207-581-9059-

Co.5 Submitter If different from Measure Steward POC
John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-, Centers for Disease Control and Prevention

Co.6 Additional organizations that sponsored/participated in measure development
On July 24, the Joint Committee on Infant Hearing (JCIH) voted unanimously to proceed with the submission these EHDI measures to NQF. Liaison representatives were present from all of the participating organizations: American Academy of Pediatrics (AAP), American Academy of Audiology (AAA), American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS), American Speech-Language-Hearing Association (ASHA), Alexander Graham Bell Association for the Deaf and Hard of Hearing, Council of Education of the Deaf (CED), and Directors of Speech and Hearing Programs in State Health and Welfare Agencies (DSHPSHWA).

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
CDC EHDI Data Committee and the Joint Committee on Infant Hearing (JCIH) both participated in the development of EHDI quality benchmarks on which this measure is based.

Ad.2 If adapted, provide name of original measure:
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 2000
Ad.7 Month and Year of most recent revision: 10, 2007
Ad.8 What is your frequency for review/update of this measure?
Ad.9 When is the next scheduled review/update for this measure?

Ad.10 Copyright statement/disclaimers:

Ad.11 -13 Additional Information web page URL or attachment: URL http://jcih.org/posstatemts.htm

Date of Submission (*MM/DD/YY*)**:** 08/30/2010

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1358 **NQF Project:** Child Health Quality Measures 2010

MEASURE DESCRIPTIVE INFORMATION

De.1 Measure Title: Infants identified with risk factors for hearing loss within the Medical Home (EHDI-2a)

De.2 Brief description of measure*:* This measure assesses the percent of infants in a practice that have completed risk factor analysis for delayed onset or progressive hearing loss.

*Numbering within the parentheses references the US national extension quality measure identifiers developed for the Use Cases published in the Integrating the Healthcare Enterprise (IHE) Quality, Research and Public Health (QRPH) EHDI Technical Framework Supplement available at www.ihe.net/Technical_Framework/index.cfm#quality

1.1-2 Type of Measure: Process
De.3 If included in a composite or paired with another measure, please identify composite or paired measure
This measure is paired with other measures relevant to the monitoring and measurement of the early screening evaluation and intervention process.

De.4 National Priority Partners Priority Area: Population health
De.5 IOM Quality Domain: Effectiveness
De.6 Consumer Care Need: Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1 Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes **A.2 Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:**	**A** **Y☐** **N☐**

A.3 Measure Steward Agreement: Government entity and in the public domain - no agreement necessary **A.4 Measure Steward Agreement attached:**	
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** **Y☐** **N☐**
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	**C** **Y☐** **N☐**
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. **D.1Testing:** No, testing will be completed within 12 months **D.2 Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** **Y☐** **N☐**
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** **Y☐** **N☐**
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers **1a.2** **1a.3 Summary of Evidence of High Impact:** U.S. Preventive Services Task Force. The USPSTF recommends screening for hearing loss in all newborn infants. There is good evidence that newborn hearing screening testing is highly accurate and leads to earlier identification and treatment of infants with hearing loss. Good-quality evidence shows that early detection improves language outcomes. http://www.uspreventiveservicestaskforce.org/uspstf08/newbornhear/newbhearrs.pdf **1a.4 Citations for Evidence of High Impact:** Nelson HD, Bougatsos C, Nygren P. Universal Newborn Hearing Screening: Systematic Review to Update the 2001 U.S. Preventive Services Task Force Recommendation. AHRQ Publication No. 08-05117-EF-4, July 2008. Agency for Healthcare Research and Quality (AHRQ), Rockville, MD. http://www.ahrq.gov/clinic/uspstf08/newbornhear/newbornart.htm	**1a** **C☐** **P☐** **M☐** **N☐**
1b. Opportunity for Improvement **1b.1 Benefits (improvements in quality) envisioned by use of this measure:** From page 194 of the 2007	**1b** **C☐** **P☐**

Joint Committee on Infant Hearing (JCIH) Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs(http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals)
"The JCIH supports the concept of regular measurements of performance and recommends routine monitoring of these measures for interprogram comparison and continuous quality improvement. Performance benchmarks represent a consensus of expert opinion in the field of newborn hearing screening and intervention. The benchmarks are the minimal requirements that should be attained by high quality programs. Frequent measures of quality permit prompt recognition and correction of any unstable component of the EHDI process."

M☐ N☐

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:

1b.3 Citations for data on performance gap:

1b.4 Summary of Data on disparities by population group:

1b.5 Citations for data on Disparities:

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Children with hearing loss who are screened for hearing loss at birth have better language outcomes at school age than those not screened. Infants identified with hearing loss through universal screening have significantly earlier referral, diagnosis, and treatment than those identified in other ways. Language outcomes at school age strengthen the case for newborn hearing screening but are also dependent on effective methods of referral, follow-up, and treatment.

1c.2-3. Type of Evidence: Evidence-based guideline, Expert opinion, Systematic synthesis of research

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921 (http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals)

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**

1c.6 Method for rating evidence:

1c.7 Summary of Controversy/Contradictory Evidence:

1c.8 Citations for Evidence (*other than guidelines***):**

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
"Because some important indicators, such as family history of hearing loss, may not be determined during the course of UNHS [Universal Newborn Hearing Screening] the presence of all risk indicators for acquired hearing loss should be determined in the medical home during early well-infant visits." Page 912 Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing.

1c
C☐ P☐ M☐ N☐

1c.10 Clinical Practice Guideline Citation: Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921 (http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals) **1c.11 National Guideline Clearinghouse or other URL:** **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** **1c.13 Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:** **1c.14 Rationale for using this guideline over others:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Numerator contains the number of infants in a practice born during the time window that have completed risk factor analysis for delayed onset or progressive hearing loss. **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator. **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** Total number with "Hearing Loss Risk Factors Value Set" (Discharge DX) contains LOINC# 58232-0: JCIH Risk Indicators: LA12667-4, LA12668-2, LA12669-0, LA12670-8, LA12671-6, LA12672-4, LA12673-2, LA12674-0, LA12675-7, LA12681-5, LA12676-5, LA12677-3, LA12678-1, LA12679-9, LA6172-6 OR: Risk Factors for Hearing Loss (NICU 2865 > 5 Days) OR: Risk Factors for Hearing Loss (Problem List) - SNOMED Hearing Loss Risk Factors Value Set: 439750006, 441899004, 276687002, 281610001, 281612009, 281611002, 206363004, 206331005, 206005002, 80690008, 178280004, 312972009, 161653008.	**2a-specs** **C☐** **P☐** **M☐** **N☐**
2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):** Denominator contains the number of infants in a practice born during the time window.	

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Infancy

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Total number of patients during the specified time period for a given provider/practice (see 2a.7).

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** "Patient Deceased": Patient has expired.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Joint Commission Discharge Disposition - Death Value Set (86986.v1) 1.3.6.1.4.1.33895.1.3.0.12. "Patient Deceased": Patient has
expired.

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
(1) The time period for births included in the estimate is specified (see 2a.2, 2a.7).
(2) All live births that occurred during the time period for a given provider/practice are selected.

The denominator is calculated using the following steps:
(3) The result of step 2 is further reduced by removing all cases where the infant has died (see 2a.9, 2a.10). This result is saved as the denominator (see 2a.8 and 2a.4).

The numerator is calculated using the following step:
(4) Result of step 3 is filtered to be limited to the subset with any corresponding entries for the Hearing Loss Risk Factors Value Set OR Risk Factors for Hearing Loss (see 2a.3) prior to 12 months of age (2a.2). This result is saved as the numerator (see 2a.1).

EHDI-2a is calculated using the following step:
(5) EHDI-2a is calculated by dividing the numerator (result of step 4) by the denominator (result of step 3).

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
Method to discriminate performance is based upon jurisdictionally based statistical measurement reflecting local and national
variability.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*

Public health data/vital statistics, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
Electronic Health/Medical Record, Public health information system

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
www.ihe.net/Technical_Framework/index.cfm#quality

2a.29-31 Data dictionary/code table web page URL or attachment: URL
http://newbornscreeningcodes.nlm.nih.gov AND www.hitsp.org AND
www.ihe.net/Technical_Framework/index.cfm#quality

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Individual, Facility/Agency, Population: states

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Ambulatory Care: Office, Ambulatory Care: Clinic

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** Data used in this measure are included in the EHR. As noted in the NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties, "…the EHR will be considered the authoritative source of clinical information and legal record of care. Quality measures based on EHRs require exporting clinical information recorded by healthcare clinicians from discrete computer readable fields; therefore, measurement errors due to manual abstraction, coding by persons other than the originator, or transcription are eliminated."
As these data elements are extracted from EHRs using computer programming, they "are by virtue of automation repeatable (reliable); therefore, testing at the data element level should focus on validity… reliability of data items may be bypassed if validity of data items is demonstrated."
EHR data used in this measure reflect part of a national, population-based public health surveillance data collection.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
As noted in 2b.1., given data are extracted from EHRs, "reliability of data items may be bypassed if validity of data items is demonstrated". (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties)

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
While the use of EHRs for data elements reflects a particular strength of this measure, "EHRs and EHR measures are new and will most likely require some adjustment of local EHR structures and recording practices to meet standards." (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This has been and will continue to be addressed in the manner recommended in the Guidance document cited above. First, nationally, CDC EHDI has and will continue to provide states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are and will continue to be encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Second, state EHDI programs have been and will continue to be encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.

2b
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2c. Validity testing — **2c**

2c.1 Data/sample *(description of data/sample and size)*: Data used in this measure reflect EHR extracted information that is part of a national, population-based public health surveillance data collection. **2c.2 Analytic Method** *(type of validity & rationale, method for testing)*: A formal and systematic testing of face validity of the measure score as an indicator of quality will be conducted in order to serve as an acceptable indicator for validity of the measure score (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This evaluation will be conducted through the CDC EHDI Data Committee. **2c.3 Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*: Face validity has been systematically assessed by relevant stakeholders in order to assess whether the measure represents quality care for this specific topic and whether the focus of this measure is the most important aspect of quality for this specific topic (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties).	C☐ P☐ M☐ N☐
2d. Exclusions Justified **2d.1 Summary of Evidence supporting exclusion(s):** Not applicable –exclusions are limited to cases of infant death **2d.2 Citations for Evidence:** Not applicable – see 2d.1. **2d.3 Data/sample** *(description of data/sample and size)*: Not applicable – see 2d.1. **2d.4 Analytic Method** *(type analysis & rationale)*: Not applicable – see 2d.1. **2d.5 Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: Not applicable – see 2d.1.	**2d** C☐ P☐ M☐ N☐ NA☐
2e. Risk Adjustment for Outcomes/ Resource Use Measures **2e.1 Data/sample** *(description of data/sample and size)*: Not applicable – no risk adjustment is included **2e.2 Analytic Method** *(type of risk adjustment, analysis, & rationale)*: Not applicable – no risk adjustment is included **2e.3 Testing Results** *(risk model performance metrics)*: Not applicable – no risk adjustment is included **2e.4 If outcome or resource use measure is not risk adjusted, provide rationale:** Not applicable – no risk adjustment is included	**2e** C☐ P☐ M☐ N☐ NA☐
2f. Identification of Meaningful Differences in Performance **2f.1 Data/sample from Testing or Current Use** *(description of data/sample and size)*: **2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Statistical analysis comparing individual entities (provider, network of providers, state/territory) to the mean level of performance for similar entities. When appropriate, this can be limited to similar entities within a given jurisdiction (e.g., performance of a specific provider relative to other providers in a state) or nationally (e.g., mean performance across an entire state relative to other state/territories). In addition, performance can be evaluated through direct comparison to current national standards of performance (e.g., CDC National Goals, Joint Committee on Infant Hearing,Healthy People 2020.) **2f.3 Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by*	**2f** C☐ P☐ M☐ N☐

quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance): For statistical analyses comparing individual entities to the mean level of performance for similar entities, performance that is 2 standard deviations below the corresponding mean can be flagged. When appropriate, this can be done both within a given jurisdiction and nationally. For example, overall performance for a low performing state may be more than 2 standard deviations below the mean for all states/territories, resulting in that state being identified. However, within that state, there may be no significant difference among providers (i.e., all are performing equally poorly).	
2g. Comparability of Multiple Data Sources/Methods 2g.1 **Data/sample** *(description of data/sample and size)*: All data will be collected through Electronic Health Records – not applicable 2g.2 **Analytic Method** *(type of analysis & rationale)*: All data will be collected through Electronic Health Records – not applicable 2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*: All data will be collected through Electronic Health Records – not applicable	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care 2h.**1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: Not applicable – measure is not stratified 2h.2 **If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties*?	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information 3a.1 **Current Use:** Testing not yet completed 3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): AAP Recommendations for Preventive Pediatric Health Care (Periodicity Schedule). AAP Clinical Report-Hearing Assessment in Infants and Children: Recommendations Beyond Neonatal Screening. Guidance for the Clinician in Rendering Pediatric Care. www.pediatrics.org/cgi/doi/10.1542/peds.2009-1997. 3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**	**3a** C☐ P☐ M☐ N☐

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) **3a.4 Data/sample** *(description of data/sample and size)*: **3a.5 Methods** *(e.g., focus group, survey, QI project)*: **3a.6 Results** *(qualitative and/or quantitative results and conclusions)*:	
3b/3c. Relation to other NQF-endorsed measures **3b.1 NQF # and Title of similar or related measures:** no current NQF endorsed measure	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?** The Centers for Disease Control and Prevention (CDC), the HRSA Maternal and Child Health Bureau (MCHB) and the National Committee for Quality Assurance (NCQA) have submitted 2010 Child Health Quality Measures to NQF that relate to the topic of newborn screening, however the measures target different care settings and data sources. CDC, MCHB, and NCQA are collaborating to ensure the measure specifications have distinctive additive value and are harmonized.	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** **5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Ratin g
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure*	**4b** C☐ P☐

scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims) 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**M☐ N☐**
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** 4c.2 **If yes, provide justification.**	**4c C☐ P☐ M☐ N☐ NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** The use of EHRs for this measure provide a number of strengths that facilitate data quality, including EHRs serving as the authoritative source of clinical information and legal record of care. Furthermore, the use of discrete, computer readable fields results in reduced measurement error that may emerge from manual abstraction, third party coding, or transcription errors. Nevertheless, potential sources of error exist and include incorrect measure, code, or logic specification, as well as incorrect programming, system structure, or data exporting code, or inconsistent field definitions across providers or users. These can be audited through quality control measures. For example, CDC EHDI provides states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Furthermore, state EHDI programs are encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.	**4d C☐ P☐ M☐ N☐**
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Requires an accurate standardized denominator and numerator to successfully determine that all infants have been accounted for and received necessary care. The limitation has been that providers have only reported on a subset of infants seen. 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Infants identified with risk factors for hearing loss within the Medical Home is not a proprietary measure. Public health EHDI programs may need to assume the cost to implement this measure. This measure may require costs of additional system development at the public health level and may require costs of systems development and data entry at the provider level. Depending on availability, federal funds might be provided to public health programs in order to strengthen infrastructure needed for this data collection. 4e.3 **Evidence for costs:** 4e.4 **Business case documentation:**	**4e C☐ P☐ M☐ N☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met? Rationale:**	**4 C☐ P☐**

	M☐ N☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited** ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y**☐ **N**☐ **A**☐

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, Atlanta, Georgia, 30333

Co.2 **Point of Contact**
John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-

Measure Developer If different from Measure Steward
Co.3 **Organization**
Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333

Co.4 **Point of Contact**
Craig, Mason, Ph.D., Craig_Mason@umit.maine.edu, 207-581-9059-

Co.5 **Submitter If different from Measure Steward POC**
John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-, Centers for Disease Control and Prevention

Co.6 **Additional organizations that sponsored/participated in measure development**
On July 24, the Joint Committee on Infant Hearing (JCIH) voted unanimously to proceed with the submission these EHDI measures to NQF. Liaison representatives were present from all of the participating organizations: American Academy of Pediatrics (AAP), American Academy of Audiology (AAA), American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS), American Speech-Language-Hearing Association (ASHA), Alexander Graham Bell Association for the Deaf and Hard of Hearing, Council of Education of the Deaf (CED), and Directors of Speech and Hearing Programs in State Health and Welfare Agencies (DSHPSHWA).

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**

Ad.2 **If adapted, provide name of original measure:**
Ad.3-5 **If adapted, provide original specifications URL or attachment**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:** 2000
Ad.7 **Month and Year of most recent revision:** 10, 2007
Ad.8 **What is your frequency for review/update of this measure?**
Ad.9 **When is the next scheduled review/update for this measure?**

Ad.10 **Copyright statement/disclaimers:**

Ad.11 -13 **Additional Information web page URL or attachment:** URL http://jcih.org/posstatemts.htm

Date of Submission (*MM/DD/YY*)**:** 08/30/2010

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1359 **NQF Project:** Child Health Quality Measures 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 Measure Title: Infants identified with risk factors for hearing loss and have an audiological diagnosis (EHDI-2b)
De.2 Brief description of measure*:* This measure assesses the proportion of young children in a practice that have an identified risk factor for delayed onset or progressive hearing loss and have an audiological diagnosis.
1.1-2 Type of Measure: Process **De.3 If included in a composite or paired with another measure, please identify composite or paired measure** This measure is paired with other measures relevant to the monitoring and measurement of the early screening evaluation and intervention process.
De.4 National Priority Partners Priority Area: Population health **De.5 IOM Quality Domain**: Effectiveness **De.6 Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1 Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes **A.2 Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** **A.3 Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary **A.4 Measure Steward Agreement attached:**	**A** **Y☐** **N☐**
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	C Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** No, testing will be completed within 12 months D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	D Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers 1a.2 1a.3 **Summary of Evidence of High Impact:** U.S. Preventive Services Task Force. The USPSTF recommends screening for hearing loss in all newborn infants. There is good evidence that newborn hearing screening testing is highly accurate and leads to earlier identification and treatment of infants with hearing loss. Good-quality evidence shows that early detection improves language outcomes. http://www.uspreventiveservicestaskforce.org/uspstf08/newbornhear/newbhearrs.pdf 1a.4 **Citations for Evidence of High Impact:** Nelson HD, Bougatsos C, Nygren P. Universal Newborn Hearing Screening: Systematic Review to Update the 2001 U.S. Preventive Services Task Force Recommendation. AHRQ Publication No. 08-05117-EF-4, July 2008. Agency for Healthcare Research and Quality (AHRQ), Rockville, MD. http://www.ahrq.gov/clinic/uspstf08/newbornhear/newbornart.htm	**1a** C☐ P☐ M☐ N☐
1b. Opportunity for Improvement 1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** From page 194 of the 2007 Joint Committee on Infant Hearing (JCIH) Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs(http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OIA&keytype=ref&siteid=aapjournals)	**1b** C☐ P☐ M☐ N☐

"The JCIH supports the concept of regular measurements of performance and recommends routine monitoring of these measures for interprogram comparison and continuous quality improvement. Performance benchmarks represent a consensus of expert opinion in the field of newborn hearing screening and intervention. The benchmarks are the minimal requirements that should be attained by high quality programs. Frequent measures of quality permit prompt recognition and correction of any unstable component of the EHDI process."

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:

1b.3 Citations for data on performance gap:

1b.4 Summary of Data on disparities by population group:

1b.5 Citations for data on Disparities:

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Children with hearing loss who are screened for hearing loss at birth have better language outcomes at school age than those not screened. Infants identified with hearing loss through universal screening have significantly earlier referral, diagnosis, and treatment than those identified in other ways. Language outcomes at school age strengthen the case for newborn hearing screening but are also dependent on effective methods of referral, follow-up, and treatment.

1c.2-3. Type of Evidence: Evidence-based guideline, Expert opinion, Systematic synthesis of research

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921 (http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals)

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**

1c.6 Method for rating evidence:

1c.7 Summary of Controversy/Contradictory Evidence:

1c.8 Citations for Evidence (*other than guidelines***):**

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
"Every child with 1 or more risk factors on the hearing risk assessment should have ongoing developmentally appropriate hearing screening and at least 1 diagnostic audiology assessment by 24 to 30 months of age." Page 1254 from AAP Clinical Report-Hearing Assessment in Infants and Children: Recommendations Beyond Neonatal Screening. Guidance for the Clinician in Rendering Pediatric Care. www.pediatrics.org/cgi/doi/10.1542/peds.2009-1997.

1c.10 Clinical Practice Guideline Citation: AAP Clinical Report-Hearing Assessment in Infants and Children: Recommendations Beyond Neonatal Screening. Guidance for the Clinician in Rendering Pediatric Care. www.pediatrics.org/cgi/doi/10.1542/peds.2009-1997.

1c
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P☐
M☐
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1c.11 National Guideline Clearinghouse or other URL: **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** **1c.13 Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:** **1c.14 Rationale for using this guideline over others:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Numerator contains the number of infants that have been an identified risk factor for delayed onset or progressive hearing loss and have documentation of an audiological diagnosis by 36 months of age. **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator. **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** Total number of patients with "Audiological Diagnosis" SNOMED-CT equals “Hearing Normal” 164059009, “Permanent Conductive” 44057004, “Sensorineural” 60700002, “Mixed” 77507001, “Auditory Neuropathy Spectrum Disorder” 443805006, “Transient Hearing Loss” 123123005	
2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):** Total number with “Hearing Loss Risk Factors Value Set". (See EHDI-2a numerator) **2a.5 Target population gender:** Female, Male **2a.6 Target population age range:** Infancy **2a.7 Denominator Time Window (***The time period in which cases are eligible for inclusion in the denominator***):** The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator.	**2a-specs** **C☐** **P☐** **M☐** **N☐**

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Total number with "Hearing Loss Risk Factors Value Set" (Discharge DX) contains LOINC# 58232-0: JCIH Risk Indicators: LA12667-4, LA12668-2, LA12669-0, LA12670-8, LA12671-6, LA12672-4, LA12673-2, LA12674-0, LA12675-7, LA12681-5, LA12676-5, LA12677-3, LA12678-1, LA12679-9, LA6172-6
OR: Risk Factors for Hearing Loss (NICU 2865 > 5 Days)
OR: Risk Factors for Hearing Loss (Problem List) - SNOMED Hearing Loss Risk Factors Value Set: 439750006, 441899004, 276687002, 281610001, 281612009, 281611002, 206363004, 206331005, 206005002, 80690008, 178280004, 312972009, 161653008.

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** "Patient Deceased": Patient has expired.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Joint Commission Discharge Disposition - Death Value Set (86986.v1) 1.3.6.1.4.1.33895.1.3.0.12. "Patient Deceased": Patient has expired.

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
(1) The time period for births included in the estimate is specified (see 2a.2, 2a.7).
(2) All live births that occurred during the time period for a given provider/practice are selected.
(3) Result of step 2 is filtered to be limited to the subset with any corresponding entries for the Hearing Loss Risk Factors Value Set OR Risk Factors for Hearing Loss (see 2a.8) prior to 36 months of age (see 2a.2, 2a.7). This result is saved.

The numerator is calculated using the following step:
(4) Result of step 3 is filtered to be limited to the subset with any corresponding entries for Audiological Diagnosis (see 2a.3) prior to 36 months of age (see 2a.2). This result is saved as the numerator (see 2a.1).

The denominator is calculated using the following step:
(5) Result of step 3 is filtered to remove children who both (a) died prior to 36 months of age (see 2a.9, 2a.10) AND had no corresponding entries for Audiological Diagnosis (see 2a.3). This result is saved as the denominator (see 2a.4).

EHDI-2b is calculated using the following step:
(6) EHDI-2b is calculated by dividing the numerator (result of step 4) by the denominator (result of step 5).

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
Method to discriminate performance is based upon jurisdictionally based statistical measurement reflecting local and national variability.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Public health data/vital statistics, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
Electronic Health/Medical Record, Public health information system

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
www.ihe.net/Technical_Framework/index.cfm#quality

2a.29-31 Data dictionary/code table web page URL or attachment: URL
http://newbornscreeningcodes.nlm.nih.gov AND www.hitsp.org AND
www.ihe.net/Technical_Framework/index.cfm#quality

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Individual, Facility/Agency, Population: states

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Ambulatory Care: Office, Ambulatory Care: Clinic

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** Data used in this measure are included in the EHR. As noted in the NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties, "…the EHR will be considered the authoritative source of clinical information and legal record of care. Quality measures based on EHRs require exporting clinical information recorded by healthcare clinicians from discrete computer readable fields; therefore, measurement errors due to manual abstraction, coding by persons other than the originator, or transcription are eliminated."
As these data elements are extracted from EHRs using computer programming, they "are by virtue of automation repeatable (reliable); therefore, testing at the data element level should focus on validity… reliability of data items may be bypassed if validity of data items is demonstrated."
EHR data used in this measure reflect part of a national, population-based public health surveillance data collection.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
As noted in 2b.1., given data are extracted from EHRs, "reliability of data items may be bypassed if validity of data items is demonstrated". (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties)

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
While the use of EHRs for data elements reflects a particular strength of this measure, "EHRs and EHR measures are new and will most likely require some adjustment of local EHR structures and recording practices to meet standards." (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This has been and will continue to be addressed in the manner recommended in the Guidance document cited above. First, nationally, CDC EHDI has and will continue to provide states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are and will continue to be encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Second, state EHDI programs have been and will continue to be encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.

2b C☐ P☐ M☐ N☐

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)***:** Data used in this measure reflect EHR extracted

2c C☐ P☐

information that is part of a national, population-based public health surveillance data collection. **2c.2 Analytic Method** *(type of validity & rationale, method for testing)*: A formal and systematic testing of face validity of the measure score as an indicator of quality will be conducted in order to serve as an acceptable indicator for validity of the measure score (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This evaluation will be conducted through the CDC EHDI Data Committee. **2c.3 Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*: Face validity has been systematically assessed by relevant stakeholders in order to assess whether the measure represents quality care for this specific topic and whether the focus of this measure is the most important aspect of quality for this specific topic (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties).	**M☐** **N☐**
2d. Exclusions Justified **2d.1 Summary of Evidence supporting exclusion(s):** Not applicable –exclusions are limited to cases of infant death **2d.2 Citations for Evidence:** Not applicable – see 2d.1. **2d.3 Data/sample** *(description of data/sample and size)*: Not applicable – see 2d.1. **2d.4 Analytic Method** *(type analysis & rationale)*: Not applicable – see 2d.1. **2d.5 Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: Not applicable – see 2d.1.	**2d** **C☐** **P☐** **M☐** **N☐** **NA☐**
2e. Risk Adjustment for Outcomes/ Resource Use Measures **2e.1 Data/sample** *(description of data/sample and size)*: Not applicable – no risk adjustment is included **2e.2 Analytic Method** *(type of risk adjustment, analysis, & rationale)*: Not applicable – no risk adjustment is included **2e.3 Testing Results** *(risk model performance metrics)*: Not applicable – no risk adjustment is included **2e.4 If outcome or resource use measure is not risk adjusted, provide rationale:** Not applicable – no risk adjustment is included	**2e** **C☐** **P☐** **M☐** **N☐** **NA☐**
2f. Identification of Meaningful Differences in Performance **2f.1 Data/sample from Testing or Current Use** *(description of data/sample and size)*: **2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Statistical analysis comparing individual entities (provider, network of providers, state/territory) to the mean level of performance for similar entities. When appropriate, this can be limited to similar entities within a given jurisdiction (e.g., performance of a specific provider relative to other providers in a state) or nationally (e.g., mean performance across an entire state relative to other state/territories). In addition, performance can be evaluated through direct comparison to current national standards of performance (e.g., CDC National Goals, Joint Committee on Infant Hearing,Healthy People 2020.) **2f.3 Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:	**2f** **C☐** **P☐** **M☐** **N☐**

For statistical analyses comparing individual entities to the mean level of performance for similar entities, performance that is 2 standard deviations below the corresponding mean can be flagged. When appropriate, this can be done both within a given jurisdiction and nationally. For example, overall performance for a low performing state may be more than 2 standard deviations below the mean for all states/territories, resulting in that state being identified. However, within that state, there may be no significant difference among providers (i.e., all are performing equally poorly).	
2g. Comparability of Multiple Data Sources/Methods 2g.1 **Data/sample** *(description of data/sample and size)*: All data will be collected through Electronic Health Records – not applicable 2g.2 **Analytic Method** *(type of analysis & rationale)*: All data will be collected through Electronic Health Records – not applicable 2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*: All data will be collected through Electronic Health Records – not applicable	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care 2h.**1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: Not applicable – measure is not stratified 2h.2 **If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information 3a.1 **Current Use:** Testing not yet completed 3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): AAP Clinical Report-Hearing Assessment in Infants and Children: Recommendations Beyond Neonatal Screening. Guidance for the Clinician in Rendering Pediatric Care. www.pediatrics.org/cgi/doi/10.1542/peds.2009-1997. 3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) 3a.4 **Data/sample** *(description of data/sample and size)*:	**3a** C☐ P☐ M☐ N☐

3a.5 Methods *(e.g., focus group, survey, QI project)*: **3a.6 Results** *(qualitative and/or quantitative results and conclusions)*:	
3b/3c. Relation to other NQF-endorsed measures **3b.1 NQF # and Title of similar or related measures:** no current NQF endorsed measure	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?** The Centers for Disease Control and Prevention (CDC), the HRSA Maternal and Child Health Bureau (MCHB) and the National Committee for Quality Assurance (NCQA) have submitted 2010 Child Health Quality Measures to NQF that relate to the topic of newborn screening, however the measures target different care settings and data sources. CDC, MCHB, and NCQA are collaborating to ensure the measure specifications have distinctive additive value and are harmonized.	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** **5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐

4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** 4c.2 **If yes, provide justification.**	**4c** C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** The use of EHRs for this measure provide a number of strengths that facilitate data quality, including EHRs serving as the authoritative source of clinical information and legal record of care. Furthermore, the use of discrete, computer readable fields results in reduced measurement error that may emerge from manual abstraction, third party coding, or transcription errors. Nevertheless, potential sources of error exist and include incorrect measure, code, or logic specification, as well as incorrect programming, system structure, or data exporting code, or inconsistent field definitions across providers or users. These can be audited through quality control measures. For example, CDC EHDI provides states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Furthermore, state EHDI programs are encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.	**4d** C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Requires an accurate standardized denominator and numerator to successfully determine that all infants have been accounted for and received necessary care. The limitation has been that providers have only reported on a subset of infants seen. 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Infants identified with risk factors and have an audiological diagnosis is not a proprietary measure. Public health EHDI programs may need to assume the cost to implement this measure. This measure may require costs of additional system development at the public health level and may require costs of systems development and data entry at the provider level. Depending on availability, federal funds might be provided to public health programs in order to strengthen infrastructure needed for this data collection. 4e.3 **Evidence for costs:** 4e.4 **Business case documentation:**	**4e** C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** C☐ P☐ M☐ N☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited** ☐

Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333

Co.2 Point of Contact
John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-

Measure Developer If different from Measure Steward
Co.3 Organization
Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333

Co.4 Point of Contact
Craig, Mason, Ph.D., Craig_Mason@umit.maine.edu, 207-581-9059-

Co.5 Submitter If different from Measure Steward POC
John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-, Centers for Disease Control and Prevention

Co.6 Additional organizations that sponsored/participated in measure development
On July 24, the Joint Committee on Infant Hearing (JCIH) voted unanimously to proceed with the submission these EHDI measures to NQF. Liaison representatives were present from all of the participating organizations: American Academy of Pediatrics (AAP), American Academy of Audiology (AAA), American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS), American Speech-Language-Hearing Association (ASHA), Alexander Graham Bell Association for the Deaf and Hard of Hearing, Council of Education of the Deaf (CED), and Directors of Speech and Hearing Programs in State Health and Welfare
Agencies (DSHPSHWA).

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
CDC EHDI Data Committee and the Joint Committee on Infant Hearing (JCIH) both participated in the development of EHDI quality benchmarks on which this measure is based.

Ad.2 If adapted, provide name of original measure:
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 2000
Ad.7 Month and Year of most recent revision: 10, 2007
Ad.8 What is your frequency for review/update of this measure?
Ad.9 When is the next scheduled review/update for this measure?

Ad.10 Copyright statement/disclaimers:

Ad.11 -13 Additional Information web page URL or attachment: URL http://jcih.org/posstatemts.htm

Date of Submission (*MM/DD/YY*)**:** 08/30/2010

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1360 **NQF Project:** Child Health Quality Measures 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Audiological Evaluation no later than 3 months of age (EHDI-3)
De.2 **Brief description of measure***:* This measure assesses the percentage of newborns who did not pass hearing screening and have an audiological evaluation no later than 3 months of age.
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** This measure is paired with other measures relevant to the monitoring and measurement of the early screening evaluation and intervention process.
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Timeliness De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	C Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	D Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers 1a.2 1a.3 **Summary of Evidence of High Impact:** U.S. Preventive Services Task Force. The USPSTF recommends screening for hearing loss in all newborn infants. There is good evidence that newborn hearing screening testing is highly accurate and leads to earlier identification and treatment of infants with hearing loss. Good-quality evidence shows that early detection improves language outcomes. http://www.uspreventiveservicestaskforce.org/uspstf08/newbornhear/newbhearrs.pdf 1a.4 **Citations for Evidence of High Impact:** Nelson HD, Bougatsos C, Nygren P. Universal Newborn Hearing Screening: Systematic Review to Update the 2001 U.S. Preventive Services Task Force Recommendation. AHRQ Publication No. 08-05117-EF-4, July 2008. Agency for Healthcare Research and Quality (AHRQ), Rockville, MD. http://www.ahrq.gov/clinic/uspstf08/newbornhear/newbornart.htm	**1a** C☐ P☐ M☐ N☐
1b. Opportunity for Improvement 1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** From page 194 of the 2007 Joint Committee on Infant Hearing (JCIH) Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Program (http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals) "The JCIH supports the concept of regular	**1b** C☐ P☐ M☐ N☐

measurements of performance and recommends routine monitoring of these measures for interprogram comparison and continuous quality improvement. Performance benchmarks represent a consensus of expert opinion in the field of newborn hearing screening and intervention. The benchmarks are the minimal requirements that should be attained by high quality programs. Frequent measures of quality permit prompt recognition and correction of any unstable component of the EHDI process."

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
http://www.cdc.gov/ncbddd/ehdi/data.htm

1b.3 Citations for data on performance gap:
"Identifying Infants with Hearing Loss --- United States, 1999—2007." CDC Morbidity and Mortality Weekly Report (MMWR). March 5, 2010 / 59(08);220-223.
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5908a2.htm
"Newborn hearing screening and follow-up: are children receiving recommended services?" Public Health Rep. 2010 Mar-Apr;125 (2):199-207.

1b.4 Summary of Data on disparities by population group:

1b.5 Citations for data on Disparities:

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Children with hearing loss who are screened for hearing loss at birth have better language outcomes at school age than those not screened. Infants identified with hearing loss through universal screening have significantly earlier referral, diagnosis, and treatment than those identified in other ways. Language outcomes at school age strengthen the case for newborn hearing screening but are also dependent on effective methods of referral, follow-up, and treatment.

1c.2-3. Type of Evidence: Cohort study, Observational study, Evidence-based guideline, Expert opinion, Systematic synthesis of research

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
U.S. Preventive Services Task Force (www.ahrq.gov/clinic/uspstf/uspsnbhr.htm) Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921 (http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals)

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
Grade: B (Recommendation by the USPSTF recommends screening for hearing loss in all newborn infants.)

1c.6 Method for rating evidence: Scientific evidence review conducted by the Oregon Evidence-based Practice Center under contract to the Agency for Healthcare Research and Quality

1c.7 Summary of Controversy/Contradictory Evidence: There is limited evidence about the harms of screening, with conflicting research findings regarding anxiety associated with falsepositive test results. There is limited information about the harms of treatment.

1c.8 Citations for Evidence (*other than guidelines***):**

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
"All infants who do not pass the initial hearing screening and the subsequent rescreening should have

1c
C ☐
P ☐
M ☐
N ☐

appropriate audiological and medical evaluations to confirm the presence of hearing loss at no later than 3 months of age." Page 900. Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. 1c.10 **Clinical Practice Guideline Citation:** Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921 (http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals) 1c.11 **National Guideline Clearinghouse or other URL:** Newborn Screening Coding and Terminology Guide. http://newbornscreeningcodes.nlm.nih.gov/nb/sc/condition/HEAR 1c.12 **Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** Grade: B (Recommendation by the USPSTF recommends screening for hearing loss in all newborn infants.) 1c.13 **Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:** 1c.14 **Rationale for using this guideline over others:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 **Do you have a web page where current detailed measure specifications can be obtained?** S.2 **If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 **Numerator Statement (***Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Numerator contains the number of infants born during the time window who have not passed ("Fail / Refer") hearing screening and whose age is less than 91 days at the time of audiological diagnosis. 2a.2 **Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator. 2a.3 **Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** Total number of infants whose hearing screening results indicate "Fail / Refer" (LOINC# 54109-4: Newborn hearing screen – right = Refer LA10393-9 OR LOINC# 54108-6: OR Newborn hearing screen – left= Refer LA10393-9) AND with "Audiological Diagnosis" (SNOMED-CT equals "Hearing Normal" 164059009, "Permanent Conductive" 44057004, "Sensorineural" 60700002, "Mixed" 77507001, OR "Auditory Neuropathy Spectrum Disorder" 443805006) AND age of diagnosis is less than 91 days at the time of diagnosis.	**2a-specs** **C☐** **P☐** **M☐** **N☐**

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Denominator contains the number of infants born during the time window who have not passed ("Fail / Refer") hearing screening.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Infancy

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Total number of infants whose hearing screening results indicate "Fail / Refer" (LOINC# 54109-4: Newborn hearing screen – right = Refer LA10393-9 OR LOINC# 54108-6: OR Newborn hearing screen – left= Refer LA10393-9).

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Patient deceased: Patient has expired prior to 91 days of age.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Death Value Set.

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
(1) The time period for births included in the estimate is specified (see 2a.2, 2a.7).
(2) All live births that occurred during the time period are selected.
(3) Result of step 2 is filtered to remove children who died prior to 91 days of age (see 2a.9, 2a.10).

The denominator is calculated using the following step:
(4) Result of step 3 is filtered to be limited to the subset who did not pass ("Fail / Refer") their hearing screening (see 2a.8). This result is saved as the denominator (see 2a.4).

The numerator is calculated using the following step:
(5) Result of step 4 is further filtered limited to the subset for whom an Audiological Diagnosis of permanent hearing loss was made prior to 91 days of age (see 2a.3). This result is saved as the numerator (see 2a.1).

EHDI-3 is calculated using the following step:
(6) EHDI-3 is calculated by dividing the numerator (result of step 5) by the denominator (result of step 4).

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
Method to discriminate performance is based upon jurisdictionally based statistical measurement reflecting local and national variability.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for*

obtaining the sample, conducting the survey and guidance on minimum sample size (response rate): not applicable	
2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)* Electronic clinical data, Public health data/vital statistics, Electronic Health/Medical Record **2a.25 Data source/data collection instrument (***Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):** Electronic Health/Medical Record, Public health information system **2a.26-28 Data source/data collection instrument reference web page URL or attachment:** URL www.hitsp.org AND www.ihe.net/Technical_Framework/index.cfm#quality AND www.cdc.gov/ncbddd/ehdi/data.htm **2a.29-31 Data dictionary/code table web page URL or attachment:** URL http://newbornscreeningcodes.nlm.nih.gov AND www.hitsp.org AND www.ihe.net/Technical_Framework/index.cfm#quality **2a.32-35 Level of Measurement/Analysis** (*Check the level(s) for which the measure is specified and tested)* Clinicians: Individual, Facility/Agency, Population: national, Population: states **2a.36-37 Care Settings (***Check the setting(s) for which the measure is specified and tested)* Ambulatory Care: Office, Ambulatory Care: Clinic **2a.38-41 Clinical Services** (*Healthcare services being measured, check all that apply*) Clinicians: Audiologist, Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)	
TESTING/ANALYSIS	
2b. Reliability testing **2b.1 Data/sample** *(description of data/sample and size)***:** Data used in this measure are included in the EHR. As noted in the NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties, "…the EHR will be considered the authoritative source of clinical information and legal record of care. Quality measures based on EHRs require exporting clinical information recorded by healthcare clinicians from discrete computer readable fields; therefore, measurement errors due to manual abstraction, coding by persons other than the originator, or transcription are eliminated." As these data elements are extracted from EHRs using computer programming, they "are by virtue of automation repeatable (reliable); therefore, testing at the data element level should focus on validity… reliability of data items may be bypassed if validity of data items is demonstrated." EHR data used in this measure reflect part of a national, population-based public health surveillance data collection. Data are collected at the individual-child level within each state/territory and reported nationally at an aggregated state-level to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and territories reported 65,339 infants did not pass their final or most recent hearing screening **2b.2 Analytic Method** *(type of reliability & rationale, method for testing)***:** As noted in 2b.1., given data are extracted from EHRs, "reliability of data items may be bypassed if validity of data items is demonstrated". (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties) **2b.3 Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:** While the use of EHRs for data elements reflects a particular strength of this measure, "EHRs and EHR measures are new and will most likely require some adjustment of local EHR structures and recording practices to meet standards." (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This has been and will continue to be addressed in the manner	**2b** **C**☐ **P**☐ **M**☐ **N**☐

recommended in the Guidance document cited above. First, nationally, CDC EHDI has and will continue to provide states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are and will continue to be encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Second, state EHDI programs have been and will continue to be encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.	
2c. Validity testing 2c.1 **Data/sample** *(description of data/sample and size)*: Data used in this measure reflect EHR extracted information that is part of a national, population-based public health surveillance data collection. Data are collected at the individual-child level within each state/territory, and reported at state-level aggregate form nationally to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and territories reported 65,339 infants did not pass their final or most recent hearing screening. 2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*: A formal and systematic testing of face validity of the measure score as an indicator of quality has been conducted in order to serve as an acceptable indicator for validity of the measure score (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This evaluation has been conducted through the Joint Committee on Infant Hearing (JCIH), the Directors of Speech and Hearing Programs in State Health and Welfare Agencies (DSHPSHWA) and the CDC EHDI Data Committee. 2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*: Face validity has been systematically assessed by relevant stakeholders in order to assess whether the measure represents quality care for this specific topic and whether the focus of this measure is the most important aspect of quality for this specific topic (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties).	**2c** C☐ P☐ M☐ N☐
2d. Exclusions Justified 2d.1 **Summary of Evidence supporting exclusion(s):** Not applicable –exclusions are limited to cases of infant death before the child was 91 days of age. 2d.2 **Citations for Evidence:** Not applicable – see 2d.1. 2d.3 **Data/sample** *(description of data/sample and size)*: Not applicable – see 2d.1. 2d.4 **Analytic Method** *(type analysis & rationale)*: Not applicable – see 2d.1. 2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: Not applicable – see 2d.1.	**2d** C☐ P☐ M☐ N☐ NA☐
2e. Risk Adjustment for Outcomes/ Resource Use Measures 2e.1 **Data/sample** *(description of data/sample and size)*: Not applicable – no risk adjustment is included 2e.2 **Analytic Method** *(type of risk adjustment, analysis, & rationale)*: Not applicable – no risk adjustment is included 2e.3 **Testing Results** *(risk model performance metrics)*: Not applicable – no risk adjustment is included 2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:** Not applicable – no risk adjustment is included	**2e** C☐ P☐ M☐ N☐ NA☐

2f. Identification of Meaningful Differences in Performance **2f.1 Data/sample from Testing or Current Use** *(description of data/sample and size)*: National, population-based public health surveillance data, collected at the individual-child level within each state/territory, and reported at state-level aggregate form nationally to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and territories reported 65,339 infants did not pass their final or most recent hearing screening. **2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Statistical analysis comparing individual entities (provider, network of providers, state/territory) to the mean level of performance for similar entities. When appropriate, this can be limited to similar entities within a given jurisdiction (e.g., performance of a specific provider relative to other providers in a state) or nationally (e.g., mean performance across an entire state relative to other state/territories). In addition, performance can be evaluated through direct comparison to current national standards of performance (e.g., CDC National Goals, Joint Committee on Infant Hearing,Healthy People 2020.) **2f.3 Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: For statistical analyses comparing individual entities to the mean level of performance for similar entities, performance that is 2 standard deviations below the corresponding mean can be flagged. When appropriate, this can be done both within a given jurisdiction and nationally. For example, overall performance for a low performing state may be more than 2 standard deviations below the mean for all states/territories, resulting in that state being identified. However, within that state, there may be no significant difference among providers (i.e., all are performing equally poorly). For direct comparisons to current national standards, identification will consist of (1) a determination that performance falls below the standard, and (2) a measure of the difference between observed performance and the stated standard.	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods **2g.1 Data/sample** *(description of data/sample and size)*: All data will be collected through Electronic Health Records – not applicable **2g.2 Analytic Method** *(type of analysis & rationale)*: All data will be collected through Electronic Health Records – not applicable **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*: All data will be collected through Electronic Health Records – not applicable	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: Not applicable – measure is not stratified **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐
3. USABILITY	

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** In use **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:** Healthy People 2010 objective 28-11: Increase the proportion of newborns who are screened for hearing loss by age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months. Proposed Healthy People 2020 ENT-VSL HP2020–8: Increase the proportion of newborns who are screened for hearing loss by no later than age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months. **3a.3 If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** CDC Early Hearing Detection and Intervention (EHDI) Screening and Follow-up Survey (OMB No. 0920-0733)http://www.cdc.gov/ncbddd/ehdi/documents/EHDI_Web_Draft_Survey_12_06.pdf **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) **3a.4 Data/sample** *(description of data/sample and size)***:** This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 47 states and territories reported 65,339 infants did not pass their final or most recent hearing screening. **3a.5 Methods** *(e.g., focus group, survey, QI project)***:** Hearing Screening and Follow-up Survey (HSFS): OMB No. 0920-0733 **3a.6 Results** *(qualitative and/or quantitative results and conclusions)***:** Qualitative: "Identifying Infants with Hearing Loss --- United States, 1999—2007." CDC Morbidity and Mortality Weekly Report (MMWR). March 5, 2010 / 59(08);220-223. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5908a2.htm	**3a** C☐ P☐ M☐ N☐
3b/3c. Relation to other NQF-endorsed measures **3b.1 NQF # and Title of similar or related measures:** no current NQF endorsed measure	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?** The Centers for Disease Control and Prevention (CDC), the HRSA Maternal and Child Health Bureau (MCHB) and the National Committee for Quality Assurance (NCQA) have submitted 2010 Child Health Quality Measures to NQF that relate to the topic of newborn screening, however the measures target different care settings and data sources. CDC, MCHB, and NCQA are collaborating to ensure the measure specifications have distinctive additive value and are harmonized.	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:**	**3c** C☐ P☐ M☐ N☐

5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:	**NA☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** **C☐** **P☐** **M☐** **N☐**
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry), Survey	**4a** **C☐** **P☐** **M☐** **N☐**
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** **C☐** **P☐** **M☐** **N☐**
4c. Exclusions **4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No **4c.2 If yes, provide justification.**	**4c** **C☐** **P☐** **M☐** **N☐** **NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences **4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** The use of EHRs for this measure provide a number of strengths that facilitate data quality, including EHRs serving as the authoritative source of clinical information and legal record of care. Furthermore, the use of discrete, computer readable fields results in reduced measurement error that may emerge from manual abstraction, third party coding, or transcription errors. Nevertheless, potential sources of error exist and include incorrect measure, code, or logic specification, as well as incorrect programming, system structure, or data exporting code, or inconsistent field definitions across providers or users. These can be audited through quality control measures. For example, CDC EHDI provides states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Furthermore, state EHDI programs are encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.	**4d** **C☐** **P☐** **M☐** **N☐**

4e. Data Collection Strategy/Implementation **4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Requires an accurate standardized denominator and numerator to successfully determine that all infants have been accounted for and received necessary care. The limitation has been that providers have only reported on a subset of infants seen. **4e.2 Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Audiological Evaluation no later than 3 months of age is not a proprietary measure. Public health EHDI programs have already assumed the cost to implement and report this measure. Federal funds have been provided to public health programs for this data collection. **4e.3 Evidence for costs:** **4e.4 Business case documentation:**	**4e** **C☐** **P☐** **M☐** **N☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**
CONTACT INFORMATION	
Co.1 Measure Steward (Intellectual Property Owner) **Co.1 Organization** Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333 **Co.2 Point of Contact** John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-	
Measure Developer If different from Measure Steward **Co.3 Organization** Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333 **Co.4 Point of Contact** Craig, Mason, Ph.D., Craig_Mason@umit.maine.edu, 207-581-9059-	
Co.5 Submitter If different from Measure Steward POC John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-, Centers for Disease Control and Prevention	
Co.6 Additional organizations that sponsored/participated in measure development On July 24, the Joint Committee on Infant Hearing (JCIH) voted unanimously to proceed with the submission these	

EHDI measures to NQF. Liaison representatives were present from all of the participating organizations: American Academy of Pediatrics (AAP), American Academy of Audiology (AAA), American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS), American Speech-Language-Hearing Association (ASHA), Alexander Graham Bell Association for the Deaf and Hard of Hearing, Council of Education of the Deaf (CED), and Directors of Speech and Hearing Programs in State Health and Welfare
Agencies (DSHPSHWA).

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
CDC EHDI Data Committee and the Joint Committee on Infant Hearing (JCIH) both participated in the development of EHDI quality benchmarks on which this measure is based.

Ad.2 If adapted, provide name of original measure:
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 2000
Ad.7 Month and Year of most recent revision: 10, 2007
Ad.8 What is your frequency for review/update of this measure?
Ad.9 When is the next scheduled review/update for this measure?

Ad.10 Copyright statement/disclaimers:

Ad.11 -13 Additional Information web page URL or attachment: URL http://jcih.org/posstatemts.htm

Date of Submission (*MM/DD/YY*)**:** 08/30/2010

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1361 **NQF Project:** Child Health Quality Measures 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Intervention no later than 6 months of age (EHDI-4a)
De.2 **Brief description of measure***:* This measure assesses the proportion of infants with permanent hearing loss who have been referred to intervention services no later than age 6 months of age.
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** This measure is paired with other measures relevant to the monitoring and measurement of the early screening evaluation and intervention process.
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Timeliness De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	C Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	D Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers **1a.2** **1a.3 Summary of Evidence of High Impact:** U.S. Preventive Services Task Force. The USPSTF recommends screening for hearing loss in all newborn infants. There is good evidence that newborn hearing screening testing is highly accurate and leads to earlier identification and treatment of infants with hearing loss. Good-quality evidence shows that early detection improves language outcomes. http://www.uspreventiveservicestaskforce.org/uspstf08/newbornhear/newbhearrs.pdf **1a.4 Citations for Evidence of High Impact:** Nelson HD, Bougatsos C, Nygren P. Universal Newborn Hearing Screening: Systematic Review to Update the 2001 U.S. Preventive Services Task Force Recommendation. AHRQ Publication No. 08-05117-EF-4, July 2008. Agency for Healthcare Research and Quality (AHRQ), Rockville, MD. http://www.uspreventiveservicestaskforce.org/uspstf08/newbornhear/newbornart.pdf	**1a** C☐ P☐ M☐ N☐
1b. Opportunity for Improvement **1b.1 Benefits (improvements in quality) envisioned by use of this measure:** From page 194 of the 2007 Joint Committee on Infant Hearing (JCIH) Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs(http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OIA&keytype=ref&siteid=aapjournals)	**1b** C☐ P☐ M☐ N☐

"The JCIH supports the concept of regular measurements of performance and recommends routine monitoring of these measures for interprogram comparison and continuous quality improvement. Performance benchmarks represent a consensus of expert opinion in the field of newborn hearing screening and intervention. The benchmarks are the minimal requirements that should be attained by high quality programs. Frequent measures of quality permit prompt recognition and correction of any unstable component of the EHDI process."

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
http://www.cdc.gov/ncbddd/ehdi/data.htm

1b.3 Citations for data on performance gap:
"Identifying Infants with Hearing Loss --- United States, 1999—2007." CDC Morbidity and Mortality Weekly Report (MMWR). March 5, 2010 / 59(08);220-223.
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5908a2.htm
"Newborn hearing screening and follow-up: are children receiving recommended services?" Public Health Rep. 2010 Mar-Apr;125(2):199-207.

1b.4 Summary of Data on disparities by population group:

1b.5 Citations for data on Disparities:

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Children with hearing loss who are screened for hearing loss at birth have better language outcomes at school age than those not screened. Infants identified with hearing loss through universal screening have significantly earlier referral, diagnosis, and treatment than those identified in other ways. Language outcomes at school age strengthen the case for newborn hearing screening but are also dependent on effective methods of referral, follow-up, and treatment.

1c.2-3. Type of Evidence: Cohort study, Observational study, Evidence-based guideline, Expert opinion, Systematic synthesis of research

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
U.S. Preventive Services Task Force (www.ahrq.gov/clinic/uspstf/uspsnbhr.htm)
Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921
(http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals)

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
Grade: B (Recommendation by the USPSTF recommends screening for hearing loss in all newborn infants.)

1c.6 Method for rating evidence: Scientific evidence review conducted by the Oregon Evidence-based Practice Center under contract to the Agency for Healthcare Research and Quality.

1c.7 Summary of Controversy/Contradictory Evidence: There is limited evidence about the harms of screening, with conflicting research findings regarding anxiety associated with false-positive test results. There is limited information about the harms of treatment

1c.8 Citations for Evidence (*other than guidelines***):**

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**

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"For infants with confirmed hearing loss who qualify for Part C services, the percentage for whom parents have signed an IFSP by no later than 6 months of age; the recommended benchmark is 90%." Page 914 from the Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921 (http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals) 1c.10 **Clinical Practice Guideline Citation:** Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921 (http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals) 1c.11 **National Guideline Clearinghouse or other URL:** Newborn Screening Coding and Terminology Guide. http://newbornscreeningcodes.nlm.nih.gov/nb/sc/condition/HEAR 1c.12 **Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** Grade: B (Recommendation by the USPSTF recommends screening for hearing loss in all newborn infants.) 1c.13 **Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:** 1c.14 **Rationale for using this guideline over others:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 **Do you have a web page where current detailed measure specifications can be obtained?** S.2 **If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 **Numerator Statement (***Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Numerator contains the number of infants born during the time window that have been diagnosed with permanent hearing loss, whose age is less than 6 months at the time of referral to intervention services. 2a.2 **Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator. 2a.3 **Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** Total number of infants with "Audiological Diagnosis" (SNOMED-CT equals "Hearing Normal" 164059009, "Permanent Conductive" 44057004, "Sensorineural" 60700002, "Mixed" 77507001, "Auditory Neuropathy	**2a-specs** **C☐** **P☐** **M☐** **N☐**

Spectrum Disorder" 443805006, "Transient Hearing Loss" 123123005) and date of EHDI referral to education service" (SNOMED-CT 415271004) is less than 181 days since birth.

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Denominator contains the number of infants born during the time window who that have been diagnosed with permanent hearing loss.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Infancy

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Total number of infants with "Audiological Diagnosis" (SNOMED-CT equals "Hearing Normal" 164059009, "Permanent Conductive" 44057004, "Sensorineural" 60700002, "Mixed" 77507001, or "Auditory Neuropathy Spectrum Disorder" 443805006.

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Patient deceased: Patient has expired prior to 181 days of age.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Death Value Set.

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
(1) The time period for births included in the estimate is specified (see 2a.2, 2a.7).
(2) All live births that occurred during the time period for a given provider/practice are selected.
(3) Result of step 2 is filtered to remove children who died prior to 181 days of age (see 2a.9, 2a.10).

The denominator is calculated using the following step:
(4) Result of step 3 is filtered to be limited to the subset with an Audiological Diagnosis of permanent hearing loss (see 2a.8). This result is saved as the denominator (see 2a.4).

The numerator is calculated using the following step:
(5) Result of step 4 is further filtered to be limited to the subset for whom the date of EHDI referral to education service is less than 181 days since birth (see 2a.3). This result is saved as the numerator (see 2a.1).

EHDI-4a is calculated using the following step:
(6) EHDI-4a is calculated by dividing the numerator (result of step 5) by the denominator (result of step 4).

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**

Method to discriminate performance is based upon jurisdictionally based statistical measurement reflecting local and national variability.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
not applicable

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic clinical data, Public health data/vital statistics, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
Electronic Health/Medical Record, Public health information system

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
www.hitsp.org AND www.ihe.net/Technical_Framework/index.cfm#quality AND
www.cdc.gov/ncbddd/ehdi/data.htm

2a.29-31 Data dictionary/code table web page URL or attachment: URL
http://newbornscreeningcodes.nlm.nih.gov AND www.hitsp.org AND
www.ihe.net/Technical_Framework/index.cfm#quality

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Individual, Facility/Agency, Population: national, Population: states

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Ambulatory Care: Office, Ambulatory Care: Clinic

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Audiologist, Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** Data used in this measure are included in the EHR. As noted in the NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties, "…the EHR will be considered the authoritative source of clinical information and legal record of care. Quality measures based on EHRs require exporting clinical information recorded by healthcare clinicians from discrete computer readable fields; therefore, measurement errors due to manual abstraction, coding by persons other than the originator, or transcription are eliminated."
As these data elements are extracted from EHRs using computer programming, they "are by virtue of automation repeatable (reliable); therefore, testing at the data element level should focus on validity… reliability of data items may be bypassed if validity of data items is demonstrated."
EHR data used in this measure reflect part of a national, population-based public health surveillance data collection. Data are collected at the individual-child level within each state/territory and reported nationally at an aggregated state-level to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 43 states and territories reported 3,364 infants were identified with permanent congenital hearing loss.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
As noted in 2b.1., given data are extracted from EHRs, "reliability of data items may be bypassed if validity of data items is demonstrated". (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties)

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
While the use of EHRs for data elements reflects a particular strength of this measure, "EHRs and EHR

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measures are new and will most likely require some adjustment of local EHR structures and recording practices to meet standards." (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This has been and will continue to be addressed in the manner recommended in the Guidance document cited above. First, nationally, CDC EHDI has and will continue to provide states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are and will continue to be encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Second, state EHDI programs have been and will continue to be encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.	
2c. Validity testing 2c.1 **Data/sample** *(description of data/sample and size)*: Data used in this measure reflect EHR extracted information that is part of a national, population-based public health surveillance data collection. Data are collected at the individual-child level within each state/territory, and reported at state-level aggregate form nationally to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 43 states and territories reported 3,364 infants were identified with permanent congenital hearing loss. 2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*: A formal and systematic testing of face validity of the measure score as an indicator of quality has been conducted in order to serve as an acceptable indicator for validity of the measure score (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This evaluation has been conducted through the Joint Committee on Infant Hearing (JCIH), the Directors of Speech and Hearing Programs in State Health and Welfare Agencies (DSHPSHWA) and the CDC EHDI Data Committee. 2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*: Face validity has been systematically assessed by relevant stakeholders in order to assess whether the measure represents quality care for this specific topic and whether the focus of this measure is the most important aspect of quality for this specific topic (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties).	**2c** C☐ P☐ M☐ N☐
2d. Exclusions Justified 2d.1 **Summary of Evidence supporting exclusion(s):** Not applicable –exclusions are limited to cases of infant death before the child was 181 days of age. 2d.2 **Citations for Evidence:** Not applicable – see 2d.1. 2d.3 **Data/sample** *(description of data/sample and size)*: Not applicable – see 2d.1. 2d.4 **Analytic Method** *(type analysis & rationale)*: Not applicable – see 2d.1. 2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: Not applicable – see 2d.1.	**2d** C☐ P☐ M☐ N☐ NA☐
2e. Risk Adjustment for Outcomes/ Resource Use Measures 2e.1 **Data/sample** *(description of data/sample and size)*: Not applicable – no risk adjustment is included 2e.2 **Analytic Method** *(type of risk adjustment, analysis, & rationale)*: Not applicable – no risk adjustment is included 2e.3 **Testing Results** *(risk model performance metrics)*: Not applicable – no risk adjustment is included	**2e** C☐ P☐ M☐ N☐ NA☐

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: Not applicable – no risk adjustment is included	
2f. Identification of Meaningful Differences in Performance **2f.1 Data/sample from Testing or Current Use** *(description of data/sample and size)*: National, population-based public health surveillance data, collected at the individual-child level within each state/territory, and reported at state-level aggregate form nationally to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 43 states and territories reported 3,364 infants were identified with permanent congenital hearing loss. **2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Statistical analysis comparing individual entities (provider, network of providers, state/territory) to the mean level of performance for similar entities. When appropriate, this can be limited to similar entities within a given jurisdiction (e.g., performance of a specific provider relative to other providers in a state) or nationally (e.g., mean performance across an entire state relative to other state/territories). In addition, performance can be evaluated through direct comparison to current national standards of performance (e.g., CDC National Goals, Joint Committee on Infant Hearing,Healthy People 2020.) **2f.3 Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: For statistical analyses comparing individual entities to the mean level of performance for similar entities, performance that is 2 standard deviations below the corresponding mean can be flagged. When appropriate, this can be done both within a given jurisdiction and nationally. For example, overall performance for a low performing state may be more than 2 standard deviations below the mean for all states/territories, resulting in that state being identified. However, within that state, there may be no significant difference among providers (i.e., all are performing equally poorly).	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods **2g.1 Data/sample** *(description of data/sample and size)*: All data will be collected through Electronic Health Records – not applicable **2g.2 Analytic Method** *(type of analysis & rationale)*: All data will be collected through Electronic Health Records – not applicable **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*: All data will be collected through Electronic Health Records – not applicable	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: Not applicable – measure is not stratified **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand	Eval

the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Rating
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** In use **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:** Healthy People 2010 objective 28-11: Increase the proportion of newborns who are screened for hearing loss by age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months. Proposed Healthy People 2020 ENT-VSL HP2020–8: Increase the proportion of newborns who are screened for hearing loss by no later than age 1 month, have audiologic evaluation by age 3 months, and are enrolled in appropriate intervention services by age 6 months. **3a.3 If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** CDC Early Hearing Detection and Intervention (EHDI) Screening and Follow-up Survey (OMB No. 0920-0733) http://www.cdc.gov/ncbddd/ehdi/documents/EHDI_Web_Draft_Survey_12_06.pdf **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) **3a.4 Data/sample** *(description of data/sample and size)***:** This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 43 states and territories reported 3,364 infants were identified with permanent congenital hearing loss. **3a.5 Methods** *(e.g., focus group, survey, QI project)***:** Hearing Screening and Follow-up Survey (HSFS): OMB No. 0920-0733 **3a.6 Results** *(qualitative and/or quantitative results and conclusions)***:** Qualitative: "Identifying Infants with Hearing Loss --- United States, 1999—2007." CDC Morbidity and Mortality Weekly Report (MMWR). March 5, 2010 / 59(08);220-223. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5908a2.htm http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5241a1.htm	**3a** **C**☐ **P**☐ **M**☐ **N**☐
3b/3c. Relation to other NQF-endorsed measures **3b.1 NQF # and Title of similar or related measures:** no current NQF endorsed measure	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?** The Centers for Disease Control and Prevention (CDC), the HRSA Maternal and Child Health Bureau (MCHB) and the National Committee for Quality Assurance (NCQA) have submitted 2010 Child Health Quality Measures to NQF that relate to the topic of newborn screening, however the measures target different care settings and data sources. CDC, MCHB, and NCQA are collaborating to ensure the measure specifications have distinctive additive value and are harmonized.	**3b** **C**☐ **P**☐ **M**☐ **N**☐ **NA**☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:**	**3c** **C**☐ **P**☐ **M**☐

5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**N☐ NA☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** **C☐** **P☐** **M☐** **N☐**
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry), Survey	**4a** **C☐** **P☐** **M☐** **N☐**
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** **C☐** **P☐** **M☐** **N☐**
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	**4c** **C☐** **P☐** **M☐** **N☐** **NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** The use of EHRs for this measure provide a number of strengths that facilitate data quality, including EHRs serving as the authoritative source of clinical information and legal record of care. Furthermore, the use of discrete, computer readable fields results in reduced measurement error that may emerge from manual abstraction, third party coding, or transcription errors. Nevertheless, potential sources of error exist and include incorrect measure, code, or logic specification, as well as incorrect programming, system structure, or data exporting code, or inconsistent field definitions across providers or users. These can be audited through quality control measures. For example, CDC EHDI provides states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Furthermore, state EHDI programs are encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.	**4d** **C☐** **P☐** **M☐** **N☐**

4e. Data Collection Strategy/Implementation

4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:**
Requires an accurate standardized denominator and numerator to successfully determine that all infants have been accounted for and received necessary care. The limitation has been that providers have only reported on a subset of infants seen.

4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:**
Intervention no later than 6 months of age is not a proprietary measure
Public health EHDI programs have already assumed the cost to implement and report this measure. Federal funds have been provided to public health programs for this data collection.

4e.3 **Evidence for costs:**

4e.4 **Business case documentation:**

4e
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M☐
N☐

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?

4

Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?**
Rationale:

4
C☐
P☐
M☐
N☐

RECOMMENDATION

(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**

Time-limited ☐

Steering Committee: Do you recommend for endorsement?
Comments:

Y☐
N☐
A☐

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333

Co.2 **Point of Contact**
John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-

Measure Developer If different from Measure Steward
Co.3 **Organization**
Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333

Co.4 **Point of Contact**
Craig, Mason, Ph.D., Craig_Mason@umit.maine.edu, 207-581-9059-

Co.5 **Submitter If different from Measure Steward POC**
John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-, Centers for Disease Control and Prevention

Co.6 **Additional organizations that sponsored/participated in measure development**
On July 24, the Joint Committee on Infant Hearing (JCIH) voted unanimously to proceed with the submission these EHDI measures to NQF. Liaison representatives were present from all of the participating organizations: American

Academy of Pediatrics (AAP), American Academy of Audiology (AAA), American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS), American Speech-Language-Hearing Association (ASHA), Alexander Graham Bell Association for the Deaf and Hard of Hearing, Council of Education of the Deaf (CED), and Directors of Speech and Hearing Programs in State Health and Welfare Agencies (DSHPSHWA).
ADDITIONAL INFORMATION
Workgroup/Expert Panel involved in measure development **Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.** CDC EHDI Data Committee and the Joint Committee on Infant Hearing (JCIH) both participated in the development of EHDI quality benchmarks on which this measure is based.
Ad.2 If adapted, provide name of original measure: **Ad.3-5 If adapted, provide original specifications URL or attachment**
Measure Developer/Steward Updates and Ongoing Maintenance **Ad.6 Year the measure was first released:** 2000 **Ad.7 Month and Year of most recent revision:** 10, 2007 **Ad.8 What is your frequency for review/update of this measure?** **Ad.9 When is the next scheduled review/update for this measure?**
Ad.10 Copyright statement/disclaimers:
Ad.11 -13 Additional Information web page URL or attachment: URL http://jcih.org/posstatemts.htm
Date of Submission (*MM/DD/YY*)**:** 08/30/2010

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1362 **NQF Project:** Child Health Quality Measures 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Referral to intervention within 48 hours (EHDI-4b)
De.2 **Brief description of measure***:* This measure assesses the proportion of infants and young children referred to intervention within 48 hours of the confirmation of permanent hearing loss.
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** This measure is paired with other measures relevant to the monitoring and measurement of the early screening evaluation and intervention process.
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Timeliness De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	C Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** No, testing will be completed within 12 months D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	D Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers 1a.2 1a.3 **Summary of Evidence of High Impact:** U.S. Preventive Services Task Force. The USPSTF recommends screening for hearing loss in all newborn infants. There is good evidence that newborn hearing screening testing is highly accurate and leads to earlier identification and treatment of infants with hearing loss. Good-quality evidence shows that early detection improves language outcomes. http://www.uspreventiveservicestaskforce.org/uspstf08/newbornhear/newbhearrs.pdf 1a.4 **Citations for Evidence of High Impact:** Nelson HD, Bougatsos C, Nygren P. Universal Newborn Hearing Screening: Systematic Review to Update the 2001 U.S. Preventive Services Task Force Recommendation. AHRQ Publication No. 08-05117-EF-4, July 2008. Agency for Healthcare Research and Quality (AHRQ), Rockville, MD. http://www.uspreventiveservicestaskforce.org/uspstf08/newbornhear/newbornart.pdf	**1a** C☐ P☐ M☐ N☐
1b. Opportunity for Improvement 1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** From page 194 of the 2007 Joint Committee on Infant Hearing (JCIH) Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs(http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OIA&keytype=ref&siteid=aapjournals)	**1b** C☐ P☐ M☐ N☐

"The JCIH supports the concept of regular measurements of performance and recommends routine monitoring of these measures for interprogram comparison and continuous quality improvement. Performance benchmarks represent a consensus of expert opinion in the field of newborn hearing screening and intervention. The benchmarks are the minimal requirements that should be attained by high quality programs. Frequent measures of quality permit prompt recognition and correction of any unstable component of the EHDI process."

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:

1b.3 Citations for data on performance gap:

1b.4 Summary of Data on disparities by population group:

1b.5 Citations for data on Disparities:

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Children with hearing loss who are screened for hearing loss at birth have better language outcomes at school age than those not screened. Infants identified with hearing loss through universal screening have significantly earlier referral, diagnosis, and treatment than those identified in other ways. Language outcomes at school age strengthen the case for newborn hearing screening but are also dependent on effective methods of referral, follow-up, and treatment.

1c.2-3. Type of Evidence: Cohort study, Observational study, Evidence-based guideline, Expert opinion, Systematic synthesis of research

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
U.S. Preventive Services Task Force (www.ahrq.gov/clinic/uspstf/uspsnbhr.htm)
Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Joint Committee on Infant Hearing. Pediatrics 2007;120;898-921
(http://pediatrics.aappublications.org/cgi/content/full/120/4/898?ijkey=oj9BAleq21OlA&keytype=ref&siteid=aapjournals)

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
Grade: B (Recommendation by the USPSTF recommends screening for hearing loss in all newborn infants.)

1c.6 Method for rating evidence: Scientific evidence review conducted by the Oregon Evidence-based Practice Center under contract to the Agency for Healthcare Research and Quality.

1c.7 Summary of Controversy/Contradictory Evidence: There is limited evidence about the harms of screening, with conflicting research findings regarding anxiety associated with false positive test results. There is limited information about the harms of treatment

1c.8 Citations for Evidence (*other than guidelines***):**

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
Federal Regulations for 34 CFR Part 303, Early Intervention Program for Infants and Toddlers with Disabilities. Subpart D: Program and Service Components of Statewide Early Intervention Services. "The procedures required in paragraph (b)(1) of this section must ensure that referrals are made no more than two working days after a child has been identified"

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Sec. 303.342(a) or Sec. 303.345. [Page 193] http://www.nectac.org/idea/303regs.asp **1c.10 Clinical Practice Guideline Citation:** **1c.11 National Guideline Clearinghouse or other URL:** **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** Grade: B (Recommendation by the USPSTF recommends screening for hearing loss in all newborn infants.) **1c.13 Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)*: **1c.14 Rationale for using this guideline over others:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, **met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Numerator contains the number of infants diagnosed with permanent hearing loss who are referred to intervention within 48 hours of the confirmation of hearing loss. **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator. **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** Total number of infants with "Audiological Diagnosis" (SNOMED-CT equals “Hearing Normal” 164059009, “Permanent Conductive” 44057004, “Sensorineural” 60700002, “Mixed” 77507001, “Auditory Neuropathy Spectrum Disorder” 443805006, “Transient Hearing Loss” 123123005) and whose date of diagnosis and date of referral to education service” (SNOMED-CT 415271004) is within 48 hours.	
2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):** Denominator contains the number of infants that have been diagnosed with permanent hearing loss. **2a.5 Target population gender:** Female, Male **2a.6 Target population age range:** Infancy	**2a-specs** **C☐** **P☐** **M☐** **N☐**

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
The measurement time period varies upon needs of the particular user (e.g. calendar year, quarterly, monthly) but must be the same for both the numerator and denominator.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Total number of infants with "Audiological Diagnosis" (SNOMED-CT equals "Hearing Normal" 164059009, "Permanent Conductive" 44057004, "Sensorineural" 60700002, "Mixed" 77507001, or "Auditory Neuropathy Spectrum Disorder" 443805006.

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Patient deceased: Patient has expired.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Death Value Set.

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
(1) The time period for births included in the estimate is specified (see 2a.2, 2a.7).
(2) All live births that occurred during the time period for a given provider/practice are selected.
(3) Result of step 2 is filtered to remove children who died (see 2a.9, 2a.10).

The denominator is calculated using the following step:
(4) Result of step 3 is filtered to be limited to the subset with an Audiological Diagnosis of permanent hearing loss (see 2a.8) by 36 months of age (see 2a.7). This result is saved as the denominator (see 2a.4).

The numerator is calculated using the following step:
(5) Result of step 4 is further filtered to be limited to the subset for which the date of EHDI referral to education service is within 48 hours after the date of diagnosis (see 2a.3). This result is saved as the numerator (see 2a.1).

EHDI-4b is calculated using the following step:
(6) EHDI-4b is calculated by dividing the numerator (result of step 5) by the denominator (result of step 4).

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
Method to discriminate performance is based upon jurisdictionally based statistical measurement reflecting local and national variability.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic clinical data, Public health data/vital statistics, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**

Electronic Health/Medical Record, Public health information system

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
www.hitsp.org AND www.ihe.net/Technical_Framework/index.cfm#quality AND
www.cdc.gov/ncbddd/ehdi/data.htm

2a.29-31 Data dictionary/code table web page URL or attachment: URL
http://newbornscreeningcodes.nlm.nih.gov AND www.hitsp.org AND
www.ihe.net/Technical_Framework/index.cfm#quality

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Individual, Facility/Agency, Population: national, Population: states

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Ambulatory Care: Office, Ambulatory Care: Clinic

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Audiologist, Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** 2b.1. Data Sample (Description of data sample and size)
Data used in this measure are included in the EHR. As noted in the NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties, "…the EHR will be considered the authoritative source of clinical information and legal record of care. Quality measures based on EHRs require exporting clinical information recorded by healthcare clinicians from discrete computer readable fields; therefore, measurement errors due to manual abstraction, coding by persons other than the originator, or transcription are eliminated."
As these data elements are extracted from EHRs using computer programming, they "are by virtue of automation repeatable (reliable); therefore, testing at the data element level should focus on validity… reliability of data items may be bypassed if validity of data items is demonstrated."
EHR data used in this measure reflect part of a national, population-based public health surveillance data collection. Data are collected at the individual-child level within each state/territory and reported nationally at an aggregated state-level to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 43 states and territories reported 3,364 infants were identified with permanent congenital hearing loss.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
As noted in 2b.1., given data are extracted from EHRs, "reliability of data items may be bypassed if validity of data items is demonstrated". (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties)

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
While the use of EHRs for data elements reflects a particular strength of this measure, "EHRs and EHR measures are new and will most likely require some adjustment of local EHR structures and recording practices to meet standards." (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This has been and will continue to be addressed in the manner recommended in the Guidance document cited above. First, nationally, CDC EHDI has and will continue to provide states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are and will continue to be encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Second, state EHDI programs have been and will continue to be encouraged to conduct their own reliability/validity studies,

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and to encourage data quality studies on the part of their reporting sources.	
2c. Validity testing **2c.1 Data/sample** *(description of data/sample and size)*: Data used in this measure reflect EHR extracted information that is part of a national, population-based public health surveillance data collection. Data are collected at the individual-child level within each state/territory, and reported at state-level aggregate form nationally to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 43 states and territories reported 3,364 infants were identified with permanent congenital hearing loss. **2c.2 Analytic Method** *(type of validity & rationale, method for testing)*: A formal and systematic testing of face validity of the measure score as an indicator of quality will be conducted in order to serve as an acceptable indicator for validity of the measure score (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties). This evaluation will be conducted through the CDC EHDI Data Committee. **2c.3 Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*: Face validity has been systematically assessed by relevant stakeholders in order to assess whether the measure represents quality care for this specific topic and whether the focus of this measure is the most important aspect of quality for this specific topic (NQF draft Guidance for Measure Testing and Evaluating Scientific Acceptability of Measure Properties).	**2c** C☐ P☐ M☐ N☐
2d. Exclusions Justified **2d.1 Summary of Evidence supporting exclusion(s):** Not applicable –exclusions are limited to cases of infant death **2d.2 Citations for Evidence:** Not applicable – see 2d.1. **2d.3 Data/sample** *(description of data/sample and size)*: Not applicable – see 2d.1. **2d.4 Analytic Method** *(type analysis & rationale)*: Not applicable – see 2d.1. **2d.5 Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: Not applicable – see 2d.1.	**2d** C☐ P☐ M☐ N☐ NA☐
2e. Risk Adjustment for Outcomes/ Resource Use Measures **2e.1 Data/sample** *(description of data/sample and size)*: Not applicable – no risk adjustment is included **2e.2 Analytic Method** *(type of risk adjustment, analysis, & rationale)*: Not applicable – no risk adjustment is included **2e.3 Testing Results** *(risk model performance metrics)*: Not applicable – no risk adjustment is included **2e.4 If outcome or resource use measure is not risk adjusted, provide rationale:** Not applicable – no risk adjustment is included	**2e** C☐ P☐ M☐ N☐ NA☐
2f. Identification of Meaningful Differences in Performance **2f.1 Data/sample from Testing or Current Use** *(description of data/sample and size)*: National, population-based public health surveillance data, collected at the individual-child level within each state/territory, and reported at state-level aggregate form nationally to CDC. This population-based collection of EHDI data has been occurring for over a decade. For the reporting period of calendar year 2007, 43 states and territories reported 3,364 infants were identified with permanent congenital hearing loss.	**2f** C☐ P☐ M☐ N☐

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)***:** Statistical analysis comparing individual entities (provider, network of providers, state/territory) to the mean level of performance for similar entities. When appropriate, this can be limited to similar entities within a given jurisdiction (e.g., performance of a specific provider relative to other providers in a state) or nationally (e.g., mean performance across an entire state relative to other state/territories). In addition, performance can be evaluated through direct comparison to current national standards of performance (e.g., CDC National Goals, Joint Committee on Infant Hearing,Healthy People 2020.) **2f.3 Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)***:** For statistical analyses comparing individual entities to the mean level of performance for similar entities, performance that is 2 standard deviations below the corresponding mean can be flagged. When appropriate, this can be done both within a given jurisdiction and nationally. For example, overall performance for a low performing state may be more than 2 standard deviations below the mean for all states/territories, resulting in that state being identified. However, within that state, there may be no significant difference among providers (i.e., all are performing equally poorly).	
2g. Comparability of Multiple Data Sources/Methods **2g.1 Data/sample** *(description of data/sample and size)***:** All data will be collected through Electronic Health Records – not applicable **2g.2 Analytic Method** *(type of analysis & rationale)***:** All data will be collected through Electronic Health Records – not applicable **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)***:** All data will be collected through Electronic Health Records – not applicable	**2g** **C☐** **P☐** **M☐** **N☐** **NA☐**
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)***:** Not applicable – measure is not stratified **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**	**2h** **C☐** **P☐** **M☐** **N☐** **NA☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties*?	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties***, met?** **Rationale:**	*2* **C☐** **P☐** **M☐** **N☐**
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** Testing not yet completed **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:**	**3a** **C☐** **P☐** **M☐** **N☐**

3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) **3a.4 Data/sample** *(description of data/sample and size)***:** **3a.5 Methods** *(e.g., focus group, survey, QI project)***:** **3a.6 Results** *(qualitative and/or quantitative results and conclusions)***:**	
3b/3c. Relation to other NQF-endorsed measures **3b.1 NQF # and Title of similar or related measures:** no current NQF endorsed measure	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?** The Centers for Disease Control and Prevention (CDC), the HRSA Maternal and Child Health Bureau (MCHB) and the National Committee for Quality Assurance (NCQA) have submitted 2010 Child Health Quality Measures to NQF that relate to the topic of newborn screening, however the measures target different care settings and data sources. CDC, MCHB, and NCQA are collaborating to ensure the measure specifications have distinctive additive value and are harmonized.	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** **5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability***, met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition),	**4a** C☐ P☐ M☐ N☐

Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry), Survey	
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	**4c** C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** The use of EHRs for this measure provide a number of strengths that facilitate data quality, including EHRs serving as the authoritative source of clinical information and legal record of care. Furthermore, the use of discrete, computer readable fields results in reduced measurement error that may emerge from manual abstraction, third party coding, or transcription errors. Nevertheless, potential sources of error exist and include incorrect measure, code, or logic specification, as well as incorrect programming, system structure, or data exporting code, or inconsistent field definitions across providers or users. These can be audited through quality control measures. For example, CDC EHDI provides states and territories with a summary of results of measures reported as part of the national population-based public health data collection. This allows them to identify and address potential discrepancies. Similarly, EHDI programs are encouraged to provide similar feedback to their reporting sources as a means of quality control and programmatic feedback. Furthermore, state EHDI programs are encouraged to conduct their own reliability/validity studies, and to encourage data quality studies on the part of their reporting sources.	**4d** C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Requires an accurate standardized denominator and numerator to successfully determine that all infants have been accounted for and received necessary care. The limitation has been that providers have only reported on a subset of infants seen. 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Referral to intervention within 48 hours is not a proprietary measure. Public health EHDI programs may need to assume the cost to implement this measure. This measure may require costs of additional system development at the public health level and may require costs of systems development and data entry at the provider level. Depending on availability, federal funds might be provided to public health programs in order to strengthen infrastructure needed for this data collection. 4e.3 **Evidence for costs:** 4e.4 **Business case documentation:**	**4e** C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**

Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333

Co.2 Point of Contact
John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-

Measure Developer If different from Measure Steward
Co.3 Organization
Centers for Disease Control and Prevention, Early Hearing Detection and Intervention (EHDI), 1600 Clifton Road NE, MS E-88, Atlanta, Georgia, 30333

Co.4 Point of Contact
Craig, Mason, Ph.D., Craig_Mason@umit.maine.edu, 207-581-9059-

Co.5 Submitter If different from Measure Steward POC
John, Eichwald, M.A. FAAA, jeichwald@cdc.gov, 404-498-3961-, Centers for Disease Control and Prevention

Co.6 Additional organizations that sponsored/participated in measure development
On July 24, the Joint Committee on Infant Hearing (JCIH) voted unanimously to proceed with the submission these EHDI measures to NQF. Liaison representatives were present from all of the participating organizations: American Academy of Pediatrics (AAP), American Academy of Audiology (AAA), American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS), American Speech-Language-Hearing Association (ASHA), Alexander Graham Bell Association for the Deaf and Hard of Hearing, Council of Education of the Deaf (CED), and Directors of Speech and Hearing Programs in State Health and Welfare
Agencies (DSHPSHWA).

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
CDC EHDI Data Committee and the Joint Committee on Infant Hearing (JCIH) both participated in the development of EHDI quality benchmarks on which this measure is based.

Ad.2 If adapted, provide name of original measure:
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 2000
Ad.7 Month and Year of most recent revision: 10, 2007
Ad.8 What is your frequency for review/update of this measure?
Ad.9 When is the next scheduled review/update for this measure?

Ad.10 Copyright statement/disclaimers:
Ad.11 -13 Additional Information web page URL or attachment: URL http://jcih.org/posstatemts.htm
Date of Submission (*MM/DD/YY*)**:** 08/30/2010

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1381 **NQF Project:** Child Health Quality Measures 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 Measure Title: Asthma Emergency Department Visits
De.2 Brief description of measure*:* Percentage of patients with asthma who have greater than or equal to one visit to the emergency room for asthma during the measurement period.
1.1-2 Type of Measure: Outcome **De.3 If included in a composite or paired with another measure, please identify composite or paired measure** N/A
De.4 National Priority Partners Priority Area: Population health **De.5 IOM Quality Domain**: Effectiveness **De.6 Consumer Care Need:** Staying healthy

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1 Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes **A.2 Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** **A.3 Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary **A.4 Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least	**B** **Y**☐

every 3 years. Yes, information provided in contact section	**N**☐
C. The intended use of the measure includes <u>both</u> public reporting <u>and</u> quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Payment incentive	**C** **Y**☐ **N**☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** **Y**☐ **N**☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** **Y**☐ **N**☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers **1a.2** **1a.3 Summary of Evidence of High Impact:** 213,825 Medicaid eligibles/enrollees in the pilot area 21,780 identified as being "Asthmatic" based on the logic developed to identify persons at risk for possible targeted interventions. 1,296 recipients were enrolled in a chronic care management pilot called Q4U. **1a.4 Citations for Evidence of High Impact:** Alabama Asthma Coalition State Plan and Burden Document, Alabama Department of Public Health, April 2009 http://www.adph.org/steps/assets/ALAsthmaStatePlan2009.pdf It is estimated that by 2025 the number of people with asthma will grow by more than 100 million. See World Health Organization. Global surveillance,prevention and control of chronic respiratory diseases: a comprehensive approach, 2007. Asthma accounts for 217,000 emergency room visits and 10.5 million office visits a year. See Pitts SR, Niska RW, Xu J, Burt CW. National Hospital Ambulatory Medical Care Survey: 2006 emergency department summary. National health statistics reports; no. 7. Hyattsville, MD: National Center for Health Statistics. 2008.	**1a** **C**☐ **P**☐ **M**☐ **N**☐
1b. Opportunity for Improvement **1b.1 Benefits (improvements in quality) envisioned by use of this measure:** Allows for the identification of persons seen in the emergency room with a primary diagnosis (first diagnosis) of Asthma. By identifying	**1b** **C**☐ **P**☐ **M**☐

these persons, their providers can be made aware of the visits, care managers/coordinators can work with them, potential for targeting for directed education and self-management education for person/parent/caregiver. Also can be incorporated as a clinical ALERT for providers in an EHR to notify the provider that this patient has been seen in the ER for Asthma.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
Focused on variation for this from one county to the next although individual provider variation was reviewed it was not the specific focus of the pilot implemented. Overall performance was considered to be poor with the overall (combined counties) measure being higher than anticipated.

1b.3 Citations for data on performance gap:
http://www.medicaid.alabama.gov/Transformation/Pilot_Counties_Asthma_Measures.aspx
The county to county variation is noted at the above URL.

1b.4 Summary of Data on disparities by population group:
Not looked at for this pilot. The logic itself will allow review by race/ethnicity, geographic area (county, provider and gender).

1b.5 Citations for data on Disparities:
N/A

N ☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** A reduction in emergency room visits is related to improved quality of life and decreased morbidity and mortality. Self management education to improve utilization of appropriate medications, allow for the differentiation of controller from rescue medications, quality of life assessments, environmental assessment (triggers), focus on Asthma Action Plan, provider education oncurrent asthma guidelines are just some of the strategies used to improve asthma management to reduce emergency room visits for the Medicaid population in the pilot counties.

1c.2-3. Type of Evidence: Expert opinion, Other Evaluation being conducted by the University of Alabama School of Public Health has been ongoing and final evaluation is underway. Statistical analysis of results planned. Logic Model developed prior to start of pilot to look at short term and long term goals.

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
See results for first year of pilot.
http://www.medicaid.alabama.gov/Transformation/Pilot_Counties_Asthma_Measures.aspx
External Evaluation underway the University of Alabama at Birminghma (UAB) School of Public Health which includes the results of QoL tools and surveys in addition to the claims measured captured above. This will be available later this year.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
External Evaluator when available

1c.6 Method for rating evidence: n/a

1c.7 Summary of Controversy/Contradictory Evidence: n/a

1c.8 Citations for Evidence (*other than guidelines***):** n/a

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
n/a

1c.10 Clinical Practice Guideline Citation: n/a

1c
C ☐
P ☐
M ☐
N ☐

1c.11 National Guideline Clearinghouse or other URL: n/a **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** n/a **1c.13 Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:** n/a **1c.14 Rationale for using this guideline over others:** n/a	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Measuring percentage of people with Asthma that have an emergency room visit during a 12 month measurement period. **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** The measurement period is a 12 consecutive month period. This can be calendar year, fiscal year or as otherwise determined. For the Together for Quality Pilot a baseline period was determined and then two 12 month periods were defined as measurement periods during the pilot. **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** Emergency Department Visits Numerator is patients with = 1 asthma related ED visits as identified via ED visit codes (procedure codes 99281-99285) AND also has an asthma diagnosis code ICD-9-CM codes 493.00, 493.01, 493.02, 493.10,493.11, 493.12, 493.81, 493.82, 493.90, 493.91, and 493.92 as the primary diagnosis on the emergency room claim during the measurement period). Use table of denominator recipient IDs to pull all recipients that have received claims described above.	
2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):** Denominator is all patients age one and older, diagnosed with asthma or on at least two short acting beta adrenergic agents during the measurement period. The denominator will include recipients with any claims with ICD-9-CM codes 493.00, 493.01, 493.02, 493.10, 493.11, 493.12, 493.81, 493.82, 493.90, 493.91, and 493.92 (excludes 493.20, 493.21 and 493.22) OR have had a prescription for two or more short acting	**2a-specs** **C☐** **P☐** **M☐** **N☐**

beta adrenergic agents (Generic Code Number Sequence Numbers (GSN) of 04963, 04964, 04966, 04967, 04968, 05032, 05033, 05034, 05037, 05039, 05040, 16033, 22230, 28090, 41848, 41849, 48698, 48699, 49871, 51197, 51198, 54687, 57879, and 58890) with the dates of service March 01, 2006-February 28,2007 with paid dates from March 01, 2006 through May 31, 2007. This is our baseline period. Subsequent 12 month measurement periods identified for the interventional strategies. Total period of pilot initiative was 24 months.
A "Measurement period is 12 consecutive months".

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Any one greater than or equal to one. Note: This measure is done for adults and children. "Children" is anyone under 21 for the measurement period.

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
"Measurement period" = A 12 Consecutive month period that can be defined as calendar year, fiscal year, or based on a specific pilot or initiative.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
SQL for Asthma Denominator

```
(
SELECT
DSS.T_CA_ICN.ID_MEDICAID,
trunc(months_between(DSS.T_CA_ICN.DTE_FIRST_SVC,DSS.T_RE_BASE_DN.DTE_BIRTH)/12),
DSS.T_CA_RECIP_KEY.CDE_RECIP_COUNTY || ´ - ´ || DSS.T_CA_RECIP_KEY.DSC_RECIP_COUNTY,
DSS.T_CA_RECIP_KEY.CDE_RACE || ´ - ´ || DSS.T_CA_RECIP_KEY.DSC_RACE,
DSS.T_CA_RECIP_KEY.CDE_SEX || ´ - ´ || DSS.T_CA_RECIP_KEY.DSC_SEX
FROM
DSS.T_CA_ICN,
DSS.T_RE_BASE_DN,
DSS.T_CA_RECIP_KEY,
DSS.T_CA_AID_GROUP
WHERE
( DSS.T_CA_ICN.RECIP_KEY=DSS.T_CA_RECIP_KEY.RECIP_KEY )
AND ( DSS.T_RE_BASE_DN.SAK_RECIP(+)=DSS.T_CA_ICN.SAK_RECIP )
AND ( DSS.T_CA_AID_GROUP.SAK_AID_GROUP=DSS.T_CA_ICN.SAK_AID_GROUP )
AND (
(DSS.T_CA_ICN.CDE_DIAG_PRIM IN (´49300´, ´49301´, ´49302´, ´49310´, ´49311´, ´49312´, ´49381´,
´49382´, ´49390´, ´49391´, ´49392´)
OR DSS.T_CA_ICN.CDE_DIAG_2 IN (´49300´, ´49301´, ´49302´, ´49310´, ´49311´, ´49312´, ´49381´,
´49382´, ´49390´, ´49391´, ´49392´))
AND DSS.T_CA_ICN.DTE_FIRST_SVC BETWEEN ´03-01-2006 00:00:00´ AND ´02-28-2007 00:00:00´
AND DSS.T_CA_ICN.DTE_PTN BETWEEN ´03-01-2006 00:00:00´ AND ´05-31-2007 00:00:00´
AND trunc(months_between(DSS.T_CA_ICN.DTE_FIRST_SVC,DSS.T_RE_BASE_DN.DTE_BIRTH)/12) != 0
AND DSS.T_CA_ICN.CDE_DTL_STATUS != ´D´
AND DSS.T_CA_AID_GROUP.CDE_GROUP_D NOT IN (´D98´, ´D99´, ´D1 ´, ´D2 ´, ´D3 ´, ´D4 ´, ´D5 ´, ´D6 ´,
´D7 ´, ´D8 ´, ´D9 ´)
AND DSS.T_CA_ICN.CDE_CLM_TYPE IN (´I´, ´A´, ´C´, ´M´, ´O´, ´B´)
)
GROUP BY
DSS.T_CA_ICN.ID_MEDICAID,
trunc(months_between(DSS.T_CA_ICN.DTE_FIRST_SVC,DSS.T_RE_BASE_DN.DTE_BIRTH)/12),
DSS.T_CA_RECIP_KEY.CDE_RECIP_COUNTY || ´ - ´ || DSS.T_CA_RECIP_KEY.DSC_RECIP_COUNTY,
DSS.T_CA_RECIP_KEY.CDE_RACE || ´ - ´ || DSS.T_CA_RECIP_KEY.DSC_RACE,
DSS.T_CA_RECIP_KEY.CDE_SEX || ´ - ´ || DSS.T_CA_RECIP_KEY.DSC_SEX
HAVING
( count(DISTINCT DSS.T_CA_ICN.NUM_ICN) >= 1)
UNION
```

```
SELECT
DSS.T_CA_ICN.ID_MEDICAID,
trunc(months_between(DSS.T_CA_ICN.DTE_FIRST_SVC,DSS.T_RE_BASE_DN.DTE_BIRTH)/12),
DSS.T_CA_RECIP_KEY.CDE_RECIP_COUNTY || ´ - ´ || DSS.T_CA_RECIP_KEY.DSC_RECIP_COUNTY,
DSS.T_CA_RECIP_KEY.CDE_RACE || ´ - ´ || DSS.T_CA_RECIP_KEY.DSC_RACE,
DSS.T_CA_RECIP_KEY.CDE_SEX || ´ - ´ || DSS.T_CA_RECIP_KEY.DSC_SEX
FROM
DSS.T_CA_ICN,
DSS.T_RE_BASE_DN,
DSS.T_CA_RECIP_KEY,
DSS.T_CA_DRUG,
DSS.T_CA_AID_GROUP
WHERE
( DSS.T_CA_ICN.RECIP_KEY=DSS.T_CA_RECIP_KEY.RECIP_KEY )
AND ( DSS.T_CA_DRUG.SAK_CLAIM(+)=DSS.T_CA_ICN.SAK_CLAIM and
DSS.T_CA_DRUG.DTE_PTN(+)=DSS.T_CA_ICN.DTE_PTN )
AND ( DSS.T_RE_BASE_DN.SAK_RECIP(+)=DSS.T_CA_ICN.SAK_RECIP )
AND ( DSS.T_CA_AID_GROUP.SAK_AID_GROUP=DSS.T_CA_ICN.SAK_AID_GROUP )
AND (
DSS.T_CA_DRUG.NUM_DRUG_GCN_SEQ IN (05037, 04963, 04964, 04966, 04967, 04968, 05032, 05033, 05034,
05039, 05040, 16033, 22230, 28090,
41848, 41849, 48698, 48699, 49871, 51197, 51198, 54687, 57879, 58890)
AND DSS.T_CA_ICN.DTE_FIRST_SVC BETWEEN ´03-01-2006 00:00:00´ AND ´02-28-2007 00:00:00´
AND DSS.T_CA_ICN.DTE_PTN BETWEEN ´03-01-2006 00:00:00´ AND ´05-31-2007 00:00:00´
AND trunc(months_between(DSS.T_CA_ICN.DTE_FIRST_SVC,DSS.T_RE_BASE_DN.DTE_BIRTH)/12) != 0
AND DSS.T_CA_ICN.CDE_DTL_STATUS != ´D´
AND DSS.T_CA_AID_GROUP.CDE_GROUP_D NOT IN (´D98´, ´D99´, ´D1 ´, ´D2 ´, ´D3 ´, ´D4 ´, ´D5 ´, ´D6 ´,
´D7 ´, ´D8 ´, ´D9 ´)
AND DSS.T_CA_ICN.CDE_CLM_TYPE IN (´P´, ´Q´)
)
GROUP BY
DSS.T_CA_ICN.ID_MEDICAID,
trunc(months_between(DSS.T_CA_ICN.DTE_FIRST_SVC,DSS.T_RE_BASE_DN.DTE_BIRTH)/12),
DSS.T_CA_RECIP_KEY.CDE_RECIP_COUNTY || ´ - ´ || DSS.T_CA_RECIP_KEY.DSC_RECIP_COUNTY,
DSS.T_CA_RECIP_KEY.CDE_RACE || ´ - ´ || DSS.T_CA_RECIP_KEY.DSC_RACE,
DSS.T_CA_RECIP_KEY.CDE_SEX || ´ - ´ || DSS.T_CA_RECIP_KEY.DSC_SEX
HAVING
(
count(DISTINCT DSS.T_CA_ICN.NUM_ICN) >= 2
)
)
```

Make a table of the recipient IDs retrieved from Asthma Denominator query.

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Excludes children less than age one.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Recipient Age First Date of Service - Calculated different from 0

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
Recipient Gender & Description
Recipient Race Code & Description
Recipient County & Description

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**

N/A

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score:
2a.20 Interpretation of Score: Better quality = Lower score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
N/A-Measure results were simply reviewed in relationship to the established target goal.

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
Target goal for end of pilot determined by TFQ Clinical Workgroup
Measure used to determine AL Medicaid success in reducing ER utilization for the targeted population.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
N/A

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic administrative data/claims

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
It is Business Objects software with the Client side version known as DeskTop Intelligence or DI. It uses SQL structured business language and rules to allow for the development of queries of the administrative claims database. It is provided through our MMIS contract with HP Enterprises.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL Not needed http://www.medicaid.alabama.gov/Transformation/Pilot_Counties_Asthma_Measures.aspx

2a.29-31 Data dictionary/code table web page URL or attachment: URL N/A
http://www.medicaid.alabama.gov/documents/Transformation-TFQ-Documents/Pilot%20Counties%20Asthma%20Measures/TFQ_Interim_Summary_Measure_Results_4-15-10.pdf

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Population: counties or cities, Program: Other Used in a chronic care management pilot, Q4U and used to display Alert in Electronic Health Record, QTool to identify patients seen in ER for Asthma

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Ambulatory Care: Emergency Dept

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** Query has been run multiple times. By identifying the specific dates of service for the measurement period and attaching a "tail" for paid dates it prevents huge variability in the results.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
n/a

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
n/a

2b
C☐ P☐ M☐ N☐

2c. Validity testing

2c
C☐

2c.1 **Data/sample** *(description of data/sample and size)*: Face Validity-The "sample" was actually any persons identified in the numerator who were then referred for enrollment in chronic care management. There were no persons identified as being seen in the emergency room who had not presented to the emergency room during the timeframe noted. 2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*: N/A 2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*: N/A	**P**☐ **M**☐ **N**☐
2d. Exclusions Justified 2d.1 **Summary of Evidence supporting exclusion(s):** Under one year olds were excluded from the denominator due to issue/concern of making an accurate diagnosis of asthma in this population. Excluded based on Expert Opinion and TFQ Clinical Workgroup consensus opionion. 2d.2 **Citations for Evidence:** N/A 2d.3 **Data/sample** *(description of data/sample and size)*: n/A 2d.4 **Analytic Method** *(type analysis & rationale)*: n/a 2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: n/a	**2d** **C**☐ **P**☐ **M**☐ **N**☐ **NA**☐
2e. Risk Adjustment for Outcomes/ Resource Use Measures 2e.1 **Data/sample** *(description of data/sample and size)*: No risk adjustment since interested in ANY emergency room visit with Asthma as the primary diagnosis 2e.2 **Analytic Method** *(type of risk adjustment, analysis, & rationale)*: n/a 2e.3 **Testing Results** *(risk model performance metrics)*: n/a 2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:** n/a	**2e** **C**☐ **P**☐ **M**☐ **N**☐ **NA**☐
2f. Identification of Meaningful Differences in Performance 2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: Variation across counties and providers noted. Reduction in emergency room visits in pilot counties as a whole cut by about half at end of first year of pilot. 2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: n/a 2f.3 **Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: n/a	**2f** **C**☐ **P**☐ **M**☐ **N**☐
2g. Comparability of Multiple Data Sources/Methods	**2g** **C**☐

2g.1 **Data/sample** *(description of data/sample and size)*: Does not apply since source of data is Alabama Medicaid claims 2g.2 **Analytic Method** *(type of analysis & rationale)*: n/a 2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*: n/a	**P**☐ **M**☐ **N**☐ **NA**☐
2h. Disparities in Care 2h.**1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: Not stratified as part of this pilot. No disparities looked for at this time. 2h.2 **If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** Have discussed this but will wait to do as part of CHIPRA Core Measure reporting.	**2h** **C**☐ **P**☐ **M**☐ **N**☐ **NA**☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* **C**☐ **P**☐ **M**☐ **N**☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information 3a.1 **Current Use:** In use 3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): http://www.medicaid.alabama.gov/Transformation/Pilot_Counties_Asthma_Measures.aspx 3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** http://www.medicaid.alabama.gov/documents/Program-Pt1st/3-H_1c_Sample_Profiler_7-09.pdf Asthma ER measure is part of a Shared Savings program for our Patient 1st Program and individual provider performance is compared to that of their peer group. **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) 3a.4 **Data/sample** *(description of data/sample and size)*: n/a 3a.5 **Methods** *(e.g., focus group, survey, QI project)*: Reviewed with a two separate groups; the TFQ Clinical Workgroup and the Patient 1st Advisory Council. The first group developed the measure and has reviewed the results. The second group approved its use as part of a Shared Savings methodology. 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)*: Qualltative-Lower is best.	**3a** **C**☐ **P**☐ **M**☐ **N**☐
3b/3c. Relation to other NQF-endorsed measures	

3b.1 **NQF # and Title of similar or related measures:** Unaware of any. Checked NQF endorsed list and could not find one related to Asthma and Emergency Room Visits.	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?** n/a	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** n/a 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** n/a	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	**4c** C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.**	**4d** C☐ P☐ M☐

Potential to identify persons as being asthmatic due to provider error in coding. This is the same as for any claims data. Since the purpose of our use of this measure was to target persons who potentially could benefit from interventions we were not worried about including people without a confirmed diagnosis of asthma but were alright with potentially identifying others we could potentially keep out of the emergency room for respiratory problems.	N☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Prior to assigning individuals identified in the numerator directly to a care coordinator would incorporate verification of the diagnosis with their primary care provider into the care coordination protocol before attempting enrollment. Limiting the identification of persons in the denominator to only those with the diagnosis would reduce the number of persons who indicated they did not have a diagnosis of asthma (13.1% of 1667 persons who were identified for care management but Never Enrolled) but would prevent the inclusion of persons who had asthma but were unaware of the diagnosis which was felt to be more relevant clinically. 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Currently working on an Asthma Return on Investment calculation using AHRQ Asthma ROI Calculator to evaluation the return on investment for the Asthma Chronic Care management program, Q4U. This is not the cost of implementing the measure but the cost of implementing a program to improve the measure! The costs to pull the data for the measure were minimal involving staff already doing this in our Statiscal Support Unit. 4e.3 **Evidence for costs:** N/A 4e.4 **Business case documentation:** None	**4e** C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** C☐ P☐ M☐ N☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited** ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y**☐ **N**☐ **A**☐
CONTACT INFORMATION	
Co.1 **Measure Steward (Intellectual Property Owner)** Co.1 **Organization** Alabama Medicaid Agency, 501 Dexter Avenue, PO Box 5624, Montgomery, Alabama, 36103-5624 Co.2 **Point of Contact** Mary, McIntyre, MD., MPH, mary.mcintyre@medicaid.alabama.gov, 334-242-5574-	
Measure Developer If different from Measure Steward	

Co.3 Organization
Alabama Medicaid Agency, 501 Dexter Avenue, PO Box 5624, Montgomery, Alabama, 36103-5624

Co.4 Point of Contact
Mary, McIntyre, MD., MPH, mary.mcintyre@medicaid.alabama.gov, 334-242-5574-

Co.5 Submitter If different from Measure Steward POC
Mary, McIntyre, MD., MPH, mary.mcintyre@medicaid.alabama.gov, 334-242-5574-, Alabama Medicaid Agency

Co.6 Additional organizations that sponsored/participated in measure development
http://www.medicaid.alabama.gov/documents/Transformation-TFQ-Documents/Charter/TFQ%20Clinical_Workgroup_Charter_V%207%2030%202009_revised%20(3).pdf

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
http://www.medicaid.alabama.gov/documents/Transformation-TFQ-Documents/Charter/TFQ%20Clinical_Workgroup_Charter_V%207%2030%202009_revised%20(3).pdf
List is available at this URL.
Group helped identify the codes, age group, etc. Included Domain Experts from University in the development. See meeting documents.

Ad.2 If adapted, provide name of original measure:
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 2008
Ad.7 Month and Year of most recent revision: 04, 2010
Ad.8 What is your frequency for review/update of this measure? Reviewed Yearly
Ad.9 When is the next scheduled review/update for this measure? 04, 2011

Ad.10 Copyright statement/disclaimers: State Government

Ad.11 -13 Additional Information web page URL or attachment:

Date of Submission (*MM/DD/YY*)**:** 08/30/2010

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1398 **NQF Project:** Child Health Quality Measures 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Vision Screening
De.2 **Brief description of measure***:* We are combining 3 measures into one form because measure features and evidence are the same or similar. Measure 1: Vision Screening By 6 years of age Measure 2: Vision Screening By 13 years of age Measure 3: Vision Screening By 18 years of age
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** This measure appears in the composite Comprehensive Well Care by Age 6 Years, Comprehensive Well Care by Age 13 Years and Comprehensive Well Care by Age 18 Years.
De.4 **National Priority Partners Priority Area:** Care coordination, Population health De.5 **IOM Quality Domain**: Effectiveness, Timeliness De.6 **Consumer Care Need:** Staying healthy

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** Proprietary measure A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of	**A** **Y**☐ **N**☐

measure submission **A.4 Measure Steward Agreement attached:**	
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** **Y**☐ **N**☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	**C** **Y**☐ **N**☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. **D.1Testing:** Yes, fully developed and tested **D.2 Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** **Y**☐ **N**☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** **Y**☐ **N**☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Leading cause of morbidity/mortality, Patient/societal consequences of poor quality **1a.2** **1a.3 Summary of Evidence of High Impact:** Vision-threatening eye problems, including amblyopia, strabismus, and significant refractive error, are estimated to occur in two to five percent of preschool children (Hartmann, 2006), and vision disorders are now the fourth leading disability among children in the U.S (Sunnah, 2003). These impairments often go undetected, as many children do not know when they have a vision problem, and their parents may be equally unaware. While loss of vision is the most serious outcome, children with visual problems also suffer in other ways that affect their quality of life. For example, uncorrected amblyopia may adversely affect school performance, ability to learn, and later, adult self-image (Packwood, 1999). Undiagnosed poor vision can be a burden on public health resources (CDC, 2008). The average lifetime cost for one person with vision impairment was estimated in 2003 to be $566,000, which represents costs over and above those experienced by a person who does not have a disability (CDC, 2004). It is estimated that the lifetime costs for all people with vision impairment who were born in 2000 will total $2.5 billion, for	**1a** **C**☐ **P**☐ **M**☐ **N**☐

Comment [KP1]: 1a. The measure focus addresses:
•a specific national health goal/priority identified by NQF's National Priorities Partners; OR
•a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

both direct and indirect costs. These estimates consist of direct medical costs (6 percent), such as doctor visits and prescription drugs; direct nonmedical expenses (16 percent), such as home modifications and special education, and indirect costs (77 percent), such as the value of lost wages when a person dies early, cannot work, or is limited in the amount or type of work he or she can do (CDC, 2004). One study found that all screening programs, whether visual acuity or photoscreening, had benefits that exceeded the cost of screening (Joish, 2003), with the total net benefit highest for children three to four years of age.

1a.4 Citations for Evidence of High Impact: American Academy of Pediatrics Committee on Practice and Ambulatory Medicine, Section on Ophthalmology. Vision screening guidelines. Pediatrics 1996;98:156

American Association for Pediatric Ophthalmology and Strabismus and the American Academy of Ophthalmology. Vision Screening for Infants and Children. Policy Statement. http://one.aao.org/asset.axd?id=2efe6879-b631-4878-b878-18bc1679114c 2007

Centers for Disease Control and Prevention. Economic costs associated with mental retardation, cerebral palsy, hearing loss, and vision impairment --- United States, 2003. http://www.cdc.gov/ncbddd/dd/vision3.htm. Updated 2004.

Centers for Disease Control and Prevention. Morbidity and Mortality Weekly Report. Visual Impairment and Use of Eye-Care Services and Protective Eyewear Among Children --- United States, 2002. http://www.cdc.gov/mmwR/preview/mmwrhtml/mm5417a2.htm. Updated May 6, 2005. Accessed July 2008.

Centers for Disease Control and Prevention. Vision Impairment. http://www.cdc.gov/ncbddd/dd/vision3.htm. Updated October 2004

Hartmann EE, Bradford GE, Chaplin PK, Johnson T, Kemper AR, Kim S, Marsh-Tootle W; PUPVS Panel for the American Academy of Pediatrics. Project Universal Preschool Vision Screening: a demonstration project. Pediatrics. 2006 Feb;117(2):e226-37.

Joish VN, Malone DC, Miller JM. A cost-benefit analysis of vision screening methods for preschoolers and school-age children. J AAPOS. 2003 Aug;7(4):283-90

Packwood EA, Cruz OA, Rychwalski PJ, Keech RV. The psychosocial effects of amblyopia study. J AAPOS 1999;3:15-7.

Partnership for Prevention. Preventive Care: A National Profile on Use, Disparities, and Health Benefits. 2007. Accessed July 2008.

Sunnah K, Project Manager, Project Universal Preschool Vision Screening (PUPVS), June 30, 2003, personal communication. Available at: http://www.medicalhomeinfo.org/screening/vision.html.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: This measure encourages vision screening and follow-up of abnormal or indeterminate results. Screening for vision problems is inexpensive and can result in significant improvement in a child's quality of life. Pediatric well-child visits provide an excellent opportunity for vision screening and allows for an opportunity of success in treatment.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
While many professional organizations endorse screening, and more than 34 states have implemented programs for vision screening, there is still a gap in care, as the implementation of these programs remains variable and inconsistent (Hartmann, 2006). Many primary care pediatricians do not follow the American Academy of Pediatrics (AAP) guidelines for vision screening and referral, especially in younger children. One study found that nearly two-thirds of pediatricians did not begin visual acuity testing at age three years as recommended, and about one-fifth did not test until age five years (Wall, 2002). Despite various efforts aimed at increasing screening, recent estimates show that only 21 percent of preschool children receive vision screening, and only 14 percent receive a comprehensive exam (AAP, 2007). Visual

1b
C ☐
P ☐
M ☐
N ☐

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

impairments are higher in children ages six to 17; however, only 30 percent of adolescents receive vision tests.

1b.3 Citations for data on performance gap:
American Academy of Pediatrics. Preschool Vision Screening Activities. http://www.medicalhomeinfo.org/screening/vision.html Updated March 2007.

Hartmann EE, Bradford GE, Chaplin PK, Johnson T, Kemper AR, Kim S, Marsh-Tootle W; PUPVS Panel for the American Academy of Pediatrics. Project Universal Preschool Vision Screening: a demonstration project. Pediatrics. 2006 Feb;117(2):e226-37.

Wall TC, Marsh-Tootle W, Evans HH, Fargason CA, Ashworth CS, Hardin JM. Compliance with vision-screening guidelines among a national sample of pediatricians. Ambul Pediatr. 2002 Nov-Dec;2(6):449-55.

1b.4 Summary of Data on disparities by population group:
Children from families in the lower economic brackets and Asian, black, and Hispanic children are less likely to receive vision screening than white children (CDC, 2002). Among children with special health care needs, African Americans had twice the odds, and children of multiracial backgrounds had three times the odds, of having unmet need for vision care compared to whites (Heslin, 2005).

1b.5 Citations for data on Disparities:
Morbidity and Mortality Weekly Report. Centers for Disease Control and Prevention. Visual Impairment and Use of Eye-Care Services and Protective Eyewear Among Children --- United States, 2002. http://www.cdc.gov/mmwR/preview/mmwrhtml/mm5417a2.htm. Updated May 6, 2005. Accessed July 2008.

Heslin K, Baker RS, Shaheen M, Casey R; AcademyHealth. Meeting (2005 : Boston, Mass.). Racial and Ethnic Disparities in Access to Vision Care among Children with Special Health Care Needs in the United States. Abstr AcademyHealth Meet. 2005; 22: abstract no. 3232

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** While the USPSTF found no direct evidence that screening for visual impairment, compared with no screening, leads to improved visual acuity, the Task Force found one fair-quality study that showed intense screening by eye professionals decreases the prevalence of amblyopia (USPSTF, 2004).

1c.2-3. Type of Evidence: Evidence-based guideline, Expert opinion

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Vision screening for children up to age five years was reviewed by the U.S. Preventive Services Task Force (USPSTF). The USPSTF found no direct evidence that screening for visual impairment in children leads to improved visual acuity. However, the USPSTF found fair evidence that screening tests have reasonable accuracy in identifying strabismus, amblyopia, and refractive error in children with these conditions. The Task Force also found that more intensive screening compared with usual screening leads to improved visual acuity, and that treatment of strabismus and amblyopia can improve visual acuity and reduce long-term amblyopia. In examining the possible harms of screening, the USPSTF found no evidence of harms and judged the potential for harms to be small. Thus, the Task Force concluded that the benefits of screening likely would outweigh any harms (USPSTF, 2004).

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
Good

1c.6 Method for rating evidence: Expert consensus

1c.7 Summary of Controversy/Contradictory Evidence: None

1c
C ☐
P ☐
M ☐
N ☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
oAccess – evidence that an association exists between access to a health service and the outcomes of, or experience with, care. ... [1]

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

1c.8 Citations for Evidence (*other than guidelines*): U.S. Preventive Services Task Force. Screening for Visual Impairment in Children Younger than Age 5 Years. May 2004.

Broderick, P. MD. Pediatric Vision Screening for the Family Physician. American Academy of Family Physicians, 1998.

U.S. Preventive Services Task Force. Screening for Visual Impairment in Children Younger than Age 5 Years: Recommendation Statement. May 2004. Agency for Healthcare Research and Quality, Rockville, MD. http://www.uspreventiveservicestaskforce.org/3rduspstf/visionscr/vischrs.htm

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number*):
U.S. Preventive Services Task Force (2004)
The USPSTF recommends screening to detect amblyopia, strabismus, and defects in visual acuity in children younger than age 5 years.
Grade: B Recommendation.

Institute for Clinical Systems Improvement (2008)
Children 4 years old and younger should be screened for amblyopia, strabismus and defects in visual acuity. (By age 5, it should be performed as part of preschool screening.)
Grade: Level I - preventive services are worthy of attention at every provider visit

American Academy of Ophthalmology and American Association for Pediatric Ophthalmology (2007)
The AAO/AAPOS recommends that children younger than age 5 years be screened:
- All infants by six months to one year of age should be screened for ocular health during routine well-baby follow-up visits.
- Vision screening should also be performed between 3 and 3 1/2 years of age.
- Emphasis should be placed on checking visual acuity as soon as a child is cooperative enough to complete the examination. Generally, this occurs between ages 2 1/2 to 3 1/2.

It is essential that a formal testing of visual acuity be performed by the age of 5 years.
- Some evidence currently exists to suggest that photoscreening may be a valuable adjunct to the traditional screening process, particularly in pre-literate children.
- Further screening examinations should be done at routine school checks or after the appearance of symptoms. Routine comprehensive professional eye examination of the normal asymptomatic child has no proven medical benefit.
- Any child who does not pass the recommended screening tests should have an ophthalmological examination
- School aged children who pass standard vision screening tests but who demonstrate difficulties learning to read, should be referred to reading specialists such as educational psychologists for evaluation for language processing disorders such as dyslexia. There is not adequate scientific evidence to suggest that defective eye teaming", and "accommodative disorders" are common causes of educational impairment. Hence, routine screening for these conditions is not recommended.

Grade: Expert Consensus

AAP (2003)
Newborns should be evaluated for ocular structural abnormalities, such as cataract, corneal opacities, and ptosis, which are known to result in vision problems, and all children should have their eyes examined on a regular basis.

Children up to 5 years of age should be screened for the following:
Distance visual acuity: Snellen letters; Snellen numbers; Tumbling E; HOTV; Picture tests (Allen figures, LEA symbols).
Ocular alignment: Cross cover test at 10 ft (3 m), Random dot E stereo test at 40 cm, Simultaneous red reflex test (Bruckner test); Ocular media clarity (cataracts, tumors, etc.); Red reflex

Children 6 years of age and older should be screened for the following:
Distance visual acuity: Snellen letters; Snellen numbers; Tumbling E; HOTV; Picture tests (Allen figures, LEA symbols)

Ocular alignment: Cross cover test at 10 ft (3 m), Random dot E stereo test at 40 cm, Simultaneous red reflex test (Bruckner test)
Ocular media clarity (cataracts, tumors, etc.): Red reflex

The results of vision assessments along with instructions for follow-up care, should be clearly communicated to parents. All children who are found to have an ocular abnormality or who fail vision screening should be referred to a pediatric ophthalmologist or an eye care specialist appropriately trained to treat pediatric patients.

Grade: Expert Consensus policy statement

American Optometric Association (2007)
The AOA recommends children younger than age 5 years be screened for the following:
Birth to 24 months
Asymptomatic/risk-free: At six months of age
At risk: At six months of age or as recommended

2 to 5 years
Asymptomatic /risk-free: At 3 years of age
At risk: At 3 years of age or as recommended
- Patient history
- Visual Acuity (Fixation preference tests, Preferential looking visual acuity test)
- Refraction (Cycloplegic retinoscopy, Near retinoscopy)
- Binocular Vision and Ocular Motility (Cover test, Hirschberg test, Krimsky test, Brückner test, Versions Near point of convergence)
- Ocular Health Assessment and Systemic Health Screening (Evaluation of the ocular anterior segment and adnexa, the ocular posterior segment, pupillary responses, Visual field screening (confrontation),
- Assessment and Diagnosis

Age-appropriate examination and management strategies should be used. Major modifications include relying more on objective examination procedures and performing tests considerably more rapidly than with older children.

Children 6-18 years of age
Asymptomatic /risk-free: Before first grade and every two years thereafter
At risk: Annually or as recommended
- Patient history
- Visual Acuity (Fixation preference tests, Preferential looking visual acuity test)
- Refraction (Cycloplegic retinoscopy, Near retinoscopy)
- Binocular Vision and Ocular Motility (Cover test, Hirschberg test, Krimsky test, Brückner test, Versions Near point of convergence)
- Ocular Health Assessment and Systemic Health Screening (Evaluation of the ocular anterior segment and adnexa, the ocular posterior segment, pupillary responses, Visual field screening (confrontation),
- Assessment and Diagnosis

Most of the examination procedures used with this age group are identical to those recommended for adults, age-appropriate modifications of instructions and targets often may be required
Grade: Expert Consensus

1c.10 Clinical Practice Guideline Citation: American Academy of Ophthalmology and the American Association for Pediatric Ophthalmology. Clinical statement: Vision Screening for Infants and Children. March 2007.

American Academy of Pediatrics. Committee on Practice and Ambulatory Medicine of American Academy of Pediatrics, Section on Ophthalmology of American Academy of Pediatrics, American Association of Certified Orthoptists, American Association for Pediatric Ophthalmology and Strabismus and American Academy of Ophthalmology. Eye Examination in Infants, Children, and Young Adults by Pediatricians. Pediatrics

2003;111;902-907

American Optometric Association. Pediatric eye and vision examination. 2nd ed. St. Louis (MO): American Optometric Association; 2002. 57 p.

Institute for Clinical Systems Improvement. Preventive Services for Children and Adolescents Thirteenth Edition. October 2009.

Preferred Practice Patterns Committee. Comprehensive adult medical eye evaluation. San Francisco (CA): American Academy of Ophthalmology (AAO); 2005. 15 p. (Preferred practice pattern).

U.S. Preventive Services Task Force. Screening for Visual Impairment in Children Younger than Age 5 Years. May 2004.

1c.11 National Guideline Clearinghouse or other URL: Screening for visual impairment in children younger than age 5 years: recommendation statement.
http://www.guideline.gov/content.aspx?id=4822&search=vision+screening

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom***):**
USPSTF Based

1c.13 Method for rating strength of recommendation (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:**
Expert consensus

1c.14 Rationale for using this guideline over others:
The measure is based on the USPSTF guideline (younger age group). For the older age groups, there is broad guideline support from leading vision care organizations that recommend screening in older children.

Comment [k7]: USPSTF grading system **http://www.ahrq.gov/clinic/uspstf/grades.htm**: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating

2a. MEASURE SPECIFICATIONS

S.1 Do you have a web page where current detailed measure specifications can be obtained?
S.2 If yes, provide web page URL:

2a. Precisely Specified

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):**
Numerator 1: Children who had documentation in the medical record of vision screening by age 6 years
Numerator 2: Children who had documentation in the medical record of vision screening by age 13 years
Numerator 3: Children who had documentation in the medical record of vision screening by age 18 years

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator***):**
2 years

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**

2a-specs
C☐
P☐
M☐
N☐

Documentation must include the date and a note indicating the following.
• Visual screening results of distance visual acuity documented for each eye separately, and
• For abnormal or indeterminate results, evidence of confirmatory testing, referral or treatment,
or
• Documentation of optometrist or ophthalmologist visit.

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Denominator 1: Children who turned 6 years of age between January 1 of the measurement year and December 31 of the measurement year and who had documentation of a face-to-face visit between the clinician and the child that predates the child's birthday by at least 12 months.
Denominator 2: Children who turned 13 years of age between January 1 of the measurement year and December 31 of the measurement year and who had documentation of a face-to-face visit between the clinician and the child that predates the child's birthday by at least 12 months.
Denominator 3: Children who turned 18 years of age between January 1 of the measurement year and December 31 of the measurement year and who had documentation of a face-to-face visit between the clinician and the child that predates the child's birthday by at least 12 months.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Measure 1: 2 years-6 years, Measure 2: 6 years-13 years, Measure 3: 13 years-18 years.

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
1 year

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
See 2a4; chart review only

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** None

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
NA

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
NA

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**
NA

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
Step 1: Determine the denominator
Children who turned the requisite age in the measurement year, AND
Who had a visit within the past 12 months of the child´s birthday
Step 2: Determine the numerator
Children who had documentation in the medical record of the screening or service during the measurement year or the year previous to the measurement year.

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
Comparison of means and percentiles; analysis of variance against established benchmarks; if sample size is >400, we would use an analysis of variance.

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
For this physician-level measure, we anticipate the entire population will be used in the denominator. If a sample is used, a random sample is ideal. NCQA's work has indicated that a sample size of 30-50 patients would be necessary for a typical practice size of 2000 patients.

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Paper medical record/flow-sheet, Electronic clinical data, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
Medical Record

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

2a.29-31 Data dictionary/code table web page URL or attachment:

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Individual, Clinicians: Group, Population: national, Population: regional/network

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Ambulatory Care: Office, Ambulatory Care: Clinic

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** NCQA received data from 19 physician practices who submitted 10 records per measure (total 190 records per measure)

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
We did not conduct reliability testing for this measure.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
We did not conduct reliability testing for this measure.

2b
C☐ P☐ M☐ N☐

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)***:** NCQA received data from 19 physician practices who submitted 10 records per measure (total 190 records per measure)

2c.2 Analytic Method *(type of validity & rationale, method for testing)***:**
NCQA tested the measure for face validity using a panel of stakeholders with specific expertise in measurement and child health care. This panel included representatives from key stakeholder groups, including pediatricians, family physicians, health plans, state Medicaid agencies and researchers. Experts reviewed the results of the field test and assessed whether the results were consistent with expectations, whether the measure represented quality care, and whether we were measuring the most important aspect of care in this area.

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)***:**
This measure was deemed valid by the expert panel. In addition, this measure does not utilize administrative data sources; data recorded in the chart is considered the gold standard.

2c
C☐ P☐ M☐ N☐

2d. Exclusions Justified

2d

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;
AND
•precisely defined and specified:
–if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);
if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

2d.1 Summary of Evidence supporting exclusion(s):
No exclusions

2d.2 Citations for Evidence:
NA

2d.3 Data/sample *(description of data/sample and size)*: NA

2d.4 Analytic Method *(type analysis & rationale)*:
NA

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
NA

C☐ P☐ M☐ N☐ NA☐

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: NA

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
NA

2e.3 Testing Results *(risk model performance metrics)*:
NA

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: The measure assesses prevention and wellness in a general population; risk adjustment is not indicated.

2e
C☐ P☐ M☐ N☐ NA☐

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR rationale/data support no risk adjustment.

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: NCQA received data from 19 physician practices who submitted 10 records per measure (total 190 records per measure)

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
Comparison of means and percentiles; analysis of variance against established benchmarks; if sample size is >400, we would use an analysis of variance.

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
Below are eligible population listed by measure:
Measure 1: Vision Screening by Age 6 years: 180
Measure 2: Vision Screening by Age 13 years: 179
Measure 3: Vision Screening by Age 18 years: 163

Below are performance rates listed by measure for the numerator Documentation of Normal Screen or Abnormal with Follow Up OR Documentation of a Visit:
Measure 1: Vision Screening by Age 6 years: 11.1
Measure 2: Vision Screening by Age 13 years: 13.4
Measure 3: Vision Screening by Age 18 years: 18.4

2f
C☐ P☐ M☐ N☐

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

2g. Comparability of Multiple Data Sources/Methods

2g.1 Data/sample *(description of data/sample and size)*: NCQA received data from 19 physician practices who submitted 10 records per measure (total 190 records per measure)

2g.2 Analytic Method *(type of analysis & rationale)*:
This measure is chart review only; no other sources were identified by the expert panel; this measure does not utilize administrative data

2g
C☐ P☐ M☐ N☐ NA☐

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

2g.3 Testing Results *(e.g., correlation statistics, comparison of rankings)*: NA	
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: The measure is not stratified to detect disparities. **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** NA	**2h** **C**☐ **P**☐ **M**☐ **N**☐ **NA**☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* **C**☐ **P**☐ **M**☐ **N**☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** Not in use but testing completed **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): This measure is not currently publicly reported. NCQA is exploring the feasibility of adding this measure and its related measures into a physician-level program and/or the HEDIS® measurement set as appropriate. **3a.3 If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** This measure is not currently used in QI. NCQA is exploring the feasibility of adding this measure and its related measures into a physician-level program and/or the HEDIS® measurement set as appropriate. NCQA anticipates that after we release these measures, they will become widely used, as all our measures do. **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) **3a.4 Data/sample** *(description of data/sample and size)*: Expert panel, other stakeholders, and 19 physician field test participants **3a.5 Methods** *(e.g., focus group, survey, QI project)*: NCQA vetted the measures with its expert panel. In addition, throughout the development process, NCQA vetted the measure concepts and specifications with other stakeholder groups, including the National Association of State Medicaid Directors, NCQA's Health Plan Advisory Council, NCQA's Committee on Performance Measurement, and the American Academy of Pediatrician's Quality Improvement Innovation Network. After field testing, NCQA also conducted a debrief call with field test participants. In the form of a group interview, NCQA systematically sought feedback on whether the measures were understandable, feasible, important, and had face validity. After field testing, NCQA also conducted a debrief call with field test participants. In the form of a group interview, NCQA systematically sought feedback on whether the measures were understandable, feasible, important, and had face validity.	**3a** **C**☐ **P**☐ **M**☐ **N**☐

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

3a.6 Results *(qualitative and/or quantitative results and conclusions)*: NCQA received feedback that the measure is understandable, feasible, important and valid.	
3b/3c. Relation to other NQF-endorsed measures **3b.1 NQF # and Title of similar or related measures:**	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?**	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** **5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** NA	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability?*	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) No **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.** NCQA plans to eventually adapt this measure for use in electronic health records.	**4b** C☐ P☐ M☐ N☐
4c. Exclusions **4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No	**4c** C☐ P☐ M☐ N☐

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

4c.2 **If yes, provide justification.**	**NA**☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** During the measure development process the Child Health MAP and measure development team worked with NCQA's certified auditors and audit department to ensure that the measure specifications were clear and auditable. The denominator, numerator and any exclusions are concisely specified and align with our audit standards.	**4d** **C**☐ **P**☐ **M**☐ **N**☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Based on field test results, we have specified the measure to assess whether visual acuity was documented for each eye. Our field test results showed that these data elements are available in the medical record. In addition, our field test participants noted that many were able to program these requirements into their electronic health record systems, and several implemented point-of-service physician reminders for this measure. 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Collecting measures from medical charts is time-consuming and can be burdensome. Adapting this measure in electronic health records may relieve some of this burden. 4e.3 **Evidence for costs:** Based on field test participant feedback and other stakeholder input. 4e.4 **Business case documentation:**	**4e** **C**☐ **P**☐ **M**☐ **N**☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** **C**☐ **P**☐ **M**☐ **N**☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited** ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y**☐ **N**☐ **A**☐
CONTACT INFORMATION	
Co.1 **Measure Steward (Intellectual Property Owner)** Co.1 **Organization** National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005 Co.2 **Point of Contact** Sepheen, Byron, byron@ncqa.org, 202-955-3573-	

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

Comment [KP30]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

Measure Developer If different from Measure Steward
Co.3 Organization
National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005

Co.4 Point of Contact
Sepheen, Byron, byron@ncqa.org, 202-955-3573-

Co.5 Submitter If different from Measure Steward POC
Sepheen, Byron, byron@ncqa.org, 202-955-3573-, National Committee for Quality Assurance

Co.6 Additional organizations that sponsored/participated in measure development

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
Child Health Measurement Advisory Panel:
Jeanne Alicandro
Barbara Dailey
Denise Dougherty, PhD
Ted Ganiats, MD
Foster Gesten, MD
Nikki Highsmith, MPA
Charlie Homer, MD, MPH
Jeff Kamil, MD
Elizabeth Siteman
Mary McIntyre, MD, MPH
Virginia Moyer, MD, MPH, FAAP
Lee Partridge
Xavier Sevilla, MD, FAAP
Michael Siegal
Jessie Sullivan

Ad.2 If adapted, provide name of original measure: NA
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released:
Ad.7 Month and Year of most recent revision:
Ad.8 What is your frequency for review/update of this measure?
Ad.9 When is the next scheduled review/update for this measure?

Ad.10 Copyright statement/disclaimers:

Ad.11 -13 Additional Information web page URL or attachment:

Date of Submission (*MM/DD/YY*)**:** 09/02/2010

Page 4: [1] Comment [k4] **Karen Pace** **10/5/2009 8:59:00 AM**

1c. The measure focus is:

- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR

- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1402 **NQF Project:** Child Health Quality Measures 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Newborn Hearing Screening
De.2 **Brief description of measure***:* The percentage of children who turned 6 months old during the measurement year who had documentation of newborn hearing screening by 6 months of age.
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** This measure appears in the composite Comprehensive Well Care by Age 6 Months.
De.4 **National Priority Partners Priority Area:** Care coordination, Population health De.5 **IOM Quality Domain**: Effectiveness, Timeliness De.6 **Consumer Care Need:** Staying healthy

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** Proprietary measure A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** Y☐ N☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	C Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	D Y☐ N☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:** **Staff Reviewer Name(s):**	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Severity of illness, Patient/societal consequences of poor quality 1a.2 1a.3 **Summary of Evidence of High Impact:** Approximately 12,000 infants are born with a hearing problem (CDC, 2008). At-risk children are 10-50 times more likely to have hearing disorders (Meyer, 1999). Risk factors include a stay in the NICU longer than two days, several congenital syndromes, family history of hereditary childhood sensorineural hearing loss, craniofacial abnormalities, and certain congenital infections. While at-risk children have a higher chance of hearing disorders, around 50 percent of infants with permanent hearing loss do not have risk factors (U.S. Preventive Services Task Force, 2008). Thus, screening for hearing loss can have a significant impact. 1a.4 **Citations for Evidence of High Impact:** Center for Disease Control and Prevention. Early Hearing Detection & Intervention (EHDI) Program. http://www.cdc.gov/ncbddd/ehdi/. Updated July 2008. Meyer C. MD, et al. Neonatal Screening for Hearing Disorders in Infants at Risk: Incidence, Risk Factors, and Follow-Up. Pediatrics. October 1999. Vol. 104 No 4. Screening for Newborn Hearing Loss, Topic Page. July 2008. U.S. Preventive Services Task Force. Agency for Healthcare Research and Quality, Rockville, MD. http://www.ahrq.gov/clinic/uspstf/uspsnbhr.htm	**1a** C☐ P☐ M☐ N☐

Comment [KP1]: 1a. The measure focus addresses:
•a specific national health goal/priority identified by NQF's National Priorities Partners; OR
•a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Ideally, hearing should be screened and loss detected at three months of age with intervention (hearing aides) beginning no later than six months of age. Most hearing problems can be identified through a basic hearing screening, and, if detected and treated early, there are many options for treating hearing loss (The Nemours Foundation, 2006). This measure seeks to increase follow up of newborn hearing screening results in order to capitalize on the benefits of early detection and intervention.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
The Center for Disease Control and Prevention (CDC) reported newborn hearing screening data from 45 states, two territories, and the District of Columbia based on a 2006 survey of state early hearing detection and intervention (EHDI) coordinators. Almost half (46.3%) of the infants born in 2006 who did not pass their final newborn hearing screen did not complete follow-up or were lost to documentation (LTF/LTD). Jurisdictions reported a range of one to 99 percent of infants documented as having received an audiologic evaluations. Of those reported as received diagnostic evaluations, only 47% could be documented as having been seen before 3 months of age. Furthermore, only 49% of infants with diagnosed hearing loss were documented as enrolled in Individuals With Disabilities Act (IDEA) Part C Early Intervention or as having received other early intervention services.

State EHDI coordinators report three factors affecting these high LTF/LTD rates: poor communication between EHDI personnel and families, lack of data management and tracking systems, and lack of facilities and trained personnel.

1b.3 Citations for data on performance gap:
Tharpe, Anne Marie. Closing the Gap in EHDI Follow-Up. ASHA Leader; 3/24/2009, Vol. 14 Issue 4, p12-14, 3p

The Foundation. KidsHealth. Hearing Evaluation in Children. http://kidshealth.org/PageManager.jsp?dn=KidsHealth&lic=1&article_set=22902&cat_id=192&. Updated 2006

1b.4 Summary of Data on disparities by population group:
Examination of newborn hearing screening experiences show that children among certain socioeconomic groups are at higher risk for becoming lost to follow-up. These groups include racial/ethnic minorities; teenaged mothers or those with less than a high-school education; families with public insurance; and families from rural areas (Brach et al, 2003; Liu et al, 2005; Sommers, 2005; National Center for Hearing Assessment and Management, 2006).

1b.5 Citations for data on Disparities:
Brach C, Lewit EM, VanLandeghem K, et al. Who's enrolled in the State Children's Health Insurance Program (SCHIP)? An overview of findings from the Child Health Insurance Research Initiative (CHIRI). Pediatrics. 2003;112(6 pt 2). Available at: www.pediatrics.org/cgi/content/full/112/6/SE1/e499

Liu CL, Zaslavsky AM, Ganz ML, Perrin J, Gortmaker S, McCormick MC. Continuity of health insurance coverage for children with special health care needs. Matern Child Health J. 2005;9(4):363-375

National Center for Hearing Assessment and Management. Loss to follow-up threatens success of newborn hearing screening programs. Available at: www.infanthearing.org/newsletter/backissues/si v5n3.pdf. Accessed April 12, 2006.

Sommers BD. From Medicaid to uninsured: drop-out among children in public insurance programs. Health Serv Res. 2005; 40(1):59–78

1b
C☐
P☐
M☐
N☐

1c. Outcome or Evidence to Support Measure Focus

1c
C☐

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
oAccess – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
oEfficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Loss in hearing can substantially set a child back in healthy development. The first year of life is especially important for the acquisition of skills that greatly rely on a child's proper hearing (Meyer, 1999). Children with undetected or untreated hearing problems lag behind their peers in communication, cognition, reading, and social-emotional development (AAP; CDC, 2008).

Infants and children who are identified in the first 6 months of life and provided with immediate and appropriate intervention have significantly better outcomes than later-identified infants and children in vocabulary development, receptive and expressive language, syntax, speech production, and social-emotional development. Children enrolled in early intervention within the first year of life have also been shown to have language development within the normal range of development at 5 years of age (AAP).

1c.2-3. Type of Evidence: Evidence-based guideline, Expert opinion

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
There is strong guideline support for universal newborn hearing screening. The U.S. Preventive Services Task Force (USPSTF) recommends universal screening of all newborns by one month of age. Screening should be done in the hospital and, if not, by the primary care provider. The Joint Committee on Infant Hearing endorses the goal of universal detection of hearing loss in infants before 3 months of age, with appropriate intervention no later than 6 months of age. Universal detection of infant hearing loss requires universal screening of all infants (JCIH, 2007).

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
Good evidence

1c.6 Method for rating evidence: Expert consensus with evidence review

1c.7 Summary of Controversy/Contradictory Evidence: None

1c.8 Citations for Evidence (*other than guidelines***):** Screening for Newborn Hearing Loss, Topic Page. July 2008. U.S. Preventive Services Task Force. Agency for Healthcare Research and Quality, Rockville, MD.

American Academy of Pediatrics (AAP), Committee on Practice and Ambulatory Medicine. Recommendations for preventive pediatric health care. Pediatrics, 2000; 105:645-646.

Joint Committee on Infant Hearing. Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Pediatrics Vol. 120 No. 4 October 2007, pp. 898-921

Meyer C. MD, et al. Neonatal Screening for Hearing Disorders in Infants at Risk: Incidence, Risk Factors, and Follow-Up. Pediatrics. October 1999. Vol. 104 No 4.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
U.S. Preventive Services Task Force (2008)
The USPSTF recommends that hospital or PCP should provide 1- or 2- validated protocol (includes otoacoustic emissions (OAEs) followed by auditory brainstem response(ABR) in those who failed the first test) in all newborns by one month.
Infants who do not pass the newborn screening should undergo audiologic and medical evaluation before 3 month.
Grade: B recommendation
ICSI (2007)
The work group recommend OAE and ABR should be provided for all newborns by 1 mongh.
Level II
Joint Committee on Infant Hearing (2007)
The Joint Committee on Infant Hearing recommends that hospital and PCP should provide physiologic measure for all newborns by 1 month. The tools include OAE and ABR. PCP should review every infant's

P☐ M☐ N☐

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

medical and family history for the presence of risk indicators that require monitoring for delayed-onset or progressive hearing loss.
Any infant who demonstrates delayed auditory and/or communication skills development, should receive an audiological evaluation. By 3 months, all infants who do not pass the initial hearing screening and the subsequent rescreening should have appropriate audiological and medical evaluations . Children at risk of hearing loss should have an audiological evaluation at least once by 24 to 30 months.
Consensus and Guideline based.
AAP(2000)
The AAP recommends that hospital and the medical home should provide physiologic measure for all infants.
Regular surveillance of developmental milestones, auditory skills, parental concerns, and middle-ear status should be performed; refer if positive history/ symptoms.
Consensus and Guideline based.
Bright Futures(2008)
Verify or catch up at 1 week, 1 month or 2 months. Refer for diagnostic audiologic assessment if positive history or symptom in 4 months and 6 months.
Consensus and Guideline based.

1c.10 **Clinical Practice Guideline Citation:** Screening for Newborn Hearing Loss, Topic Page. July 2008.
U.S. Preventive Services Task Force. Agency for Healthcare Research and Quality, Rockville, MD.
Institute for Clinical Systems Improvement. Preventive Services for Children and Adolescents Thirteenth Edition. October 2007
Joint Committee on Infant Hearing. Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. Pediatrics 2007;120;898-921.
* Adopted by: Alexander Graham Bell Association for the Deaf and Hard of Hearing, the American Academy of Audiology, the American Academy of Otolaryngology-Head and Neck Surgery, the AAP, the American Speech-Language- Hearing Association, the Council on Education of the Deaf, and the Directors of Speech and Hearing Programs in State Health and Welfare Agencies.
American Academy of Pediatrics (AAP), Committee on Practice and Ambulatory Medicine. Recommendations for preventive pediatric health care. Pediatrics, 2000; 105:645-646.
American Academy of Pediatrics(AAP), Task Force on Newborn and Infant Hearing. Newborn and infant hearing loss: detection and intervention. Pediatrics. 1999;103:527–530
American Academy of Family Physicians (AAFP). Summary of recommendations for clinical preventive services. Revision 6.4. Leawood (KS): American Academy of Family Physicians (AAFP); 2007
Hagan, JF, Shaw JS, Duncan PM, eds. 2008. Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents, Third Edition. Elk Grove, IL: American Academy of Pediatrics
1c.11 **National Guideline Clearinghouse or other URL:** Universal screening for hearing loss in newborns: U.S. Preventive Services Task Force recommendation statement.
http://www.guideline.gov/content.aspx?id=12640&search=hearing+screening

1c.12 **Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):**
USPSTF-based

1c.13 **Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:**
USPSTF-based

1c.14 **Rationale for using this guideline over others:**
NCQA convened a multistakeholder panel of experts to review evidence and guidelines for child health care. The Child Health Measurement Advisory Panel reviewed these guidelines together with the health importance and field test results of this measure. The MAP concluded that the health importance, evidence and feasibility supports this measure.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report*?	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐**

Comment [k7]: USPSTF grading system **http://www.ahrq.gov/clinic/uspstf/grades.htm**: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

	N☐
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Children who had documentation in the medical record of a newborn hearing screening by age 6 months **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** 6 months **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** Documentation must include a note indicating both of the following. • A hearing test result of normal, abnormal or indeterminate	
2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):** Children who turned 6 months of age between January 1 of the measurement year and December 31 of the measurement year and who had documentation of a face-to-face visit between the clinician and the child that predates the child's birthday by at least 6 months. **2a.5 Target population gender:** Female, Male **2a.6 Target population age range:** 0 – 6 months **2a.7 Denominator Time Window (***The time period in which cases are eligible for inclusion in the denominator***):** See 2a4; chart review only **2a.8 Denominator Details (***All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):** NA	
2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** None **2a.10 Denominator Exclusion Details (***All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):** NA	
2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):** None	
2a.12-13 Risk Adjustment Type: No risk adjustment necessary **2a.14 Risk Adjustment Methodology/Variables (***List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):** NA	**2a-specs** **C☐** **P☐** **M☐** **N☐**

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
Step 1: Determine the denominator
Children who turned the requisite age in the measurement year, AND
Who had a visit within the past 12 months of the child´s birthday
Step 2: Determine the numerator
Children who had documentation in the medical record of the screening or service during the measurement year or the year previous to the measurement year.

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
Comparison of means and percentiles; analysis of variance against established benchmarks; if sample size is >400, we would use an analysis of variance.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
For this physician-level measure, we anticipate the entire population will be used in the denominator. If a sample is used, a random sample is ideal. NCQA's work has indicated that a sample size of 30-50 patients would be necessary for a typical practice size of 2000 patients.

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Paper medical record/flow-sheet, Electronic administrative data/claims, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
Medical Record

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

2a.29-31 Data dictionary/code table web page URL or attachment:

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Individual, Clinicians: Group, Population: national, Population: regional/network

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Ambulatory Care: Office, Ambulatory Care: Clinic, Ambulatory Care: Hospital Outpatient

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** NCQA received data from 19 physician practices who submitted 10 records per measure (total 190 records per measure)

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
We did not conduct reliability testing for this measure.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
NA

2b
C☐
P☐
M☐
N☐

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)***:** NCQA received data from 19 physician practices who submitted 10 records per measure (total 190 records per measure)

2c
C☐
P☐
M☐

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
NCQA tested the measure for face validity using a panel of stakeholders with specific expertise in measurement and child health care. This panel included representatives from key stakeholder groups, including pediatricians, family physicians, health plans, state Medicaid agencies and researchers. Experts reviewed the results of the field test and assessed whether the results were consistent with expectations, whether the measure represented quality care, and whether we were measuring the most important aspect of care in this area.

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
This measure was deemed valid by the expert panel. In addition, this measure does not utilize administrative data sources; data recorded in the chart is considered the gold standard.

N☐

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
No Exclusions

2d.2 Citations for Evidence:
NA

2d.3 Data/sample *(description of data/sample and size)*: NA

2d.4 Analytic Method *(type analysis & rationale)*:
NA

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
NA

2d
C☐
P☐
M☐
N☐
NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: NA

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
NA

2e.3 Testing Results *(risk model performance metrics)*:
NA

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: The measure assesses prevention and wellness in a general population; risk adjustment is not indicated.

2e
C☐
P☐
M☐
N☐
NA☐

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: NCQA received data from 19 physician practices who submitted 10 records per measure (total 190 records per measure)

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
Comparison of means and percentiles; analysis of variance against established benchmarks; if sample size is >400, we would use an analysis of variance

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
Elig Population: 180
Performance rate for results and proper follow up documented: 80.0

2f
C☐
P☐
M☐
N☐

2g. Comparability of Multiple Data Sources/Methods

2g

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus; ... [1]

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outc ... [2]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and w ... [3]

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation ... [4]

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

2g.1 Data/sample *(description of data/sample and size)*: NCQA received data from 19 physician practices who submitted 10 records per measure (total 190 records per measure) **2g.2 Analytic Method** *(type of analysis & rationale)*: This measure is chart review only; no other sources were identified by the expert panel; this measure does not utilize administrative data. **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*: NA	C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: The measure is not stratified to detect disparities. **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** NA	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** Not in use but testing completed **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): This measure is not currently publicly reported. NCQA is exploring the feasibility of adding this measure and its related measures into a physician-level program and/or the HEDIS® measurement set as appropriate. **3a.3 If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years*): This measure is not currently used in QI. NCQA is exploring the feasibility of adding this measure and its related measures into a physician-level program and/or the HEDIS® measurement set as appropriate. NCQA anticipates that after we release these measures, they will become widely used, as all our measures do. **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) **3a.4 Data/sample** *(description of data/sample and size)*: Expert panel, other stakeholders, and 19 physician field test participants **3a.5 Methods** *(e.g., focus group, survey, QI project)*: NCQA vetted the measures with its expert panel. In addition, throughout the development process, NCQA vetted the measure concepts and specifications with other stakeholder groups, including the National Association of State Medicaid Directors, NCQA's Health Plan Advisory Council, NCQA's Committee on Performance Measurement, and the American Academy of Pediatrician's Quality Improvement Innovation	**3a** C☐ P☐ M☐ N☐

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

Network. After field testing, NCQA also conducted a debrief call with field test participants. In the form of a group interview, NCQA systematically sought feedback on whether the measures were understandable, feasible, important, and had face validity. 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)*: NCQA received feedback that the measure is understandable, feasible, important and valid.	
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:**	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?**	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** NA	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability?*	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability***, met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) No 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.** NCQA plans to eventually adapt this measure for use in electronic health records.	**4b** C☐ P☐ M☐ N☐

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

4c. Exclusions

4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?**
No

4c.2 **If yes, provide justification.**

4c C☐ P☐ M☐ N☐ NA☐

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences

4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.**
During the measure development process the Child Health MAP and measure development team worked with NCQA's certified auditors and audit department to ensure that the measure specifications were clear and auditable. The denominator, numerator and any exclusions are concisely specified and align with our audit standards.

4d C☐ P☐ M☐ N☐

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

4e. Data Collection Strategy/Implementation

4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:**
Based on field test results, we have specified the measure to assess whether screening was documented in the medical record and whether results were present in the medical record. Our field test results showed that these data elements are available in the medical record. In addition, our field test participants noted that many were able to program these requirements into their electronic health record systems, and several implemented point-of-service physician reminders for this measure.

4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:**
Collecting measures from medical charts is time-consuming and can be burdensome. Adapting this measure in electronic health records may relieve some of this burden.

4e.3 **Evidence for costs:**
Based on field test participant feedback and other stakeholder input

4e.4 **Business case documentation:**

4e C☐ P☐ M☐ N☐

Comment [KP30]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?

4

Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met?
Rationale:

4 C☐ P☐ M☐ N☐

RECOMMENDATION

(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**

Time-limited ☐

Steering Committee: Do you recommend for endorsement?
Comments:

Y☐ N☐ A☐

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**

National Committee for Qualtiy Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005

Co.2 **Point of Contact**
Sepheen, Byron, MHS, byron@ncqa.org, 202-955-3573-

Measure Developer If different from Measure Steward
Co.3 **Organization**
National Committee for Qualtiy Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005

Co.4 **Point of Contact**
Sepheen, Byron, MHS, byron@ncqa.org, 202-955-3573-

Co.5 **Submitter If different from Measure Steward POC**
Sepheen, Byron, MHS, byron@ncqa.org, 202-955-3573-, National Committee for Qualtiy Assurance

Co.6 **Additional organizations that sponsored/participated in measure development**

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
Child Health Measurement Advisory Panel:
Jeanne Alicandro
Barbara Dailey
Denise Dougherty, PhD
Ted Ganiats, MD
Foster Gesten, MD
Nikki Highsmith, MPA
Charlie Homer, MD, MPH
Jeff Kamil, MD
Elizabeth Siteman
Mary McIntyre, MD, MPH
Virginia Moyer, MD, MPH, FAAP
Lee Partridge
Xavier Sevilla, MD, FAAP
Michael Siegal
Jessie Sullivan

Ad.2 **If adapted, provide name of original measure:** NA
Ad.3-5 **If adapted, provide original specifications URL or attachment**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:**
Ad.7 **Month and Year of most recent revision:**
Ad.8 **What is your frequency for review/update of this measure?**
Ad.9 **When is the next scheduled review/update for this measure?**

Ad.10 **Copyright statement/disclaimers:**

Ad.11 -13 **Additional Information web page URL or attachment:**

Date of Submission (*MM/DD/YY*)**:** 09/02/2010

Page 8: [1] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

2d. Clinically necessary measure exclusions are identified and must be:

- supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;

AND

- a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;

AND

- precisely defined and specified:
  - if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);

if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

Page 8: [2] Comment [KP16] **Karen Pace** **10/5/2009 8:59:00 AM**

2e. For outcome measures and other measures (e.g., resource use) when indicated:

- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR

rationale/data support no risk adjustment.

Page 8: [3] Comment [k17] **Karen Pace** **10/5/2009 8:59:00 AM**

13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

Page 8: [4] Comment [k19] **Karen Pace** **10/5/2009 8:59:00 AM**

14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1412 **NQF Project:** Child Health Quality Measures 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Pre-School Vision Screening in the Medical Home
De.2 **Brief description of measure***:* Percentage of pre-school aged children who receive vision screening in the medical home
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness De.6 **Consumer Care Need:** Staying healthy

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes ECKB**Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least	**B** **Y**☐

every 3 years. Yes, information provided in contact section	**N**☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement	**C** **Y**☐ **N**☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** No, testing will be completed within 12 months D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** **Y**☐ **N**☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** **Y**☐ **N**☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Patient/societal consequences of poor quality 1a.2 1a.3 **Summary of Evidence of High Impact:** Vision disorders are the fourth most prevalent class of disability in the United States and the most prevalent handicapping conditions in childhood. Early detection increases the likelihood of effective treatment and allows for actions to decrease the negative impact of the disorders. However, fewer than 15 percent of all preschool children receive an eye examination and less than 22 percent of preschool children receive some type of vision screening. Early screening can lead to the detection of amblyopia (2-5%), strabismus (3-4%), and significant refractive error (15-20%), the most prevalent and significant vision disorders of preschool children. 1a.4 **Citations for Evidence of High Impact:** Vision in Pre-Schoolers Study, National Eye Institute, http://www.nei.nih.gov/neitrials/static/study85.asp Rahi JS, Logan S, Timms C, Russell-Eggitt I, Taylor D (2002) Risk, causes, and outcomes of visual impairment after loss of vision in the non-amblyopic eye: a population-based study. Lancet 360:597–602 Chua B, Mitchell P (2004) Consequences of amblyopia on education, occupation, and long term vision loss. Br J Ophthalmol 88:1119–1121 Coats DK, Paysse EA, Towler AJ, Dipboy RL (2000) Impact of large angle horizontal strabismus on ability to obtain employment. Ophthalmology 107:402–405 Uretmen O, Egrilmez S, Kose S, Pamukcu K, Akkin C, Palamar M (2003) Negative social bias against children	**1a** **C**☐ **P**☐ **M**☐ **N**☐

with strabismus. Acta Ophthalmol Scand 81:138–142

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Early vision screening can lead to the detection, treatment, and prevention of many eye diseases. For example, amblyopia is preventable and treatable. Prevention and treatment of amblyopia is contingent upon early detection of risk factors and amblyopia during the critical period for visual development. If all children receive vision screening at well-child visits in their medical home, permanent visual loss due to amblyopia will decrease significantly. Studies have demonstrated that screening and treating amblyopia is an excellent use of health care resources with a very low cost per quality of life-adjusted years gained.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
Demonstration of an existing deficiency: The Pediatric Research in Office Setting and other studies have demonstrated that a minority of children are receiving proper vision screening in their medical home.

1b.3 Citations for data on performance gap:
Pre-School Vision Screening in Pediatric Practice: A study from the Pediatric Research in Office Settings Network. Pediatr 9(5): 834-838.
Vision in Pre-Schoolers Study, National Eye Institute, http://www.nei.nih.gov/neitrials/static/study85.asp

1b.4 Summary of Data on disparities by population group:

1b.5 Citations for data on Disparities:

1b
C☐
P☐
M☐
N☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Early detection of vision disorders leads to diagnosis and treatment of vision loss

1c.2-3. Type of Evidence: Observational study, Randomized controlled trial, Expert opinion

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Studies demonstrate that early detection can lead to diagnosis and treatment of vision loss

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
USPSTF Grade B

1c.6 Method for rating evidence:

1c.7 Summary of Controversy/Contradictory Evidence:

1c.8 Citations for Evidence (*other than guidelines***):** Screening for Visual Impairment in Children Younger than Age 5 Years, Topic Page. May 2004. U.S. Preventive Services Task Force.
http://www.uspreventiveservicestaskforce.org/uspstf/uspsvsch.htm
Eye Examination in Infants, Children, and Young Adults by Pediatricians. Pediatr 111(4):902-907.
A Joint Statement of the American Association for Pediatric Eye Exams for Children: Their Impact and Cost Effectiveness, http://www.abtassociates.com/reports/es_cost_effectiveness_of_eye_exams.pdf
Ophthalmology and Strabismus and the American Academy of Ophthalmology. Vision screening for infants and children (2007)
Carlton J, Karnon J, Czoski-Murray C, Smith KJ, Marr J(2008) The clinical effectiveness and cost-effectiveness of screening programmes for amblyopia and strabismus in children up to the age of 4–5 years: a systematic review and

1c
C☐
P☐
M☐
N☐

economic evaluation. Health Technol Assess 12(25):iii-194 Williams C, Harrad RA, Harvey I, Sparrow JM, ALSPAC study group (2001) Screening for amblyopia in preschool children: results of a population-based randomised controlled trial. Ophthalmic Epidemiol 8:279–295 The vision in preschoolers study group (2005) Sensitivity of screening tests for detecting vision in preschoolers targeted vision disorders when specificity is 94%. Optom Vis Sci 82:432–438 Vision in preschoolers study group (2006) Random Dot E stereotest: testability and reliability in 3- to 5-year-old children. J AAPOS 10(6):507–514 The vision in preschoolers study group (2004) Comparison of preschool vision screening tests as administered by licensed eye care professionals in the vision in preschoolers study. Ophthalmology 111:637–650 Donahue SP., Baker JD., Scott, WE., Rychwalski P., Neely DE., Tong, P. Bergsma D., Lenahan D., Rush D., Heinlein K., Walkenbach R., Johnson TM. Lions Clubs International Foundation Core Four Photoscreening: Results from 17 Programs and 400,000 Preschool Children. J AAPOS. 2006; 10(1):44-8. 1c.9 **Quote the Specific guideline recommendation (***including guideline number and/or page number***):** 1c.10 **Clinical Practice Guideline Citation:** 1c.11 **National Guideline Clearinghouse or other URL:** 1c.12 **Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** 1c.13 **Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:** 1c.14 **Rationale for using this guideline over others:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 **Do you have a web page where current detailed measure specifications can be obtained?** S.2 **If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 **Numerator Statement (***Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Number of pre-school children under 5 years-old that receive visual acuity testing or photoscreening in the medical home 2a.2 **Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):**	**2a-specs** **C☐** **P☐** **M☐** **N☐**

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
Screening test of visual acuity (CPT Code 99173)
Photoscreening (CPT Code 99174)

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
All children under 5 years-old who attend a routine well-child visit in their medical home

2a.5 Target population gender:
2a.6 Target population age range:

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
99382 1 - 4 years of age (new patient)
99392 1 - 4 years of age (established patient)

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):**
Documentation of medical reason(s) for not performing vision screening
Documentation of patient reason(s) for not performing vision screening (ie, clinically unstable or uncooperative child; parents who refuse screening)

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Ratio
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
100% of all children who receive a routine well-child visit; total sample size should be no less than 10% of all routine well-child visits.

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic administrative data/claims

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**

2a.26-28 Data source/data collection instrument reference web page URL or attachment: **2a.29-31 Data dictionary/code table web page URL or attachment:** **2a.32-35 Level of Measurement/Analysis** (*Check the level(s) for which the measure is specified and tested)* Clinicians: Individual, Clinicians: Group, Health Plan, Integrated delivery system, Population: national **2a.36-37 Care Settings (***Check the setting(s) for which the measure is specified and tested)* Ambulatory Care: Office, Ambulatory Care: Clinic **2a.38-41 Clinical Services** (*Healthcare services being measured, check all that apply*) Clinicians: Physicians (MD/DO)	
TESTING/ANALYSIS	
2b. Reliability testing **2b.1 Data/sample** *(description of data/sample and size)***:** **2b.2 Analytic Method** *(type of reliability & rationale, method for testing)***:** **2b.3 Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**	**2b** **C☐** **P☐** **M☐** **N☐**
2c. Validity testing **2c.1 Data/sample** *(description of data/sample and size)***:** **2c.2 Analytic Method** *(type of validity & rationale, method for testing)***:** **2c.3 Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)***:**	**2c** **C☐** **P☐** **M☐** **N☐**
2d. Exclusions Justified **2d.1 Summary of Evidence supporting exclusion(s):** **2d.2 Citations for Evidence:** **2d.3 Data/sample** *(description of data/sample and size)***:** **2d.4 Analytic Method** *(type analysis & rationale)***:** **2d.5 Testing Results** *(e.g., frequency, variability, sensitivity analyses)***:**	**2d** **C☐** **P☐** **M☐** **N☐** **NA☐**
2e. Risk Adjustment for Outcomes/ Resource Use Measures **2e.1 Data/sample** *(description of data/sample and size)***:** **2e.2 Analytic Method** *(type of risk adjustment, analysis, & rationale)***:**	**2e** **C☐** **P☐** **M☐** **N☐** **NA☐**

2e.3 Testing Results *(risk model performance metrics)*: **2e.4 If outcome or resource use measure is not risk adjusted, provide rationale:**	
2f. Identification of Meaningful Differences in Performance **2f.1 Data/sample from Testing or Current Use** *(description of data/sample and size)*: **2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: **2f.3 Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods **2g.1 Data/sample** *(description of data/sample and size)*: **2g.2 Analytic Method** *(type of analysis & rationale)*: **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*:	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** Testing not yet completed **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): **3a.3 If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**	**3a** C☐ P☐ M☐ N☐

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) 3a.4 **Data/sample** *(description of data/sample and size)*: 3a.5 **Methods** *(e.g., focus group, survey, QI project)*: 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)*:	
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:**	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?**	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability?*	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐

4c. Exclusions **4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No **4c.2 If yes, provide justification.**	**4c** **C☐** **P☐** **M☐** **N☐** **NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences **4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** Potential inaccuracies include physicians´ failure to do screening with a report of the CPT code for screening or physicians´ completion of the screening with failure to report the CPT code for screening	**4d** **C☐** **P☐** **M☐** **N☐**
4e. Data Collection Strategy/Implementation **4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** **4e.2 Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** **4e.3 Evidence for costs:** **4e.4 Business case documentation:**	**4e** **C☐** **P☐** **M☐** **N☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**
CONTACT INFORMATION	
Co.1 Measure Steward (Intellectual Property Owner) **Co.1 Organization** American Academy of Pediatrics, 141 NW Point Blvd, Elk Grove Village, Illinois, 60007 **Co.2 Point of Contact** Junelle, Speller, jspeller@aap.org, 847-434-7650-	
Measure Developer If different from Measure Steward **Co.3 Organization**	

American Academy of Pediatrics, 141 NW Point Blvd, Elk Grove Village, Illinois, 60007 Co.4 **Point of Contact** James, Ruben, MD, james.ruben@gmail.com, 916-804-2701-
Co.5 **Submitter If different from Measure Steward POC** Junelle, Speller, jspeller@aap.org, 847-434-7650-, American Academy of Pediatrics
Co.6 **Additional organizations that sponsored/participated in measure development**
ADDITIONAL INFORMATION
Workgroup/Expert Panel involved in measure development Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
Ad.2 **If adapted, provide name of original measure:** Ad.3-5 **If adapted, provide original specifications URL or attachment**
Measure Developer/Steward Updates and Ongoing Maintenance Ad.6 **Year the measure was first released:** 2010 Ad.7 **Month and Year of most recent revision:** 08, 2010 Ad.8 **What is your frequency for review/update of this measure?** Ad.9 **When is the next scheduled review/update for this measure?**
Ad.10 **Copyright statement/disclaimers:**
Ad.11 -13 **Additional Information web page URL or attachment:**
Date of Submission (*MM/DD/YY*)**:** 08/30/2010