NATIONAL QUALITY FORUM

TO: NQF Members and Public

FR: NQF Staff

RE: Pre-voting review for *National Voluntary Consensus Standards for Patient Outcomes: Child Health (Phase III): A Consensus Report*

DA: July 12, 2010

This draft report is from NQF's multiphase patient outcomes project. The project seeks to endorse additional consensus standards for patient outcomes in a variety of high impact (high volume, high cost, high morbidity, or mortality) conditions:

- Phase 1—pulmonary and some cardiovascular conditions;
- Phase 2—cross-cutting measures, diabetes, GI/biliary conditions, cancer, bone and joint, eye care, surgery, infectious disease, and additional cardiovascular measures; and
- Phase 3—child health and mental health.

A Steering Committee of 17 individuals representing a diverse range of stakeholder perspectives reviewed and considered for endorsement a total of 26 candidate mental health outcome standards. This draft report recommends 15 measures be considered for endorsement.

The draft document, *National Voluntary Consensus Standards for Patient Outcomes: Child Health (Phase III): A Consensus Report* is posted on the NQF website (click here for the report) along with the following additional information:

- Measure submission forms, and
- Meeting and conference call summaries for the Steering Committee.

Pursuant to section II.A of the Consensus Development Process v. 1.8, this draft document, along with the accompanying material, is being provided to you at this time for purposes of review and comment only—not voting. You may post your comments and view the comments of others on the NQF website.

NQF Member comments must be submitted no later than 6:00 pm ET on August 20, 2010.
Public comments must be submitted no later than 6:00 pm ET on August 11, 2010.

NQF is now using a program that facilitates electronic submission of comments on this draft report. **All comments must be submitted using the online submission process.**

Supporting documents related to your comments may be submitted by **e-mail** to: outcomes@qualityforum.org, with the subject line "*Comment—Patient Outcomes Child Health*," and your contact information in the body of the e-mail.

Thank you for your interest in NQF's work. We look forward to your review and comments.

NATIONAL QUALITY FORUM

NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES—PHASE III CHILD HEALTH: A CONSENSUS REPORT

DRAFT REPORT FOR COMMENTING

NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES—PHASE III CHILD HEALTH: A CONSENSUS REPORT

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EXECUTIVE SUMMARY

The results or outcome of an episode of healthcare are inherently important because they reflect the reasons consumers seek healthcare (e.g., to improve function, reduce symptoms, decrease pain, and improve well-being), as well as the results healthcare providers are trying to achieve. Outcome measures also provide an integrative assessment of quality reflective of multiple care processes across the continuum of care. There are a variety of types of outcome measures such as health or functional status, physiologic measurements, adverse outcomes, patient and caregiver experience with care, and morbidity and mortality. To date, the National Quality Forum (NQF) has endorsed few outcome measures specific to child health (see Appendix C). Many gaps remain for measures focused on child function, health-related quality of life, patient and caregiver experience with care, and promotion of healthy behaviors. To ensure quality of care across the continuum of a child's experience, it is necessary to develop and implement child health outcome measures that promote health and well-being across all spectrums of care and influence.

This report presents the results of the evaluation of 26 measures considered under NQF's Consensus Development Process. Fifteen measures are recommended for endorsement as voluntary consensus standards suitable for public reporting and quality improvement.

- OT3-027-10: Ventriculoperitoneal (VP) shunt malfunction rate in children
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NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT OUTCOMES—PHASE 3: CHILD HEALTH

BACKGROUND

To achieve quality healthcare across a full continuum of conditions, settings, populations, and structures of care, there is a need for additional measures that specifically address child health. Outcome measures are inherently relevant because they reflect the reasons consumers seek healthcare (e.g., to improve function, decrease pain, survive), as well as the results healthcare providers are trying to achieve. Outcome measures can be used by consumers to select providers and can also facilitate quality improvement.[1] For example, if a provider's performance on a risk-adjusted outcome measure is lower than those of other providers, then there is a need to investigate the cause of the low performance, or the performance on associated process measures, and to initiate strategies for improvement. Outcome measures should reflect the care provided by all caregivers, as well as by various health-enhancing services, across settings and throughout patient-focused episodes of care.

Donabedian defined outcomes as "changes (desirable or undesirable) in individuals and populations that are attributed to healthcare."[2] Outcome measures provide an integrative assessment of quality reflective of multiple care processes across the continuum of care. Child health outcome measures focus on the ultimate outcome of healthful transition from childhood to adulthood, with many intermediate outcomes that influence the long term outcome. Although there are many process measures targeting child health, an environmental scan of the literature yielded few outcome measures specifically focusing on child health and well-being.

To date, the National Quality Forum (NQF) has endorsed few outcomes measures related to child health, and, of those, most focus on the hospital level (see Appendix C). However, there is a larger number of NQF-endorsed® process measures that are related directly to child health conditions. Major gaps remain for outcome measures focused on child function, health-related quality of life, patient and caregiver experience with care, and promotion of healthful behaviors. To ensure quality of care across the continuum of a child's experience, it is necessary to develop and implement child health outcome measures that promote health and well-being across all spectrums of care and influence.

STRATEGIC DIRECTIONS FOR NQF

NQF's mission includes three parts: 1) setting national priorities and goals for performance improvement, 2) endorsing national consensus standards for measuring and publicly reporting on performance, and 3) promoting the attainment of national goals through education and outreach programs. As greater numbers of quality measures are developed and brought to NQF for consideration of endorsement, it is incumbent on NQF to assist stakeholders to "measure what makes a difference" and address what is important in order to achieve the best outcomes for patients and populations.

Several strategic issues have been identified to guide consideration of candidate consensus standards:

DRIVE TOWARD HIGH PERFORMANCE. Over time, the bar of performance expectations should be raised to encourage achievement of higher levels of system performance.

EMPHASIZE COMPOSITES. Composite measures provide much needed summary information pertaining to multiple dimensions of performance and are more comprehensible to patients and consumers.

MOVE TOWARD OUTCOME MEASUREMENT. Outcome measures provide information of keen interest to consumers and purchasers, and when coupled with healthcare process measures, they provide useful and actionable information to providers. Outcome measures also focus attention on much-needed system-level improvements, because achieving the best patient outcomes often requires carefully designed care processes, teamwork, and coordinated action on the part of many providers.

CONSIDER DISPARITIES IN ALL THAT WE DO. Some of the greatest performance gaps relate to care of minority populations. Particular attention should be focused on identifying disparities-sensitive performance measures and on identifying the most relevant race/ethnicity/language strata for reporting purposes.

NATIONAL PRIORITIES PARTNERSHIP

NQF seeks to endorse measures that address the National Priorities and Goals of the National Priorities Partnership.[3] The National Priorities Partnership represents those who receive, pay for, provide, and evaluate healthcare. The National Priorities and Goals focus on these areas:

- patient and family engagement,
- population health,
- safety,
- care coordination,
- palliative and end-of-life care, and
- overuse.

NQF'S CONSENSUS DEVELOPMENT PROCESS

Patient Outcomes Project

NQF's National Voluntary Consensus Standards for Patient Outcomes project[4] seeks to endorse additional outcome measures with an emphasis on high-impact (high-volume, high-morbidity, high-cost) conditions and cross-cutting areas. The Patient Outcomes project is structured in three phases:

- Phase 1—pulmonary and some cardiovascular conditions;
- Phase 2—cross-cutting measures, diabetes, gastrointestinal/biliary conditions, cancer, bone and joint, eye care, surgery, infectious disease, and additional cardiovascular measures;

- Phase 3—child health and mental health.

Additionally, the project will identify gaps in important outcome measures.

Scope of Patient Outcomes

As part of the Patient Outcomes project, the Child Health Steering Committee (Appendix B) was tasked to identify and develop a prioritization for child health outcome measures. The Steering Committee reviewed and discussed at length current measures, research, interventions, policies, and health trends in the child health arena. The Committee also considered the connection between performance measures in the healthcare areas with activities and influences in the community, specifically focusing on areas of shared accountability. Ultimately, the Committee identified a variety of types of child health outcomes that fall within the scope of this project:

- patient function, symptoms, healthcare-related quality of life;
- intermediate clinical outcomes;
- child development;
- patient/parent experience with care;
- patient and family functioning;
- service utilization as a proxy for or potential indicator of efficiency;
- non-mortality clinical morbidity related to disease control and treatment;
- healthcare-acquired events/complications;
- safe and healthful living environment; and
- mortality.

Evaluating Potential Consensus Standards

This report presents the evaluation of an initial group of 26 child health measures. Candidate consensus standards were solicited through a Call for Measures in December 2009 and actively sought through searches of the National Quality Measures Clearinghouse and NQF Member websites and an environmental scan. NQF staff contacted potential measure developers to encourage the submission of measures for this project.

Twenty-six measures were evaluated for their suitability as voluntary consensus standards for accountability and public reporting in the third phase of this project. The measures were evaluated using NQF's standard evaluation criteria.[5] The multi-stakeholder Steering Committee evaluated the 26 measures on the 4 main NQF criteria: importance to measure and report, scientific acceptability of the measure properties, usability, and feasibility. The Steering Committee recommended for endorsement those measures that meet the NQF criteria and for time-limited endorsement those measures that meet all criteria except for those related to field testing. Measure developers participated in Steering Committee discussions to respond to questions and clarify any issues or concerns.

Many of the candidate standards evaluate the quality of care at the population level rather than at the provider level. The Committee included population-level measures within the scope of the project because they support at least one of the National Priorities Partnership's Priority areas. The Steering Committee strongly supported this broad view of performance measurement, because it captures influences and cost information on children's wellbeing outside of traditional healthcare, such as the community, schools, and the environment.

RECOMMENDATIONS FOR ENDORSEMENT

This report presents the results of the evaluation of 26 measures considered under NQF's CDP. Fifteen measures are recommended for endorsement as voluntary consensus standards suitable for public reporting and quality improvement.

Candidate Consensus Standards Recommended for Endorsement

OT3-031-10: Healthy term newborn (California Maternal Quality Care Collaborative)
This measure provides the percentage of term singleton live births (excluding those with diagnoses originating in the fetal period) who do not have significant complications during birth or post partum arising from the management of the birth process itself. This measure is intended to be used at the provider level of measurement.

This measure assesses the optimal outcome of pregnancy and childbirth, specifically a health term newborn. Some stakeholders have raised concerns that attempts at reducing C-section rates and early inductions of labor will jeopardize the newborn. This measure will evaluate the impact of any changes in management or intervention on the most desirable outcome for the newborn. The Committee agreed that this measure is well specified, using only codes from the newborn record. The measure has been field tested in 15 hospitals in southern California and has identified a 3- to 4-fold variation in outcomes. The Committee noted that the measure does not account for disadvantaged populations according to race, socioeconomic status, or living conditions and suggested that future testing based on stratification be conducted.

OT3-055-10: Gastroenteritis admission rate (pediatric) (Agency for Healthcare Research and Quality) *This measure provides the admission rate for gastroenteritis in children ages 3 months to 17 years, per 100,000 population. This measure is intended to be used at the population level of measurement.*

The intent of this measure is to monitor the admission rate for gastroenteritis in children at the population level. The Committee noted that this measure addresses a high-frequency illness and is very actionable. This measure highlights issues of communication, such as when healthcare providers may face cultural or social challenges in educating parents about their child’s health. The Committee agreed that the measure is feasible but suggested that an accompanying tool be developed to enable facilities to ensure accurate implementation. The Committee also noted concerns with potential misuse of the measure at facility or provider levels of analysis as well as the potential unintended consequence of avoiding appropriate admissions. This measure addresses the National Priority of Population Health.

OT3-057-10: Asthma admission rate (pediatric) (Agency for Healthcare Research and Quality) *This measure provides the admission rate for asthma in children ages 2 to 17 years, per 100,000 population. This measure is intended to be used at the population level of measurement.*

The intent of this measure is to monitor the hospital admission rate for asthma in children at the population level. Committee members noted that point-in-time assessments of hospitalizations for asthma may lead to inaccuracies; assessments of emergency department (ED) visits would be more sensitive to the quality of ambulatory care for asthma. This measure includes children ages two to five years, ages when the diagnosis of asthma is frequently associated with an infectious condition such as pneumonia and is more complex to manage. Concerns were raised about the harmonization[6] of the age at diagnosis for asthma. The Committee mentioned that conventional wisdom on asthma diagnosis suggests that you cannot diagnose asthma before age 2, and some would say there is "wiggle room" between ages 2 and 5. Also, it is likely easier to clinically diagnose a child with asthma over the age of five. In addition, the Committee noted concerns with the potential misuse of the measure at facility level or provider levels of analysis as well as the potential unintended consequence of avoiding appropriate admissions. Overall, the Committee agreed this demonstrated importance and feasible for implementation. This measure addresses the National Priority of Population Health.

Candidate Standards Derived from the National Survey of Children's Health (NSCH) 2007

The next seven recommended population-level measures are derived from the National Survey of Children's Health (NSCH) 2007, which asks parents or guardians a variety of questions about their child's health. These measures were developed by the Child and Adolescent Health Measurement Initiative.

OT3-032-10: Number of school days children miss due to illness (Child and Adolescent Health Measurement Initiative) *This measure identifies how many school days children miss due to illness or injury among a sample of children and adolescents ages 6 to 17 years. This measure is intended to be used at the population level of measurement.*

This measure assesses the correlation between the number of school days children miss and the number of days children miss due to illness. The Committee agreed this measure was very important, usable and feasible to implement. There was discussion with regard to the validity of the data collected, particularly the absence of clear definitions of injury, illness of "healthy kids" and "unhealthy kids." There is a potential for responder bias because the number of school days missed is based on caregiver recollection as opposed to some standard method of collection, i.e., school records. In addition, the national survey is administered only every four years, which can limit its usefulness. The Committee suggested exploring other means of capturing the data, such as including this question in other instruments that are administered more frequently for the future. Overall, despite these concerns expressed, the Committee agreed this measure was an important outcome for Child Health. This measure addresses the National Priority of Population Health.

OT3-036-10: Children who have problems obtaining referrals when needed (Child and Adolescent Health Measurement Initiative) *This candidate standard ascertains the perceived difficulty in obtaining referrals for children when needed for optimum health. This measure is intended to be used at the population level of measurement.*

This measure assesses access to healthcare for children. The Committee agreed that access to healthcare is important to measure and report but held varying opinions on the scientific acceptability, usability, and feasibility of the measure. Some Committee members raised concerns about the possibility of reporter bias because results are based on parental reporting and the subjective evaluation of “needed” versus “wanted.” The measure developer referenced a study that evaluated the degree of need for referrals from a provider perspective and a parental perspective, and the results demonstrated a lack of correlation.[7,8] The Committee suggested this population-level measure could be supported by more specific provider-level measures to increase overall quality improvement, but agreed overall that this measure addressed an important concept related to Child Health Outcomes. This measure addresses the National Priority of Population Health.

OT3-038-10: (a) Children who did not receive sufficient care coordination services when needed (b) Children who did not receive satisfactory communication among providers when needed (Child and Adolescent Health Measurement Initiative) *This two-part candidate standard assesses the need and receipt of care coordination services for children who required care and assesses the need and receipt of care coordination communication services for children who required care. This measure is intended to be used at the population level of measurement.*

This two-part measure assesses (1) care coordination services and (2) communication among providers. The Committee agreed this measure was important and supported a measure focused on capturing parental satisfaction/experience with communication. The Committee also agrees the candidate standard addresses two important areas: satisfaction/experience with the coordination of care and communication. However, the two different constructs (coordination and communication) raised issues related to validity. The Committee agreed the two components of this measure, while related, should be separate. The developers addressed the concerns of the Committee by separating out the communication component. This measure addresses the National Priorities of Population Health and Care Coordination.

OT3-039-10: Children who live in communities perceived as safe (Child and Adolescent Health Measurement Initiative) *This candidate standard ascertains the parents' perceived safety of the child's community or neighborhood. This measure is intended to be used at the population level of measurement.*

This measure assesses the perceived safety of the communities in which children live. The Committee agreed that the topic area addresses an important social determinant of health and that the measure is well specified. The Committee noted that the term "safe" must be explicitly defined because parental perspectives of "safe" vary depending on location, upbringing, and political views. The Committee also noted that safety may need to be evaluated outside the realm of medical care, that is, in juvenile detention centers or in relation to housing. This measure addresses the National Priority of Population Health.

OT3-041-10: Children who attend schools perceived as safe (Child and Adolescent Health Measurement Initiative) *This candidate standard ascertains the perceived safety of a child's school. This measure is intended to be used at the population level of measurement.*

The Committee agreed that this measure serves as an important indicator and noted the clear correlation between the safety of a school and the overall health of its students. Committee members discussed the notion of perceived safety and the differences in perception within the community and the school. The Committee also believed that this measure is highly actionable because of its focus on schools and the measure encourages shared accountability a focus for the Committee and child health. This measure demonstrates favorable results for feasibility and usability and addresses the National Priority of Population Health.

OT3-044-10: Children who have adequate insurance coverage for optimal health (Child and Adolescent Health Measurement Initiative) *This candidate standard determines whether or not current insurance program coverage is adequate for the child's health needs. This measure is intended to be used at the population level of measurement.*

This measure assesses adequacy of insurance coverage to allow children to achieve optimal health. Committee members noted the importance of this measure in the context of health reform to assess new plans and programs. They also noted that this measure reports the parents'/caregivers' perception of the insurance plan, which can be subjective and can vary by socioeconomic status. The measure developer stated that the measure has strong face validity and can be stratified by vulnerability characteristics or income. This measure addresses the National Priority of Population Health.

OT3-045-10: Measure of medical home for children and adolescents (Child and Adolescent Health Measurement Initiative) *This candidate standard assesses whether children receive healthcare within a medical home. This measure is intended to be used at the population level of measurement.*

The intent of this measure is to assess if children are receiving care in a medical home, the definition of which is based on six of the seven components of the medical home as described by the American Academy of Pediatrics (AAP)—healthcare that is accessible, family-centered, continuous, comprehensive, coordinated, compassionate, and culturally effective. The Committee agreed that the concept of the medical home is important and demonstrates a linkage to outcomes. In addition, the Committee discussed the specific medical home concepts and the consistency of these concepts with national initiatives focused on the medical home, such as the National Committee for Quality Assurance (NCQA) Patient-Centered Medical Home standards. The Committee did recognize the idealistic nature of some concepts within the standard; however it also considered the use and potential beneficial impact of implementation. This measure addresses the National Priority of Population Health and Care Coordination.

Candidate Consensus Standards Recommended for Time-Limited Endorsement[9]

OT3-027-10: Ventriculoperitoneal (VP) shunt malfunction rate in children (Children's Hospital Boston) *This candidate standard measures the 30-day VP shunt malfunction rate for hospitals that perform cerebrospinal ventriculoperitoneal shunt operations in children ages 1 month to 18 years. This measure is intended to be used at the provider level of measurement.*

The Committee agreed that this is an important outcome to measure because shunt malfunction occurs in 10 percent of patients.[10] The largest impact on shunt function is misplacement or infection control, and variation in malfunction rates ranges from 3 percent to 25 percent.[11] Shunt malfunction is a major problem in children's hospitals, with an estimated admission rate for shunt malfunction of 10,000 patients and an average cost per patient of $17,000 to $20,000. In 2003, more than 300 hospitals performed VP shunts. While the measure had limited testing data from a single institution, the Committee agreed the measure is important to measure and report as an outcome because it addresses a high-impact procedure for this specific population of pediatric patients and meets all other criteria. The Committee also questioned whether the time period required to gather data (three years) may be too lengthy and may affect the usability and feasibility of the measure. The developer noted that the measure has been stratified among different race and ethnicity groups and found that African Americans have a higher rate of malfunction compared to whites. This measure addresses the National Priority of Safety.

OT3-028-10: Standardized mortality ratio for neonates undergoing non-cardiac surgery (Children's Hospital Boston) *This candidate standard measures the ratio of observed to expected rates of in-hospital mortality following non-cardiac surgery among infants less than or equal to 30 days of age (neonates). This measure is intended to be used at the provider level of measurement.*

The Committee agreed that this provider-level candidate standard is important to measure and report as an outcome but noted the lack of variability across sites. Surgeries in this age group are typically related to congenital anomalies. The measure was developed using the KIDS 2000 database[12] and validated using the KIDS 2003 database. The Committee observed that the measure is based on the number of procedures rather than on the number of patients who undergo any of 63 procedures because some patients have multiple operations. The Committee asked for more information on the survival curve for these procedures beyond 30 days. The measure developer noted that its initial data is limited to one year from 15 institutions and that variability would be more likely using a longer timeframe with more sites. All of the included procedures require anesthesia and represent 85 percent of the procedures performed. The risk model demonstrates excellent performance characteristics[13]. The Committee also noted that the measure directly associates mortality with the surgery, which excludes the possibility that other comorbidities may contribute to mortality. In addition, the Committee discussed the use of the measure among different ethnic and racial groups to show the effects across populations. Overall, the Committee supported this measure and recommended future refinements to the measure. This measure addresses the National Priority of Safety.

OT3-029-10: Standardized adverse event ratio for children < 18 years of age undergoing cardiac catheterization (Children's Hospital Boston) *This candidate standard measures the ratio of observed to expected clinically important adverse events, risk-adjusted. This measure is intended to be used at the provider level of measurement.*

The Committee agreed that this provider-level measure is important and demonstrates high face validity. In addition, the Committee noted that catheterization is evolving from a primary diagnostic modality to a significant interventional procedure in which the potential for adverse events is greater. Approximately 100 institutions perform an average of 300 to 1,200 catheterizations per year for an overall total of 50,000 procedures nationwide. An initial review of the measure raised concerns about the specifications and feasibility of the measure. The Committee questioned why adults were included in the target population and suggested separating children from adults because the outcomes will vary based on the patient's age. The Committee discussed the need to clearly define adverse events. The measure developer addressed these concerns by revising the measure to only include persons 18 years or younger and by clarifying the definition of adverse events as well as of the settings and providers for which this measure is intended. This measure addresses the National Priority of Safety.

OT3-043-10: Pediatric Symptom Checklist (PSC) (Massachusetts General Hospital)
This candidate standard measures the overall psychosocial functioning in children from 4 to 16 years of age. This measure is intended to be used at the provider level of measurement.

The Committee agreed that this measure is important and mentioned the scarcity of psychosocial tests for young children, particularly those as young as 4 years old. This measure is intended for various levels of analysis including clinician, program, and population. The Committee raised concerns about the data used to link the PSC score to an improved outcome, the lack of clarity in the measure's specifications, and a possible need to further develop the measure for use with Spanish-speaking populations. However, the Committee also recognized that this measure has been used in numerous studies as a "pre-post" tool to evaluate children. In addition, efforts are underway to improve the comfort level of primary care physician's ability to diagnose and treat mild to moderate mental health problems in children. Further insight on evidence related to the use of the PSC as an outcome and clarifications on specifications were provided to the Committee. This measure addresses the National Priority of Safety.

OT3-046-10: Validated family-centered survey questionnaire for parents' and patients' experiences during inpatient pediatric hospital stay (Children's Hospital Boston) *This candidate standard assesses various aspects of care experiences during inpatient pediatric hospital stays. This measure is intended to be used at the provider level of measurement.*

This measure evaluates the parents' experiences with care during inpatient pediatric hospital stays by using a survey composed of 62 individual questions. The Committee voiced great enthusiasm for this measure and agreed that it is important to measure and report. The Committee noted the similarities between this survey and the Hospital Consumer Assessment of Healthcare Provider Surveys (HCAHPS), but it recognized that the HCAHPS population excludes children and therefore suggested that this survey be harmonized with the HCAHPS. The Committee raised concerns about the scientific acceptability of the measure, specifically, the number of questions and biases resulting from varying parental expectations and the fact that those who are more pleased with the experience may be more inclined to complete the survey than others. In addition, the Committee discussed the specific domains of the measure (e.g., experience with the nurse, care coordination, admission process) as well as the use of this measure, which has not been applied across institutions. The measure developer provided comparative reliability and validity data and additional information on the scoring of domains within the measure. The developer also explained that an external validation with various hospitals will be performed within the coming year. This addresses the National Priority of Patient and Family Engagement.

Candidate Consensus Standards Not Recommended for Endorsement

OT3-037-10: Children living with illness: the effects of condition on daily life (Child and Adolescent Health Measurement Initiative) *This candidate standard measures the extent to which the conditions of children with special healthcare needs result in limitations of their daily activities despite the healthcare services they receive. This measure is intended to be used at the population level of measurement.*

The Committee agreed this measure showed a specific limitation that is important to measure and report but raised several concerns about its scientific acceptability. Committee members discussed the issue of confounding relative to the individual patients captured in the numerator and recommended that risk-adjustment be incorporated into the testing. It was also suggested that the measure be further developed to include stratification data based on diagnoses to create an outcome measure that is more actionable. The Committee acknowledged that this candidate standard is derived from a national survey and is therefore feasible, especially at the population level. However, the Committee did not believe that this candidate standard as constructed is ready to be included in the existing NQF portfolio of measures.

OT3-040-10: Children who live in neighborhoods with certain essential amenities (Child and Adolescent Health Measurement Initiative) *This candidate standard assesses whether or not children live in neighborhoods that contain elements that are known to have an impact on health status and functioning. This measure is intended to be used at the population level of measurement.*

The Committee agreed that this measure is more of a structural measure than an outcome measure and is therefore out of scope for this project. The measure focuses on the utilization of specific infrastructure (sidewalk, bike paths, recreation facility, libraries, and parks). These elements are defined by the measure developer as "essential amenities" that must be available to qualify for having met the measure requirements. The Committee agreed that this measure was more focused on the availability of these amenities rather than any observed outcome that would result from their utility.

OT3-048-10: Plan of care for inadequate hemodialysis (American Medical Association) *This candidate standard measures the percentage of patients ages 17 and under who have a diagnosis of end-stage renal disease (ESRD) and receive hemodialysis with a documented plan of care for inadequate hemodialysis. This measure is intended to be used at the provider level of measurement.*

The Committee noted that this candidate standard is similar to an NQF-endorsed time-limited measure for adults that is maintained by the same developer but is reported in a different KT/V value. Regarding the specifications, the Committee believed that the number of patients who did not have a documented plan of care would be very small, which in turn would offer very limited results. There were concerns with the inclusion of a plan of care option in the measure. If plan of care was to be included in the measure, the Committee recommended that the definition and elements of a "documented plan" should be more explicit. The Committee suggested to the measure developer to stratify the reporting results of the measure by age and include elements of the plan of care. In addition, the Committee believed that the definition of a "documented plan" should be more explicit and should account for adequacy of the plan of care. The Committee suggested that the measure developer stratify the results by age and include elements of the plan of care.

OT3-049-10: Primary caries prevention intervention as part of well/ill child care as offered by primary care medical providers (University of Minnesota) *This candidate standard measures the number of states currently reimbursing for the primary caries prevention intervention as identified by a specific code to reflect application of fluoride varnish to the teeth of high-risk children. This measure is intended to be used at the population level of measurement.*

The Committee agreed that this measure is important and fills a gap in healthcare for children but raised several concerns about the precision of the specifications, which indicate several options for the numerator and denominator. The Committee noted that "dental home" is not clearly defined. The Committee observed that the measure included two measures—the number of varnish applications over the number of EPSDT exams[14] and the number of children with varnish over the number of children with exams. The Committee mentioned that in the past there have been issues with the content associated with an EPSDT visit. The Committee agreed that this is a process measure but acknowledged that dental care is a very important area to measure and strongly recommended that the measure developer submit a measure with precise specifications in the future.

OT3-054-10: Urinary tract infection admission rate (Agency for Healthcare Research and Quality) *This measure provides the admission rate for urinary tract infection in children ages 3 months to 17 years of age, per 100,000 population. This measure is intended to be used at the population level of measurement.*

In general, the Committee members believed that this measure should be more explicitly linked to patient outcomes and questioned the preventability of urinary tract infections (UTIs), especially for very young children. The lack of actionable information that would improve quality was also mentioned. The Committee noted concerns with the potential misuse of the measure at the facility or provider levels of analysis as well as the potential unintended consequence of avoiding appropriate admissions. Concerns were also raised about socioeconomic status and social determinants of health influence hospitalization. The Committee suggested that the measure be stratified by age and gender to address the various causes of UTIs at different ages.

OT3-056-10: Diabetes, short-term complication rate (pediatric) (Agency for Healthcare Research and Quality) *This measure provides the admission rate for diabetes short-term complications in children ages 6 to 17 years, per 100,000 population. This measure is intended to be used at the population level of measurement.*

The majority of the Committee members agreed that this measure should not be recommended for endorsement, particularly because the measure does not differentiate primary hospitalizations when the diagnosis of diabetes is first made. Committee members noted differences between patients who have Type I and Type II diabetes; Type I diabetes is often initially diagnosed when a child is hospitalized for the first time for a short-term complication of the condition. The measure specifications do not exclude undiagnosed diabetes cases, and coding for first-time admissions for diabetes is not available. The Committee recommended that the possibilities for excluding undiagnosed diabetes admissions from the measure specifications be explored.

Candidate Consensus Standards Deemed Out of Scope

The scope of this phase of the Patient Outcomes project was to enlarge NQF's portfolio of outcome measures for child health. In the Call for Measures the Steering Committee established broad concepts for the measures that would be evaluated for endorsement recommendation. All submitted measures were first evaluated to determine whether they addressed the scope of the project and were deemed to be either in or out of scope. Measures that were deemed to be process measures were considered to be out of scope. Below is a list of measures deemed to be out of scope for this project:

OT3-033-10: National Survey of Children's Health 2007—quality measures (Child and Adolescent Health Measurement Initiative)

OT3-034-10: National Survey of Children with Special Health Care Needs 2005/2006—quality measures (Child and Adolescent Measurement Initiative)

OT3-035-10: Children who take medication for ADHD, emotional, or behavioral issues (Child and Adolescent Health Measurement Initiative)

OT3-042-10: Children who receive the mental health care they need (Child and Adolescent Health Measurement Initiative)

OT3-050-10: Children who receive standardized developmental and behavioral screening (Child and Adolescent Health Measurement Initiative)

OT3-051-10: Pediatric pain assessment, intervention, and reassessment (AIR) cycle—all pediatric patients (American Nurses Association)

OT3-052-10: Pediatric pain assessment, intervention, and reassessment (AIR) cycle—pediatric patients in pain (American Nurses Association)

OT3-053-10: Pediatric pain assessment frequency per 24 hours (American Nurses Association)

Additional Recommendations

During its deliberations, the Steering Committee identified several overarching recommendations regarding the measurement of outcomes for child health:

1. **Parent preference regarding treatment and medications administered.**
   The Committee agreed that this parameter should be incorporated into measuring outcomes for children due to its importance in decision-making.

2. **More detailed measures at the plan and provider level to answer the "why" questions that arise within population-level measurement.**
   The Committee recommends that measure developers consider measures that will inform the identification of the inputs that contribute to population-level measure results.

3. **Measures around referral management.**
   The Committee recommends that measure developers include the communication loop, including timely reports from consultants, referrals, and coordinated child healthcare.

4. **More attention to disparities.**
   The Committee recommends that measure developers address disparities in measure specifications. According to NQF measure evaluation criteria, factors such as race, ethnicity, and socioeconomic status should not be included in risk models; however, the data should be collected to allow for stratification. Particularly with regard to children, factors such as socioeconomic status greatly influence the care provided and patient outcomes.

NOTES

1. Medicare's home health quality initiative has been based almost entirely on outcome measures. Centers for Medicare and Medicaid Services (CMS), *Home Health Quality Iniative*, Baltimore, MD: CMS; 2010. Available at www.cms.hhs.gov/HomeHealthQualityInits/16_HHQIOASISOBQI.asp. Last accessed July 2010.
2. Donabedian A, The quality of care. How can it be assessed? *JAMA*, 1988;260(12):1743-1748.
3. National Quality Forum (NQF), *National Priorities Partnership*, Washington, DC: NQF. Available at www.nationalprioritiespartnership.org. Last accessed July 2010.
4. NQF, *Patient Outcomes Measures: Child Health and Mental Health (Phases III) webpage*. Available at www.qualityforum.org/projects/Patient_Outcome_Measures_Phase3.aspx. Last accessed July 2010.
5. NQF, *Measure Evaluation Criteria*, Washington, DC: NQF; 2008. Available at www.qualityforum.org/docs/measure_evaluation_criteria.aspx. Last accessed April 2010.
6. Harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., influenza immunization of patients in hospitals, nursing homes, etc.), 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 various measures and the evidence for the specific measure focus, as well as differences in data sources.
7. Albertson GA, Lin CT, Kutner J, Schilling LM, et al., Recognition of patient referral desires in an academic managed care plan: frequency, determinants, and outcomes, *J Gen Intern Med*, 2000;15:242-247.

8. Kravitz RL, Callahan EJ, Paterniti D, et al., Prevalence and sources of patients' unmet expectations for care, *Ann Intern Med*, 1996;125:730-737.
9. Information regarding NQF's time-limited endorsement policy and the 2010 addendum is available at www.qualityforum.org/Measuring_Performance/Consensus_Devlopment_Process's_Principle/Consensus_Staandards_Approval_Committee_Decision.aspx.
10. Berry JG, Hall MA, Sharma V, et al., A multi-institutional, 5-year analysis of initial and multiple ventricular shunt revisions in children, *Neurosurgery*, 2008;62(2):445-453; discussion 453-454.
11. Prusseit J, Simon M, von der Brelie C, et al., Epidemiology, prevention and management of ventriculoperitoneal shunt infections in children, *Pediatr Neurosurg*, 2009;45(5):325-336.
12. Agency for Healthcare Research and Quality (AHRQ), *Introduction to the HCUP KIDS' Inpatient Database (KID) 2006. Health Cost and Utilization Project (HCUP)*, Rockville, MD: AHRQ; 2008. Available at www.hcup-us.ahrq.gov/reports.jsp. Last accessed May 2010.
13. Son JK, Lillehei CW, Gauvreau K, et al., A risk adjustment method for newborns undergoing noncardiac surgery, *Ann Surg*, 2010;251(4):754-758.
14. Early Periodic Screening, Diagnosis, and Treatment (EPSDT) Programs, as defined by the Health Resources and Services Administration, are a child health component of Medicaid required in every state and designed to improve the health of low-income children by financing appropriate and necessary pediatric services.

Appendix A: Specifications of the National Voluntary Consensus Standards for Patient Outcomes: Phase III Child Health

The following table presents the detailed specifications for the National Quality Forum (NQF)-endorsed® *National Voluntary Consensus Standards for Patient Outcomes: Phase III Child Health*. All information presented has been derived directly from measure sources/developers without modification or alteration (except when the measure developer agreed to such modification during the NQF Consensus Development Process) and is current as of June 18, 2010. All NQF-endorsed voluntary consensus standards are open source, meaning they are fully accessible and disclosed. Measures were developed by the Agency for Healthcare Research and Quality, California Maternal Quality Care Collaborative, Child and Adolescent Health Measurement Initiative, Children's Hospital Boston, and Massachusetts General Hospital.

***Note: Denotes measures recommended for time-limited endorsement.**

Measure Numbers	**Measure Title**	**Measure Steward**	**Measure Description**	**Numerator**	**Denominator**	**Exclusions Adjustments**	**Data Source**	**Level of Analysis**
Measure ID #: OT3-027-10*	Ventriculoperitoneal (VP) shunt malfunction rate in children	Children's Hospital Boston	This measure is a 30-day malfunction rate for hospitals that perform cerebrospinal ventriculoperitoneal shunt operations in children age 1 month to 18 years.	The number of initial cerebrospinal VP shunt placement procedures performed on children between the ages of 1 month and 18 years of age that malfunction and result in shunt revision or replacement within 30 days of initial placement. **Details** Number of cases of initial VP shunt placement ICD-9 procedure code 02.34 (Ventricular shunt to abdominal cavity and organs) among patients between the ages of 1 month and 18 years at the time of placement resulting in malfunction characterized by a shunt revision or replacement within 30 days of initial procedure. Shunt malfunction is identified by ICD-9 procedure codes 02.42 (Replacement of ventricular catheter or revision of ventriculoperitoneal shunt at ventricular site), 54.95 (Incision of Peritoneum— revision of VP shunt at peritoneal site), or the combination of codes 02.43 (Removal of	The total number of initial cerebrospinal VP shunt procedures performed on children between the ages of 1 month and 18 years. **Details** The total number of initial VP shunt placements (ICD-9 procedure code 02.34) among patients between the ages of 1 month and 18 years at the time of procedure.	Children < 30 days of age at time of procedure and children with a diagnosis of spina bifida (ICD-9 diagnosis code beginning with 741). **Details** Published data has shown that children under a month of age or with a diagnosis of spina bifida are at higher risk for sustaining a cerebrospinal VP shunt malfunction compared with older children and children without spina bifida. Excluding children with these characteristics helps standardize the case-mix of children requiring cerebrospinal fluid diversion with a VP shunt across hospitals. Citations: Shah SS, Hall M, Slonim AD, Hornig GW, Berry JG, Sharma V. A Multicenter Study of Factors Influencing Cerebrospinal Fluid Shunt Survival in Infants and Children. Neurosurgery 2008; 62(5). Berry JG, Hall M, Sharma V, Goumnerova L, Slonim AD, Shah SS. A Multi-Institutional, 5-year Analysis of Initial and Multiple Ventricular Shunt Revisions in Children. Neurosurgery 2008; 62(2). **Adjustments** No risk adjustment necessary N/A	Management data, Electronic administrative data/claims	Can be measured at all levels

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				ventricular shunt) and 02.34 (Ventricular shunt to abdominal cavity and organs) during the same admission.				
Measure ID #: OT3-028-10*	Standardized mortality ratio for neonates undergoing non-cardiac surgery	Children's Hospital Boston	Ratio of observed to expected rate of in-hospital mortality following non-cardiac surgery among infants ≤30 days of age, risk-adjusted.	Cases of non-cardiac surgery among infants ≤30 days of age resulting in in-hospital death. **Details** Number of cases of non-cardiac surgery among infants ≤ 30 days of age undergoing one of 63 eligible procedures where patient disposition is death prior to hospital discharge. Eligible Surgical Procedures: ICD-9-CM procedure codes are listed with each surgical procedure. 02.12 Other repair of cerebral meninges 02.2 Ventriculostomy 02.34 Ventricular shunt to abdominal cavity and organs 02.42 Replacement of ventricular shunt 03.51 Repair of spinal meningocele 03.52 Repair of spinal myelomeninigocele 18.29 Excision or destruction of other lesion of external ear (not preauricular sinus) 25.91 Lingual frenotomy 25.92 Lingual frenectomy 27.54 Repair of cleft lip 31.73 Closure of other fistula of trachea (tracheoesophageal fistulectomy) 33.1 Incision of lung 33.93 Puncture of lung 34.09 Other incision of pleura 43.11 Percutaneous	Total cases of non-cardiac surgery among infants ≤ 30 days of age. **Details** Number of cases of non-cardiac surgery among infants ≤30 days of age undergoing one of 63 eligible procedures. See below for eligible procedures. Eligible Surgical Procedures: ICD-9-CM procedure codes are listed with each surgical procedure. 02.12 Other repair of cerebral meninges 02.2 Ventriculostomy 02.34 Ventricular shunt to abdominal cavity and organs 02.42 Replacement of ventricular shunt 03.51 Repair of spinal meningocele 03.52 Repair of spinal myelomeninigocele 18.29 Excision or destruction of other lesion of external ear (not preauricular sinus) 25.91 Lingual frenotomy 25.92 Lingual frenectomy 27.54 Repair of cleft lip 31.73 Closure of other fistula of trachea (tracheoesophageal fistulectomy) 33.1 Incision of lung 33.93 Puncture of lung 34.09 Other incision of pleura 43.11 Percutaneous endoscopic gastrostomy 43.19 Other gastrostomy 43.3 Pyloromyotomy 44.29 Other pyloroplasty (revision of pylorus)	Patients > 30 days of age at time of surgery; those undergoing cardiac surgery or having a major structural cardiac defect (excluding atrial and ventricular septal defects and patent ductus arteriosus); premature infants; neonates undergoing procedures which were endoscopic or closed; catheterizations; circumcisions; and sutures of superficial lacerations. **Details** Neonates undergoing cardiac surgery are excluded because a risk adjustment method for congenital heart surgery already exists. Premature infants are defined as < 37 weeks gestation. Other excluded procedures are: endoscopy (through natural anatomic openings, through previously made stomas, endoscopic procedures, endoscopic biopsies); closed (percutaneous) biopsies; closed reductions; sutures of superficial lacerations; catheterizations; dilations; injections; aspirations; radiologic procedures; dental extractions; laser/cryo/photocoagulation therapies; (circumcisions); incidental procedures. **Adjustments** case-mix adjustment Variables are procedure risk category, any serious respiratory condition, and necrotizing enterocolitis. Details are provided in attachment Item 2a.15.	Management data, Lab data, Electronic administrative data/claims	Can be measured at all levels

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				endoscopic gastrostomy 43.19 Other gastrostomy 43.3 Pyloromyotomy 44.29 Other pyloroplasty (revision of pylorus) 44.66 Other procedures for creation of esophagogastric sphincteric competence 45.02 Other incision of small intestine (not duodenum) 45.26 Open biopsy of large intestine 45.62 Other partial resection of small intestine (duodenectomy, ileectomy, jejunectomy) 45.73 Right hemicolectomy (ileocolectomy, right radical colectomy) 45.76 Sigmoidectomy 45.79 Other partial excision of large intestine (enterocolectomy NEC) 45.91 Small-to-small intestinal anastomosis 46.01 Exteriorization of small intestine (loop ileostomy) 46.03 Exteriorization of large intestine 46.10 Colostomy, not otherwise specified 46.11 Temporary colostomy 46.13 Other permanent colostomy 46.20 Ileostomy, not otherwise specified 46.21 Temporary ileostomy 46.39 Other enterostomy (duodenostomy, feeding enterostomy) 46.51 Closure of stoma of small intestine 46.79 Other repair of intestine (duodenoplasty) 46.81 Intra-abdominal	44.66 Other procedures for creation of esophagogastric sphincteric competence 45.02 Other incision of small intestine (not duodenum) 45.26 Open biopsy of large intestine 45.62 Other partial resection of small intestine (duodenectomy, ileectomy, jejunectomy) 45.73 Right hemicolectomy (ileocolectomy, right radical colectomy) 45.76 Sigmoidectomy 45.79 Other partial excision of large intestine (enterocolectomy NEC) 45.91 Small-to-small intestinal anastomosis 46.01 Exteriorization of small intestine (loop ileostomy) 46.03 Exteriorization of large intestine 46.10 Colostomy, not otherwise specified 46.11 Temporary colostomy 46.13 Other permanent colostomy 46.20 Ileostomy, not otherwise specified 46.21 Temporary ileostomy 46.39 Other enterostomy (duodenostomy, feeding enterostomy) 46.51 Closure of stoma of small intestine 46.79 Other repair of intestine (duodenoplasty) 46.81 Intra-abdominal manipulation of small intestine 47.09 Other appendectomy (not laparoscopic) 48.25 Open biopsy of rectum 48.41 Soave submucosal resection of rectum 48.49 Other pull-through resection of rectum 49.79 Other repair of anal			

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				manipulation of small intestine 47.09 Other appendectomy (not laparoscopic) 48.25 Open biopsy of rectum 48.41 Soave submucosal resection of rectum 48.49 Other pull-through resection of rectum 49.79 Other repair of anal sphincter (repair of old obstetric laceration of anus) 53.02 Repair of indirect inguinal hernia 53.10 Bilateral repair of inguinal hernia, not otherwise specified 53.12 Bilateral repair of indirect inguinal hernia 53.49 Other umbilical herniorrhaphy (not with prosthesis) 53.7 Repair of diaphragmatic hernia, abdominal approach 53.80 Repair of diaphragmatic hernia with thoracic approach, not otherwise specified 54.11 Exploratory laparotomy 54.12 Reopening of recent laparotomy site 54.21 Laparoscopy (peritoneoscopy) 54.3 Excision or destruction of lesion or tissue of abdominal wall or umbilicus (debridement of abdominal wall, omphalectomy) 54.59 Other lysis of peritoneal adhesions (not laparoscopic) 54.71 Repair of gastroschisis 54.72 Other repair of abdominal wall 54.95 Incision of peritoneum 62.3 Unilateral	sphincter (repair of old obstetric laceration of anus) 53.02 Repair of indirect inguinal hernia 53.10 Bilateral repair of inguinal hernia, not otherwise specified 53.12 Bilateral repair of indirect inguinal hernia 53.49 Other umbilical herniorrhaphy (not with prosthesis) 53.7 Repair of diaphragmatic hernia, abdominal approach 53.80 Repair of diaphragmatic hernia with thoracic approach, not otherwise specified 54.11 Exploratory laparotomy 54.12 Reopening of recent laparotomy site 54.21 Laparoscopy (peritoneoscopy) 54.3 Excision or destruction of lesion or tissue of abdominal wall or umbilicus (debridement of abdominal wall, omphalectomy) 54.59 Other lysis of peritoneal adhesions (not laparoscopic) 54.71 Repair of gastroschisis 54.72 Other repair of abdominal wall 54.95 Incision of peritoneum 62.3 Unilateral orchiectomy 62.5 Orchiopexy 64.49 Other repair of penis 64.91 Dorsal or lateral slit of prepuce 64.92 Incision of penis 64.93 Division of penile adhesions 84.03 Amputation through hand			

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				orchiectomy 62.5 Orchiopexy 64.49 Other repair of penis 64.91 Dorsal or lateral slit of prepuce 64.92 Incision of penis 64.93 Division of penile adhesions 84.03 Amputation through hand				
Measure ID#: OT3-029-10*	Standardized adverse event ratio for children <18 years of age undergoing cardiac catheterization.	Children's Hospital Boston	Ratio of observed to expected clinically important adverse events, risk-adjusted	Number of diagnostic and interventional cardiac catheterization cases for children < 18 years of age resulting in a clinically important adverse event, performed by a provider performing at least 50 cases per year in pediatric patients < 18 years of age. **Details** Clinically important events are defined as follows: Moderate adverse event (transient change in condition may be life-threatening if not treated, condition returns to baseline, required monitoring, required intervention such as reversal agent, additional medication, transfer to the intensive care unit for monitoring, or moderate transcatheter intervention to correct condition); major adverse event (change in condition, life-threatening if not treated, change in condition may be permanent, may have required an intensive care unit admission or emergent re-admit to hospital, may have required invasive monitoring, required	Number of diagnostic and interventional cardiac catheterization cases for children < 18 years of age, performed by a provider performing at least 50 cases per year in pediatric patients < 18 years of age. **Details** Types of cardiac catheterization procedures eligible for this measure are listed in Numerator Details	Primary electrophysiology cases, ablation cases, pericardiocentesis only, thoracentesis only. **Details** Primary electrophysiology cases, ablation cases, pericardiocentesis only, thoracentesis only. **Adjustments** case-mix adjustment Variables are procedure type risk group and indicator of hemodynamic vulnerability.	Lab data, Management data, Organizational policies and procedures	Can be measured at all levels

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				interventions such as electrical cardioversion or unanticipated intubation or required major invasive procedures or transcatheter interventions to correct condition); or catastrophic adverse event (any death or emergent surgery or heart lung bypass support to prevent death with failure to wean from bypass support). Types of cardiac catheterization procedures eligible for this measure are listed below: Any diagnostic catheterization within 72 hours of surgery Any interventional catheterization within 72 hours of surgery Atrial septostomy / BAS Atrial septostomy / dilation and stent Atrial septostomy / static balloon dilation Balloon angioplasty / aorta Balloon angioplasty / lobar segment LPA RPA Balloon angioplasty / native RVOT Balloon angioplasty / proximal LPA or RPA Balloon angioplasty / RV to PA conduit Balloon angioplasty / RVOT s/p surgery (no conduit) Balloon angioplasty / systemic artery (not aorta) Balloon angioplasty / systemic shunt Balloon angioplasty / systemic vein Balloon angioplasty or				

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				stent / pulmonary vein(s) Coil / coronary fistula Coil occlusion / device / systemic arterial collaterals Coil occlusion / LSVC Coil occlusion / PDA Coil occlusion / systemic shunt Coil occlusion / veno-veno collaterals Device closure / ASD Device closure / baffle leak Device closure / fenestration Device closure / PDA Device closure / perivalvar leak Device closure / PFO Device closure / venous collateral Device closure / VSD Diagnostic catheterization with EPS Hemodynamic catheterization Interventional techniques / atherectomy catheter Interventional techniques / atretic valve perforation Interventional techniques/ recanulization of jailed vessel in stent Interventional techniques / recanulization of occluded peripheral vessels Interventional techniques / snare foreign body Interventional techniques / trans-septal puncture Invasive procedure / central line placement Invasive procedure / elective chest tube pericardiocentesis Invasive procedure / pericardiocentesis				

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				Other intended hemodynamic alteration / oxygen-nitric trial or ionotropes Other procedures: bronchoscopy, drains, echo, TEE RV biopsy diagnostic RV biopsy elective post transplant Stent placement / aorta Stent placement / intracardiac / atria Stent placement / intracardiac / ventricular Stent placement / lobar segment LPA or RPA Stent placement / native RVOT Stent placement / proximal LPA or RPA Stent placement / RV to PA conduit Stent placement / RVOT s/p surgery (no conduit) Stent placement / systemic artery (not aorta) Stent placement / systemic shunt Stent placement / systemic vein Stent redilation / aorta Stent redilation / intracardiac / atria Stent redilation / intracardiac / ventricular Stent redilation / lobar segment LPA or RPA Stent redilation / proximal LPA or RPA Stent redilation / pulmonary vein Stent redilation / RV to PA conduit Stent redilation / systemic artery not aorta Stent redilation / systemic vein Ultrasound / IVUS Valvuloplasty / aorta Valvuloplasty / mitral Valvuloplasty / pulmonary Valvuloplasty / tricuspid				

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				ASD = atrial septal defect, BAS = balloon atrial septostomy, EPS = electrophysiology study, IVUS = intravascular ultrasound, LPA = left pulmonary artery, LSVC = left superior vena cava, PA = pulmonary artery, PDA = patent ductus arteriosus, PFO = patent foramen ovale, RPA = right pulmonary artery, RV = right ventricle, RVOT = right ventricular outflow tract, TEE = transesophageal echocardiogram, VSD = ventricular septal defect				
Measure ID #: OT3-031-10	Healthy term newborn	California Maternal Quality Care Collaborative	Percent of term singleton live births (excluding those with diagnoses originating in the fetal period) who DO NOT have significant complications during birth or the nursery care.	The absence of conditions or procedures reflecting morbidity that happened during birth and nursery care to an otherwise normal infant. The morbidities may or may not have clearly been the result of medical care. **Details** Birth Trauma/Injuries Fetus or newborn affected by: Other complications of labor and delivery 763.0,1,2,3,4,5 Subdural/cerebral hemorrhage 767.0 (In NQF Birth Injury Measure) Subgaleal hemorrhage 767.11 (In NQF Birth Injury Measure) Clavicle fracture 767.2 Other skeletal injuries 767.3 (In NQF Birth Injury Measure) Spine/spinal cord injuries 767.4 (In NQF Birth Injury Measure)	The denominator is composed of singleton, term (≥37 weeks), inborn, live births in their birth admission. The denominator further has eliminated fetal conditions likely to be present before labor. Maternal and obstetrical conditions (e.g. hypertension, prior cesarean, malpresentation) are not excluded unless evidence of fetal effect prior to labor (e.g., IUGR/SGA). **Details** Denominator criteria uses ICD9 codes to identify singleton inborns (code of V30.00 or V30.01), or alternatively term (765.29 = 37+ weeks). Date of admission needs to equal the date of birth.	Denominator exclusions: multiple gestations, preterm, congenital anomalies or fetuses affected by selected maternal conditions. **Details** Exclusions ICD9 Codes Comments Multiple gestation 761.5 Preterm 765.0,1 Congenital anomalies 740.0,1,2 (Anencephalus and similar anomalies) 741.0,9 (Spina bifida) 742.0,1,2,3,4,5,8,9 (Other congenital anomalies of nervous system) 743.0,1,2,3,4,5,6,8,9 (Congenital anomalies of eye) 745.0,1,2,3,4,5,6,7,8,9 (Congenital anomalies of the cardiac septum) 746.0,1,2,3,4,5,6,7,8,9 (Other congenital anomalies of heart)	Electronic administrative data/claims	Clinicians: Group, Facility/Agency, Multi-site/corporate chain, Can be measured at all levels

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				Facial nerve injury 767.5 (In NQF Birth Injury Measure) Brachial plexus injury 767.6 Other cranial/peripheral nerves 767.7 (In NQF Birth Injury Measure) Other specified birth trauma 767.8 (In NQF Birth Injury Measure) Hypoxia/Asphyxia Severe birth asphyxia with neurologic involvement 768.5 Mild or moderate birth asphyxia +/- neurologic involvement 768.6 HIE 768.7 Unspecified birth asphyxia 768.9 Congenital or infantile CP 343 Shock, Resuscitation and Complications DIC 776.2 NEC 777.5 Shock, hypotension 785.5 Renal failure (ATN) 584.5 (Adult code but no applicable neonatal code) Procedures: Arterial catheterization 38.91 Umbilical venous catheterization 38.92 TPN 99.15 Gastrostomy 43.1 Gavage feeding 96.35 Cardiopulmonary resuscitation 99.60		747.0,1,2,3,4 (Other congenital anomalies of circulatory system—but not single umbilical artery) 748.0,1,2,3,4,5,6,8,9 (Congenital anomalies of the respiratory system) 749.0,1,2 (Cleft palate and cleft lip) 750.3,4,5,6,7,8,9 (Congenital anomalies of the upper alimentary tract) 751.0,1,2,3,4,5,6,7,8,9 (Other congenital anomalies of the digestive system) 753.0,1,2,3,5,6,8,9 (Congenital anomalies of the urinary system) 754.0,1,2,3,4,5,6,7,8 (Certain congenital musculoskeletal deformities) 757.1 (Ichthyosis congenital) 758.0,1,2,3,5,6,8,9 (Chromosomal anomalies–but not balanced translocations and Klinefelters syndrome) 759.5 (Tuberous Sclerosis) 759.6 (Other hamartoses) 759.7 (Multiple congenital anomalies) 759.81,2,3,9 (Other specified anomalies) 255.2 (Adrenogenital disorders) Fetus or newborn affected by placenta previa 762.0 Fetus or newborn affected by abruptions		

Measure Numbers	**Measure Title**	**Measure Steward**	**Measure Description**	**Numerator**	**Denominator**	**Exclusions Adjustments**	**Data Source**	**Level of Analysis**
				Respiratory Pulmonary Hypertension 747.83 RDS 769 Meconium aspiration w/respiratory symptoms 770.12 Clear AF aspiration w/respiratory symptoms 770.14 Pneumothorax 770.2 Pulmonary hemorrhage 770.3 Primary and other atelectasis 770.4,5 TTN 770.6 Other respiratory problems after birth 770.81,2,3,4,6,7,8,9 (Apnea, cyanosis, respiratory arrest or failure, hypoxemia, aspiration of stomach contents) Procedures: Birth Trauma/Injuries Fetus or newborn affected by: Other complications of labor and delivery 763.0,1,2,3,4,5 Subdural/cerebral hemorrhage 767.0 (In NQF Birth Injury Measure) Subgaleal hemorrhage 767.11 (In NQF Birth Injury Measure) Clavicle fracture 767.2 Other skeletal injuries 767.3 (In NQF Birth Injury Measure) Spine/spinal cord injuries 767.4 (In NQF Birth Injury Measure) Facial nerve injury 767.5 (In NQF Birth Injury Measure) Brachial plexus injury		762.1 Fetus or newborn affected by umbilical cord complications 762.6 (Umbilical thromboses, Vaso previa) Impaired fetal growth, “light for dates” 764.0,1,9 (IUGR, SGA) Hemolytic disease due to Rh or other isoimmunization 773.0,2 Hydrops due to isoimmunization 773.3 Idiopathic hydrops 778.0 Drug withdrawal 779.5 Laryngeal stenosis 478.74 **Adjustments** No risk adjustment necessary. N/A		

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				767.6 Other cranial/peripheral nerves 767.7 (In NQF Birth Injury Measure) Other specified birth trauma 767.8 (In NQF Birth Injury Measure) Hypoxia/Asphyxia Severe birth asphyxia with neurologic involvement 768.5 Mild or moderate birth asphyxia +/- neurologic involvement 768.6 HIE 768.7 Unspecified birth asphyxia 768.9 Congenital or infantile CP 343 Shock, Resuscitation and Complications DIC 776.2 NEC 777.5 Shock, hypotension 785.5 Renal failure (ATN) 584.5 (Adult code but no applicable neonatal code) Procedures: Arterial catheterization 38.91 Umbilical venous catheterization 38.92 TPN 99.15 Gastrostomy 43.1 Gavage feeding 96.35 Cardiopulmonary resuscitation 99.60 Respiratory Pulmonary Hypertension 747.83				

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				RDS 769 Meconium aspiration w/respiratory symptoms 770.12 Clear AF aspiration w/respiratory symptoms 770.14 Pneumothorax 770.2 Pulmonary hemorrhage 770.3 Primary and other atelectasis 770.4,5 TTN 770.6 Other respiratory problems after birth 770.81,2,3,4,6,7,8,9 (Apnea, cyanosis, respiratory arrest or failure, hypoxemia, aspiration of stomach contents) Procedures: Non-invasive mechanical ventilation without (delivery through) endotracheal tube or tracheostomy 93.90 (Bi-level airway pressure, BiPAP , CPAP, Mechanical ventilation NOS, Non-invasive positive pressure (NIPPV), Non-invasive PPV, NPPV, That delivered by non-invasive interface: face mask, nasal mask, nasal pillow, oral mouthpiece, oronasal mask) Other respiratory therapy 93.91,3,4,5,6,8,9 (Other non-invasive ventilation and oxygen therapy) Mechanical ventilation delivered through endotracheal tube or tracheostomy (invasive interface) 96.70,1,2 (Includes: BiPAP, CPAP, Endotracheal respiratory assistance, Invasive				

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				positive pressure ventilation [IPPV], Mechanical ventilation through invasive interface. 4th digit is for duration) Inhaled nitric oxide 00.12 Chest tube 34.04 Infection Congenital pneumonia 770.0 Septicemia of newborn 771.81 Bacteremia of newborn 771.83 Severe sepsis 995.92 Neurologic Complications Intraventricular hemorrhage 772.10,1,2,3,4 (5th digits 1-4 refer to grade of IVH, 0 = not known) Subarachnoid hemorrhage 772.2 Seizures 779.0 345.3 (Adult code also given, used in some nurseries) Other/unspecified cerebral irritability 779.1 Coma and cerebral depression 779.2 Periventricular leukomalacia 779.7 Cardiac arrest newborn 779.85 427.5 (Adult code also given, used in some nurseries) Encephalopathy 348.3 (Adult code, used in some nurseries) Cerebral edema				

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				348.5 (Adult code, used in some nurseries) Procedures: Computed tomography of head 87.03 Other tomography of head 87.04 MRI brain, brainstem 88.91 EEG 89.14 Disposition/LOS Neonatal death Disposition On the discharge diagnosis record Neonatal transfer out Disposition On the discharge diagnosis record LOS > 5d Discharge date – birth date LOS is assessed on a sub-population that has none of the above complications or procedures. In this set of “no inclusions in the numerator and LOS>5 days”, further exclude the codes below: 773.1 Hemolytic disease due to ABO isoimmunization 99.83 Phototherapy of the newborn V60.0,1,2,3,4,6,8,9 Housing, household and economic circumstances V61.05 Family disruption due to child in welfare custody V61.06 Family disruption due to child in foster care or in the care of non-parental family member				
Measure ID #: OT3-032-10	Number of school days children miss due to illness	Child and Adolescent Health Measurement	Measures the quantitative number of days of school missed due to	Number of school days missed during past 12 months due to illness or injury.	Children and adolescents age 6-17 years who have been enrolled in school (public or private) at any	Children are excluded from denominator if • child does not fall in target population age range (6-17	Survey: Patient 2007 National Survey of Children’s Health	Population: national, Population: regional/network, Population: states

Measure Numbers	**Measure Title**	**Measure Steward**	**Measure Description**	**Numerator**	**Denominator**	**Exclusions Adjustments**	**Data Source**	**Level of Analysis**
		Initiative	illness or condition among children and adolescents age 6-17 years.	**Details** Answer to number of days missed during past 12 months is open-ended. Respondent may provide any number of days.	time during the past 12 months. **Details** What kind of school does child currently attend? (Public, private, home school, none). If none, ask if child has attended school at all during the past 12 months?	years) • child is currently home schooled and parent indicated that therefore the question did not apply • child has not attended school in the past 12 months. Children are excluded from denominator if • child does not fall in target population age range (6-17 years). If child is less than six years old, skip questions • child is currently home schooled and parent indicated that question did not apply (if parent indicated that child is homeschooled and then provided an answer to number of missed days—including 0 missed days—then they are included in the denominator) • child has not attended school in the past 12 months **Adjustments** No risk adjustment necessary.	ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/slaits/nsch07/1a_Survey_Instrument_English/NSCH_Questionnaire_052109.pdf ; http://www.cdc.gov/nchs/data/slaits/NSCSHCNIIEnglishQuest.pdf	
Measure ID#: OT3-036-10	Children who had problems obtaining referrals when needed	Child and Adolescent Health Measurement Initiative	The measure aims to ascertain the perceived difficulty in obtaining referrals for children when needed for optimum health.	Children who need referrals and had a problem obtaining them (big or small problem) **Details** The numerator describes the number of children who needed referrals (K5Q10=YES) and had a problem obtaining them (K5Q11=BIG PROBLEM or SMALL PROBLEM)	Children age 0-17 years old who needed referrals during the past 12 months. **Details** Children 0-17 years old who needed referrals during the past 12 months (K5Q10=YES)	Excluded from denominator if child does not fall in target population age range of 0-17 years and if child did not need a referral to any doctor or service. **Details** Excluded from denominator if child does not fall in target population age range of 0-17 years, and if child did NOT need a referrals to see any doctors or receive any services during the past 12 months (if K5Q10=NO). **Adjustments** No risk adjustment necessary.	Survey: Patient 2007 National Survey of Children's Health ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/slaits/nsch07/1a_Survey_Instrument_English/NSCH_Questionnaire_052109.pdf	Population: states, Population: national, Population: regional/network
Measure ID#: OT3-038-10	Children Who Receive Effective Care Coordination of Healthcare Services When Needed	Child and Adolescent Health Measurement Initiative	This is a two-part measure used to assess both care coordination services and communication among providers when needed.	(a) Children who needed care coordination help but did NOT receive all that they needed. (b) Children who needed care coordination communication but were NOT satisfied with what	(a) All children 0-17 years of age who needed care coordination in the past 12 months (children who visited at least two types of the following services in the past 12 months: preventive healthcare visit,	(a) Excluded from denominator if child does not fall in target population age range of 0-17 years and/or did not receive two or more services which might require coordinating and/or parent did not report needing care coordination among	Survey: Patient 2007 National Survey of Children's Health ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/slaits/nsch07/1a_Survey_Instrument_E	Population: states, Population: national, Population: regional/network

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				they received. **Details** For a child to be included in numerator part (a) of needing care coordination help but NOT receiving all that they needed: - Child used at least two types of four different health care services in the past 12 months (preventive medical visit, preventive dental visit, mental health treatment or counseling, and/or medical health care specialist; K4Q20, K4Q21, K4Q22, K4Q24) AND -Parent reports that they have felt that they could have help arranging or coordinating child's care among the different health care providers or services (K5Q21=Yes) AND -Parent reports that they did not get as much help as they wanted with arranging or coordinating child's care (K5Q22=Never or Sometimes) For a child to be included in numerator part (b) of needing care coordination communication but the parent NOT feeling satisfied with what they received: -Child received treatment from a mental health professional or health care specialist in the past 12 months (K4Q22, K4Q24) AND -Parent was not satisfied with the communication among providers (K5Q30= Somewhat	preventive dental care visit, medical healthcare specialist, and/or mental health professional) (b) Children 0-17 years of age whose optimal care requires coordination communication among providers [e.g. those children who received mental health or specialist treatment in the past 12 months or whose care required coordination with school(s)]. **Details** (a) All children 0-17 years of age who: - Visited at least two types of the following services in the past 12 months (preventive healthcare visit, preventive dental care visit, medical healthcare specialist, and/or mental health professional) -Needed care coordination in the past 12 months (Either K5Q20=Yes OR K5Q20=No and K5Q21=Yes) (b) All children 0-17 years who: - Received treatment from a mental health professional or health care specialist in the past 12 months (K4Q22, K4Q24) OR -Had doctors who needed to communicate with child's school, early intervention program, special education program, etc (K5Q31=Yes)	services. (b) Excluded from denominator if child does not fall in target population age range of 0-17 years and/or did not receive mental health or specialist treatment in the past 12 months and/or did not need child's providers to communicate with child's school **Details** If child is older than 17 years of age, excluded from denominator. (a) If parent does not report the child using two or more healthcare services, questions legitimately skipped. If parent does not report needing help arranging or coordinating care among services for their child, child excluded from denominator (b) If child's care did not require coordination with more than one provider, or providers and his/her school, no communication was needed and questions legitimately skipped and excluded from denominator. **Adjustments** No risk adjustment necessary.	nglish/NSCH_Questionnaire_052109.pdf	

Measure Numbers	**Measure Title**	**Measure Steward**	**Measure Description**	**Numerator**	**Denominator**	**Exclusions Adjustments**	**Data Source**	**Level of Analysis**
				satisfied, somewhat dissatisfied, or very dissatisfied) OR -Doctors needed to communicate with child's school, early intervention program, special education program, etc (K5Q31=Yes) AND Parent was not satisfied with the communication between doctors and schools (K5Q32= Somewhat satisfied, somewhat dissatisfied, or very dissatisfied).				
Measure ID #: OT3-039-10	Children who live in communities perceived as safe	Child and Adolescent Health Measurement Initiative	This measure ascertains the parents' perceived safety of child's community or neighborhood.	Children whose parents report their neighborhood or community is usually/always safe for children. **Details** "How often do you feel that [child] is safe in your community or neighborhood? Would you say never, sometimes, usually or always?" Safe neighborhood numerator combines responses of usually and always.	Children age 0-17 years. **Details** All children 0-17 years old.	Excluded from denominator if child does not fall in target population age range of 0-17 years. **Details** N/A **Adjustments** No risk adjustment necessary.	Survey: Patient 2007 National Survey of Children's Health ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/slaits/nsch07/1a_Survey_Instrument_English/NSCH_Questionnaire_052109.pdf	Population: states, Population: national, Population: regional/network
Measure ID#: OT3-041-10	Children who attend schools perceived as safe	Child and Adolescent Health Measurement Initiative	This measure ascertains the perceived safety of child's school.	Children whose parents report their school is usually/always safe for children. **Details** The numerator is based on responses to the following item: "How often do you feel that [child] is safe at school? Would you say never, sometimes, usually or always?" Numerator for safe schools combines usually and always.	Children age 6-17 years who have been enrolled in school during the past 12 months. **Details** Children age 6-17 who have been enrolled in school during the past 12 months.	Children are excluded from the denominator: • If the child is less than 6 years of age or over 17 years old • If the child is homeschooled (K7Q01 = 3) • If the child is not enrolled in school (K7Q01F =2) • If the child did not go to school in the past 12 months (K7Q02 = 555). **Details** N/A **Adjustments** No risk adjustment necessary.	Survey: Patient 2007 National Survey of Children's Health ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/slaits/nsch07/1a_Survey_Instrument_English/NSCH_Questionnaire_052109.pdf	Population: states, Population: national, Population: regional/network

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
Measure ID#: OT3-043-10*	Pediatric Symptom Checklist (PSC)	Massachusetts General Hospital	The Pediatric Symptom Checklist (PSC) is a brief parent report questionnaire that is used to measure overall psychosocial functioning in children from 4 to 16 years of age. Originally developed to be a screen that would allow pediatricians and other health professionals to identify children with poor overall functioning who were in need of further evaluation or referral, the PSC has seen such wide use in large systems that it has been used as an outcome measure to assess changes in functioning over time. In addition to the original 35-item parent report form of the PSC in English, there are now many other validated forms including translations of the original form into more than a dozen other languages, a youth self report, a pictorial version, and a briefer 17-item version for both the parent and youth forms.	The numerator is the percentage of patients who had a decrease in total score of at least one point within six months of the first assessment with the Pediatric Symptom Checklist. Total score on the PSC is the weighted score (0, 1, or 2) for each item's response (never, sometimes, or often), summed over all 35 items, with a possible total score range of 0-70. This continuous total score can be recoded to provide a categorical rating of whether the child is a probable 'case' or 'non case'. A probable case is a child who has a PSC total score above an empirically determined cut-off point. For school aged children in a normative US pediatric sample, scores of 28 or higher are considered to indicate the presence of a psychosocial problem and a positive screen, with CPT modifier U2 coded for positive screens. **Details** The weighted item score (0,1,2) is calculated for each of the 35 items and the weighted total score is then calculated by summing the weighted scores for all items. Total score is compared to standards validated in a national sample. For school aged children, scores of 28 or higher are considered to indicate the presence of a psychosocial problem	Patients 4-16 years of age who had the PSC given as a Physician-Administered Developmental, Behavioral and Emotional Screening (CPT code 96110) as part of a pediatric visit or children in this age range whose overall psychosocial functioning is being assessed in other venues. **Details** Populations of normal elementary school children, all pediatric outpatients seen for well child care or specialty populations like children in outpatient mental health care have been assessed. Screens can be administered during well- or sick-child outpatient pediatric visits, annual or other routine assessments at school, or as a part of pre/post evaluations of pediatric or mental health interventions.	Children too far out of the validated range because too young (< 3) or too old (> 18) should be excluded. Patient is not eligible if one or more of the following conditions exist: patient's parent or patient refuses to participate; patient is in an urgent or emergent situation where time is of the essence and to delay treatment would jeopardize the patient's health status or severe mental and/or physical incapacity where the parent or patient is unable to express himself/ herself in a manner understood by others. For example: cases such as delirium or severe cognitive impairment, where psychosocial problems cannot be accurately assessed through use of standardized assessment tools. **Details** N/A **Adjustments** No risk adjustment necessary. N/A	Documentation of original self-assessment, paper medical record/flow-sheet, Electronic Health/Medical Record, Electronic clinical data, Electronic administrative data/claims, Management data, lab data, Survey: Patient	Clinicians: Individual, Clinicians: Group, Program: Disease management, Program: QIO, Population: national, Population: regional/network, Can be measured at all levels

Measure Numbers	**Measure Title**	**Measure Steward**	**Measure Description**	**Numerator**	**Denominator**	**Exclusions Adjustments**	**Data Source**	**Level of Analysis**
				and a positive screen, with lower scores indicating the absence of such problems and a negative screen. CPT modifier U2 is coded for positive screens and *modifier* U1 for negative screens.				
Measure ID #: OT3-044-10	Children who have inadequate insurance coverage for optimal health	Child and Adolescent Health Measurement Initiative		Percentage of children whose current health insurance coverage is adequate for meeting child's heath care needs Adequate insurance is defined by these criteria: child currently has health insurance coverage AND benefits usually or always meet child's needs AND usually or always allow child to see needed providers AND either no out-of-pocket expenses or out-of pocket expenses are usually or always reasonable. **Details** For a child to be included in the numerator of having adequate insurance coverage, criteria from the following five questions must be met: • Child has current health insurance coverage (K3Q01) • Insurance allows the child to see needed healthcare providers (K3Q22) • Insurance coverage is sufficient to meet the child's needs (K3Q20) •If the family pays some health care costs out of pocket (K3Q21A), these costs are reasonable (K3Q21B).	Children age 0-17 years with current health insurance. **Details** Children age 0-17 years with current health insurance. "Current health insurance" is defined as any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicaid.	Excluded from denominator if child does not fall in target population age range of 0-17 years and/or does not have current health insurance Details If child is older than 17 years of age, excluded from denominator. If child does not have current health insurance (any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicaid), excluded from denominator. Adjustments no risk adjustment necessary	Survey: Patient 2007 National Survey for Children's Health ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/slaits/nsch07/1a_Survey_Instrument_English/NSCH_Questionnaire_052109.pdf	Population: national, Population: states, Population: regional/network

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				For a child to be included in the numerator of having inadequate insurance coverage, criteria from the following five questions must be met: • Child has current health insurance coverage (K3Q01) • Insurance coverage is not sufficient to meet the child's needs (K3Q20) • Insurance does not allow the child to see needed health care providers (K3Q22) • If the family pays some health care costs out of pocket (K3Q21A), these costs are not reasonable (K3Q21B).				
Measure ID#: OT3-045-10	Measure of medical home for children and adolescents	Child and Adolescent Health Measurement Initiative |	This composite measure assesses whether or not children and adolescents (age 0-17 years) receive health care within a medical home according to the survey respondent (almost always the child's parent). The medical home measure is based on six of the seven components of care first proposed by the American Academy of Pediatrics (AAP)—health care that is accessible, family-centered, continuous, comprehensive, coordinated, compassionate, and culturally effective. (Note: "Accessible" is the one component of medical home that	The Measure of Medical Home for Children Adolescents measures whether or not a child or adolescent is receiving care within a medical home – that is, care that meets all of the following criteria – child has a regular doctor or nurse AND has a usual place for well and sick care AND receives care that is family-centered AND has no problems getting referrals when needed AND receives effective care coordination when needed. **Details** For a child to be included in the target numerator of receiving care within a medical home, the following numerator criteria must be met: • Child has at least 1	**Main Denominator** Children age 0-17 years in the U.S. (this measure has only been officially tested on children in the United States and has not been tested for potential cultural differences among other countries). **Domain-Specific Denominators** • Established relationship with a specific provider: o Children age 0-17 years in the U.S. • Family-centered/Compassionate: o Children age 0-17 years in the U.S. who received at least 1 service from a doctor or other health care provider in the past 12 months • Comprehensive: o Children age 0-17 years in the U.S. • Coordinated: o K5Q31, K5Q32: Children age 0-17 years in the U.S. who received at	The minimum denominator exclusions are: if the child is not between the ages of 0 and 17 years, if the child does not have at least 1 health care provider considered to be a personal doctor or nurse, or if the child does not have a usual source for both sick and well-child care, or if the child has not used any health-related services in the past 12 months. **Details** See full description of the denominators for each component of the medical home composite measure. A case is EXCLUDED from the denominator of having a medical home if: • Child is not between 0-17 years • Child does not have at least 1 health care provider considered as personal doctor or nurse (K4Q04) OR • Child does not have usual source(s) for both sick and well-child care (K4Q01, K4Q02) OR • Child has not seen any health care provider in the past 12	Survey: Patient 2007 National Survey of Children's Health ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/slaits/nsch07/1a_Survey_Instrument_English/NSCH_Questionnaire_052109.pdf ; http://www.cdc.gov/nchs/data/slaits/NSCSHCNIIEnglishQuest.pdf	Population: states, Population: national, Population: regional/network

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
			is not directly addressed in this composite measure. This will be explained in a later section.) The AAP policy statement emphasizes that a medical home is “not a building, house, or hospital, but rather an approach to providing continuous and comprehensive primary pediatric care from infancy through young adulthood, with availability 24 hours a day, 7 days a week, from a pediatrician or physician whom families trust,” and this composite measure of medical home is designed to assess the receipt of quality health care using the AAP's recommended care guidelines.	health care provider considered as personal doctor or nurse (K4Q04) • Child has usual source(s) for both sick and well-child care (K4Q01, K4Q02) • If child used at least 1 of 5 different services in the past 12 months—preventive medical care, preventive dental care, mental health treatment or counseling, saw a specialist, or needed to see a specialist (K4Q20, K4Q21, K4Q22, K4Q23, K4Q25): o Received family-centered, compassionate, culturally effective care from ALL child’s doctors and other health care providers (K5Q40, K5Q41, K5Q42, K5Q43, K5Q44, K5Q45, K5Q46) o If child needed referral(s), no problems getting referral(s) (K5Q10, K5Q11) o If child needed care coordination (used at least 2 of 5 different services in the past 12 months from above), no problems getting effective care coordination (K5Q20, K5Q21, K5Q22, K5Q30, K5Q31, K5Q32).	least 1 service from a doctor or other health care provider in the past 12 months o K5Q20, K5Q21, K5Q22, and K5Q30: Children age 0-17 years in the U.S. who received 2 or more services from a doctor or other health care provider in the past 12 months • Culturally effective: o K5Q42: Children age 0-17 years in the U.S. who received at least 1 service from a doctor or other health care provider in the past 12 months o K5Q45 and K5Q46: Children age 0-17 years in the U.S. who speak a primary household language other than English or unknown. **Details** Geographically defined—the sampling frame used on this measure (from the most recently tested 2007 National Survey of Children's Health) is a geographically representative sample at both the national and state levels. Other denominator sampling frames are possible, such as sub-state geographic regions or health plans. • Children age 0 to 17 years in the U.S. o More specific denominators such as use of services-related skips are addressed in the Denominator Details field above.	months—preventive medical care, preventive dental care, mental health treatment or counseling, saw a specialist, or needed to see a specialist (K4Q20, K4Q21, K4Q22, K4Q23, K4Q25). **Adjustments** No risk adjustment necessary.		
Measure ID#: OT3-046-10*	Validated family-centered survey questionnaire for parents’ and patients’	Children's Hospital Boston	This family-centered survey questionnaire consists of 62 questions that assess	The 62-item survey evaluates parents' experiences during inpatient pediatric hospital stay.	Randomly sampled parents or caregivers, 18 years or older, of children who had an inpatient stay of at least one night at the hospital	The denominator excludes surveys that are received after 6 weeks after sending it out to the parents/caregivers. Patients from the hospital, e.g., ambulatory	Registry data	Can be measured at all levels

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
	experiences during inpatient pediatric hospital stay		various aspects of care experiences during inpatient pediatric hospital stays. The dimensions that are included are overall impressions, interactions with nurses, interactions with doctors, the admission and discharge process, home care preparation, medications, pain management, parent involvement, hospital environment, support staff and food. Demographic questions are included at the end of the survey. The majority of the survey questions are categorical in nature. Ordinal measures enable the rating of experiences, dichotomous measures are used to assess if subsequent questions apply to the experiences of parents and the patient but a small number of questions are open-ended to allow any additional or more detailed comments. Survey will be collected for a given time period, e.g. monthly. The target population is one of the parents, 18 years or older, of a child that stayed for at least one day in an inpatient unit at the hospital and was discharged	**Details** The dimensions that are included are overall impressions, interactions with nurses, interactions with doctors, the admission and discharge process, home care preparation, medications, pain management, parent involvement, hospital environment, support staff and food. Demographic questions are included at the end of the survey. The experiences are rated with various scales such as "Never to Always," "Very Easy to Very Hard," "Very Poorly to Very Well," "Poor to Excellent," "Not At All to Very Well," "Fell Far Below My Expectations to Exceeded My Expectations," "Very Unlikely to Very Likely," and "Strongly Disagree to Strongly Agree." "Not applicable" responses are available whenever applicable.	and responded to the survey. **Details** The denominator includes all parents and caregivers: 1. Whose child stayed at least one night on an inpatient unit at the hospital 2. Was discharged during a certain time period 3. Was randomly selected 4. Answered the survey within 6 weeks after the end of the time period.	patients, that did not have an inpatient stay are not included in the target population and therefore not in the denominator. **Details** The denominator excludes surveys that are received after 6 weeks after sending it out to the parents/caregivers. Patients from the hospital, e.g., ambulatory patients, that did not have an inpatient stay are not included in the target population and therefore not in the denominator. **Adjustments** No risk adjustment necessary. N/A		

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
			during the previous time period, e.g. the last month. A random sample will be drawn of all discharged parent-patient units and receive the survey. The instrument is currently validated for mail and phone administration and is in English. All questions are asking about experiences during their last inpatient hospital stay. Further steps include validation for web administration and other languages.					
Measure ID #: OT3-055-10	Gastroenteritis admission rate (pediatric)	Agency for Healthcare Research and Quality	Admission rate for gastroenteritis in children ages 3 months-17 years, per 100,000 population (area level rate).	Discharges ages 3 months to 17 years with ICD-9-CM principal diagnosis code of gastroenteritis, OR with secondary diagnosis code of gastroenteritis and a principal diagnosis code of dehydration. Exclude cases: •.MDC 14 (pregnancy, childbirth, and puerperium) • transfer from other institution • age less than or equal to 90 days (or neonates if age in days is missing) • with any diagnosis code of gastrointestinal abnormalities or bacterial gastroenteritis. **Details** Inpatient discharges with ICD-9-CM principal diagnosis code of gastroenteritis: ICD-9-CM Gastroenteritis diagnosis	Population ages 3 months to 17 years in Metro Area or county. **Details** Population ages 3 months to 17 years in Metro Area or county.	There are no denominator exclusions. **Details** There are no denominator exclusions. **Adjustments** case-mix adjustment The measure uses age and sex in the risk adjustment. Poverty risk adjustment is optional.	Electronic administrative data/claims	Population: states, Population: counties or cities, Population: national, Population: regional/network

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				codes: 00861 ENTERITIS ROTAVIRUS 00862 ENTERITIS ADENOVIRUS 00863 ENTERITIS NORWALK VIRUS 00864 ENTERITIS OTH SML RND VIRUS 00865 ENTERITIS CALICIVIRUS 00866 ENTERITIS ASTROVIRUS 00867 ENTERITIS ENTEROVIRUS NEC 00869 ENTERITIS NOS 0088 VIRAL ENTERITIS NOS 0090 INFECTIOUS ENTERITIS NOS 0091 ENTERITIS OF INFECT ORIG 0092 INFECTIOUS DIARRHEA 0093 DIARRHEA OF PRESU INFECT ORIG 5589 NONINF GASTROENTERIT NEC ICD-9-CM Dehydration diagnosis codes: 2765 HYPOVOLEMIA 27651 DEHYDRATION 0CT06- 27650 VOL DEPLETION, UNSPECIFIED OCT06 27652 HYPOVOLEMIA OCT06- ICD-9-CM Gastrointestinal Abnormalities diagnosis codes (excluded): 53570 EOSINOPHILIC GASTRITIS WO HEM 538 GASTROINTESTINAL MUCOSITIS OCT08- (ULCERATIVE) 53571 EOSINOPHILIC GASTRITIS W HEM				

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				5550 REGIONAL ENTERITIS, SMALL OCT08- INTESTINE 5551 REGIONAL ENTERITIS, LARGE INTESTINE 5552 REGIONAL ENTERITIS, SMALL INTESTINE WITH LARGE INTESTINE 5559 REGIONAL ENTERITIS, UNSPECIFIED SITE 5560 ULCERATIVE CHRONIC ENTEROCOLITIS 5561 ULCERATIVE CHRONIC ILEOCOLITIS 5562 ULCERATIVE CHRONIC PROCTITIS 5563 ULCERATIVE CHRONIC PROCTOSIGMOIDITIS 5564 PSEUDOPOLYPOSIS OF COLON 5565 LEFT-SIDED ULCERATIVE CHRONIC COLITIS 5566 UNIVERSAL ULCERATIVE CHRONIC COLITIS 5568 OTHER ULCERATIVE COLITIS 5569 ULCERATIVE COLITIS NOS 5581 GASTROENTERITIS AND COLITIS DUE TO RADIATION 5582 TOXIC GASTROENTERITIS AND COLITIS 5583 ALLERGIC GASTROENTERITIS AND COLITIS 55841 EOSINOPHILIC GASTROENTERITIS OCT08- 55842 EOSINOPHILIC COLITIS OCT08- 5790 CELIAC DISEASE				

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				5791 TROPICAL SPRUE 5792 BLIND LOOP SYNDROME 5793 OTHER AND UNSPECIFIED POSTSURGICAL NONABSORPTION 5794 PANCREATIC STEATORRHEA 5798 OTHER SPECIFIED INTESTINAL MALABSORPTION 5799 UNSPECIFIED INTESTINAL MALABSORPTION ICD-9-CM Bacterial Gastroenteritis diagnosis codes: 0030 SALMONELLA GASTROENTERITIS 0040 SHIGELLA DYSENTERIAE 0041 SHIGELLA FLEXNERI 0042 SHIGELLA BOYDII 0043 SHIGELLA SONNEI 0048 OTHER SPECIFIED SHIGELLA INFECTIONS 0049 SHIGELLOSIS, NOS 0050 STAPHYLOCOCCAL FOOD POISONING 0051 BOTULISM 0052 FOOD POISONING DUE TO CLOSTRIDIUM PERFRINGENS 0053 FOOD POISONING DUE TO OTHER CLOSTRIDIA 0054 FOOD POISONING DUE TO VIBRIO PARAHAEMOLYTICUS 0058 OTHER BACTERIAL FOOD POISONING				

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				00581 FOOD POISONING DUE TO VIBRIO VULNIFICUS 00589 OTHER BACTERIAL FOOD POISONING 0059 FOOD POISONING NOS 0060 ACUTE AMEBIC DYSENTERY WO MENTION OF ABSCESS 0061 CHRONIC INTESTINAL AMEBIASIS WO MENTION OF ABSCESS 0062 AMEBIC NONDYSENTERIC COLLITIS 0070 BALANTIDIASIS 0071 GIARDIASIS 0072 COCCIDIOSIS 0073 INTESTINAL TRICHOMONIASIS 0074 CRYPTOSPORIDIOSIS 0075 CYCLOSPORIASIS 0078 OTHER SPECIFIED PROTOZOAL INTESTINAL DISEASES 0079 UNSPECIFIED PROTOZOAL INTESTINAL DISEASE 0080 ESCHERICHIA COLI 00800 E. COLI NOS 00801 ENTEROPATHOGENIC E. COLI 00802 ENTEROTOXIGENIC E. COLI 00803 ENTEROINVASIVE E. COLI 00804 ENTEROHEMORRHAGE E. COLI 00809 OTHER INTESTINAL E. COLI				

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				INFECTIONS 0081 ARIZONA GROUP OF PARACOLON BACILLI 0082 AEROBACTER AEROGENES 0083 PROTEUS 0084 OTHER SPECIFIED BACTERIA 00841 OTHER SPECIFIED BACTERIA, STAPHYLOCOCCUS 00842 OTHER SPECIFIED BACTERIA, PSEUDOMONAS 00843 OTHER SPECIFIED BACTERIA, CAMPYLOBACTER 00844 OTHER SPECIFIED BACTERIA, YERSINIA ENTEROCOLITICA 00845 OTHER SPECIFIED BACTERIA, CLOSTRIDIUM DIFFICILE 00846 OTHER SPECIFIED BACTERIA, OTHER ANAEROBES 00847 OTHER SPECIFIED BACTERIA, OTHER GRAM-NEGATIVE BACTERIA 00849 OTHER SPECIFIED BACTERIA, OTHER 0085 BACTERIAL ENTERITIS, NOS 11285 CANDIDAL ENTERITIS				
Measure ID #: OT3-057-10	Asthma admission rate (pediatric)	Agency for Healthcare Research and Quality |	Admission rate for asthma in children ages 2-17, per 100,000 population (area level rate).	Inpatient discharges ages 2 to 17 years with ICD-9-CM principal diagnosis code of asthma. Exclude cases:	Population ages 2 to 17 years in Metro Area or county. **Details** Population ages 2 to 17	There are no denominator exclusions. **Details** There are no denominator exclusions.	Electronic administrative data/claims	Population: states, Population: counties or cities, Population: national, Population: regional/network

Measure Numbers	**Measure Title**	**Measure Steward**	**Measure Description**	**Numerator**	**Denominator**	**Exclusions Adjustments**	**Data Source**	**Level of Analysis**
				• MDC 14 (pregnancy, childbirth, and puerperium) • transfer from other institution • age less than 2 years • with any diagnosis code for cystic fibrosis and anomalies of the respiratory system **Details** Inpatient discharges with ICD-9-CM principal diagnosis code of asthma: ICD-9-CM Asthma diagnosis codes: 49300 EXT ASTHMA W/O STAT ASTH 49321 CH OB ASTHMA W STAT ASTH 49301 EXT ASTHMA W STATUS ASTH 49322 CH OBS ASTH W ACUTE EXAC OCT00¬ 49302 EXT ASTHMA W ACUTE EXAC OCT00- 49381 EXERCSE IND BRONCHOSPASM OCT03- 49310 INT ASTHMA W/O STAT ASTH 49382 COUGH VARIANT ASTHMA OCT03- 49311 INT ASTHMA W STATUS ASTH 49390 ASTHMA W/O STATUS ASTHM 49312 INT ASTHMA W ACUTE EXAC OCT00- 49391 ASTHMA W STATUS ASTHMAT 49320 CH OB ASTH W/O STAT ASTH 49392 ASTHMA W ACUTE EXACERBTN OCT00	years in Metro Area or county.	**Adjustments** Risk-adjustment devised specifically for this measure/condition. The measure uses age and sex in the risk adjustment. Poverty risk adjustment is optional.		

Measure Numbers	Measure Title	Measure Steward	Measure Description	Numerator	Denominator	Exclusions Adjustments	Data Source	Level of Analysis
				ICD-9-CM Cystic Fibrosis and Anomalies of the Respiratory System diagnosis codes: 27700 CYSTIC FIBROS W/O ILEUS 74860 LUNG ANOMALY NOS 27701 CYSTIC FIBROS W ILEUS 74861 CONGEN BRONCHIECTASIS 27702 CYSTIC FIBROS W PUL MAN 74869 LUNG ANOMALY NEC 27703 CYSTIC FIBROSIS W GI MAN 7488 RESPIRATORY ANOMALY NEC 27709 CYSTIC FIBROSIS NEC 7489 RESPIRATORY ANOMALY NOS 74721 ANOMALIES OF AORTIC ARCH 7503 CONG ESOPH FISTULA/ATRES 7483 LARYNGOTRACH ANOMALY NEC 7593 SITUS INVERSUS 7484 CONGENITAL CYSTIC LUNG 7707 CHRONIC RESPIRATORY DISEASE 7485 AGENESIS OF LUNG ARISING IN THE PERINATAL PERIOD				

Appendix B
National Voluntary Consensus Standards for Patient Outcomes: Child Health Steering Committee

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Appendix C: Other NQF-Endorsed Child Health Outcomes Consensus Standards

Measure	Numerator	Denominator	Measure Steward	Exclusion
Measure ID#: 0138 Urinary catheter-associated urinary tract infection for intensive care unit (ICU) patients	Number of indwelling urinary catheter-associated UTIs (defined by CDC case definitions of symptomatic UTI or asymptomatic bacteriuria, excludes other infections of the urinary tract) x 1,000	Number of indwelling urinary catheter days for ICU patients Reported by type of ICU (coronary, cardiothoracic, medical, medical-surgical (major teaching and all others), neurosurgical, pediatric, surgical, trauma, burn, and respiratory)	Centers for Disease Control and Prevention	
Measure ID#: 0139 Central line catheter-associated blood stream infection rate for ICU and high-risk nursery (HRN) patients	Number of central line-associated blood stream infections (laboratory-confirmed bloodstream infection or clinical sepsis) x 1,000 Number of umbilical and central line-associated blood stream infections (laboratory-confirmed bloodstream infection or clinical sepsis) x 1,000	Number of central line-days for ICU patients Reported by type of ICU (coronary, cardiothoracic, medical, medical-surgical (major teaching and all others), neurosurgical, pediatric, surgical, trauma, burn, and respiratory) Number of central-line days for HRN patients Reported for HRNs by birth weight category (<1,000, 1,001-1,500, 1,501-2,500, and >2,500g)	Centers for Disease Control and Prevention	
Measure ID#: 0140 Ventilator-associated pneumonia for ICU and high-risk nursery (HRN) patients	Number of ventilator-associated pneumonias x 1,000	Number of ventilator-days for ICU patients: Reported by type of ICU (coronary, cardiothoracic, medical, medical-surgical (major teaching and all others), neurosurgical, pediatric, surgical, trauma, burn, and respiratory) Number of ventilator days for HRN patients: Reported for HRNs by birth weight category (<1,000, 1,001-1,500, 1,501-2,500, and >2,500g)	Centers for Disease Control and Prevention	
Measure ID#: 0278 Low birth weight (PQI 9)	Number of births with ICD-9-CM diagnosis codes for birth weights less than 2500 grams in any field	All births (discharges in MDC 15, newborns and other neonates) in MSA or county.	Agency for Healthcare Research and Quality	Transfer from other institution
Measure ID#: 0303 Late sepsis or meningitis in neonates (risk-adjusted)	Eligible infants with one or more of the following criteria: Criterion 1. Bacterial Pathogen A bacterial pathogen is recovered from a blood and/or cerebral spinal fluid culture obtained after Day 3 of life.	•Any infant who is born at the hospital and whose birth weight is between 401 and 1500 grams OR whose gestational age is between 22 weeks 0 days and 29 weeks 6 days (inclusive) is eligible, regardless of where in the hospital the infant receives care. • Any outborn infant who is admitted to	Vermont Oxford Network	Exclude patients if: • The infant is discharged home or dies on or before Day 3. • The infant is transferred from your center to another hospital on or before Day 3 and either, a) is not readmitted to the center/hospital before discharge

Measure	Numerator	Denominator	Measure Steward	Exclusion
	Criterion 2. Coagulase Negative Staphylococcus Coagulase negative staphylococcus is recovered and the infant has all 3 of the following: • Coagulase negative staphylococcus is recovered from a blood culture obtained from either a central line, or peripheral blood sample and/or is recovered from cerebrospinal fluid obtained by lumbar puncture, ventricular tap or ventricular drain. AND • Signs of generalized infection (such as apnea, temperature instability, feeding intolerance, worsening respiratory distress or hemodynamic instability). AND • Treatment with 5 or more days of intravenous antibiotics after the above cultures were obtained. If the infant died, was discharged, or transferred prior to the completion of 5 days of intravenous antibiotics, this condition would still be met if the intention were to treat for 5 or more days. Criterion 3. Fungal Infection A fungus was recovered from a blood culture obtained from either a central line or peripheral blood sample after day 3 of life.	any location in the hospital within 28 days of birth, without first having gone home, and whose birth weight is between 401 and 1500 grams OR whose gestational age is between 22 weeks 0 days and 29 weeks 6 days (inclusive) is eligible, regardless of where in the hospital the infant receives care. • Any infant whose birth weight is over 1500 grams and who is admitted to a Neonatal Intensive Care Unit (NICU) in your hospital within the first 28 days of life, regardless of gestational age. • Any infant whose birth weight is over 1500 grams and who dies at any location in your hospital within 28 days of birth without first having gone home. This includes inborn and outborn infants.		home, death or first birthday, or b) is transferred a second time on or before the Day 3.
Measure ID#: 0304 Late sepsis or meningitis in Very Low Birth Weight (VLBW) neonates (risk-adjusted)	Eligible infants with one or more of the following criteria: Criterion 1. Bacterial Pathogen A bacterial pathogen is recovered from a blood and/or cerebral spinal fluid culture obtained after Day 3 of life. Criterion 2. Coagulase Negative Staphylococcus Coagulase negative staphylococcus is recovered and the infant has all 3 of the	•Any infant who is born at the hospital and whose birth weight is between 401 and 1500 grams OR whose gestational age is between 22 weeks 0 days and 29 weeks 6 days (inclusive) is eligible, regardless of where in the hospital the infant receives care. • Any outborn infant who is admitted to any location in the hospital within 28 days of birth, without first having gone home, and whose birth weight is between 401 and 1500 grams OR whose gestational age is between 22 weeks 0	Vermont Oxford Network	Exclude patients if: • The infant is discharged home or dies on or before Day 3. • The infant is transferred from your center to another hospital on or before Day 3 and either, a) is not readmitted to the center/hospital before discharge home, death or first birthday, or b) is transferred a second time on or before the Day 3.

Measure	Numerator	Denominator	Measure Steward	Exclusion
	following: • Coagulase negative staphylococcus is recovered from a blood culture obtained from either a central line, or peripheral blood sample and/or is recovered from cerebrospinal fluid obtained by lumbar puncture, ventricular tap or ventricular drain. AND • Signs of generalized infection (such as apnea, temperature instability, feeding intolerance, worsening respiratory distress or hemodynamic instability). AND • Treatment with 5 or more days of intravenous antibiotics after the above cultures were obtained. If the infant died, was discharged, or transferred prior to the completion of 5 days of intravenous antibiotics, this condition would still be met if the intention were to treat for 5 or more days. Criterion 3. Fungal Infection A fungus was recovered from a blood culture obtained from either a central line or peripheral blood sample after day 3 of life.	days and 29 weeks 6 days (inclusive) is eligible, regardless of where in the hospital the infant receives care.		
Measure ID#: 0335 PICU unplanned readmission rate	Total number of unplanned readmissions within 24 hours after discharge/transfer from the PICU	100 PICU Discharges, <18 yrs of age	National Association of Children's Hospitals and Related Institutions	Patients = 18 years of age, Readmissions > 24 hours following discharge/transfer from PICU, All planned readmissions
Measure ID#: 0339 Pediatric heart surgery mortality (PDI 6) (risk adjusted)	Number of deaths, age under 18 years, with a code of pediatric heart surgery in any procedure field with an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code of congenital heart disease in any field	All discharges age under 18 years with ICD-9-CM procedure codes for congenital heart disease (1P) in any field or non-specific heart surgery (2P) in any field with ICD-9-CM diagnosis of congenital heart disease (2D) in any field	Agency for Healthcare Research and Quality	Exclude patients with MDC 14 (Pregnancy, Childbirth, Pueperium); patients with trans-catheter interventions as single cardiac procedures, performed without bypass but with catheterization; patients with septal defects as single cardiac procedures without bypass; heart transplant; premature infants with PDA closure as only cardiac procedure; age less than 30 days with PDA closure as only cardiac procedure; missing discharge disposition; transferring to another short-term hospital and newborns less than 500 grams
Measure ID#: 0340 Pediatric heart surgery volume (PDI 7)	Discharges, age under 18 years, with an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code for either congenital	Not applicable	Agency for Healthcare Research and Quality	Exclude patients with MDC 14 (Pregnancy, Childbirth, Pueperium); patients with trans-catheter interventions as single cardiac procedures, performed

Measure	Numerator	Denominator	Measure Steward	Exclusion
	heart disease (1P) in any field or non-specific heart surgery (2P) in any field with ICD-9-CM diagnosis of congenital heart disease (2D) in any field			without bypass but with catheterization; patients with septal defects as single cardiac procedures without bypass
Measure ID#: 0343 PICU standardized mortality ratio	Observed Mortality, “Observed” = actual number of deaths occurring in PICU	Predicted mortality, “Predicted mortality“ = Number of deaths expected based on assessed physiologic risk of mortality Include all PICU patients < 18 year of age admitted to the PICU for greater than 2 hours or with at least two consecutive sets of vital signs consistent with life with risk of mortality assessment	National Association of Children's Hospitals and Related Institutions	All PICU patients = 18 years of age, PICU patients with a stay < 2 hours or < 2 consecutive sets of vital signs consistent with life, Deaths occurring outside the PICU, Preterm infants post-gestational age < 36 weeks, Patients admitted to PICU for palliative care: AAP Committee on Bioethics
Measure ID#: 0344 Accidental puncture or laceration (PDI 1) (risk adjusted)	Discharges with International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code denoting accidental cut, puncture, perforation or laceration during a procedure in any secondary diagnosis field	Discharges, age under 18 years, defined by specific surgical and medical Diagnosis Related Groups (DRG)	Agency for Healthcare Research and Quality	Patients with ICD-9-CM code denoting accidental cut, puncture or laceration in the principal diagnosis field (secondary diagnosis field if present on admission); with Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, and puerperium); with normal newborn DRG (DRG 391); and newborns less than 500 grams
Measure ID#: 0348 Iatrogenic pneumothorax in non-neonates (PDI 5) (risk adjusted)	Discharges with ICD-9-CM code of iatrogenic pneumothorax in any secondary diagnosis field	Discharges, age under 18 years, defined by specific surgical and medical DRGs	Agency for Healthcare Research and Quality	Neonates (birth weight less than 2500 grams); patients with an ICD-9-CM code of iatrogenic pneumothorax in neonates in the principal diagnosis field (secondary diagnosis field if present on admission); with an ICD-9-CM code of thoracic surgery, lung or pleural biopsy or diaphragmatic surgery repair or assigned to a cardiac surgery DRG; with a diagnosis code of chest trauma or pleural effusion; MDC of 14 (pregnancy, childbirth, puerperium) normal newborn and newborns less than 500 grams
Measure ID#: 0350 Transfusion reaction (PDI 13)	Discharges with an ICD-9-CM code for transfusion reaction in any secondary diagnosis field	Discharges, age under 18 years, defined by specific surgical and medical DRGs	Agency for Healthcare Research and Quality	Patients with MDC 14 (pregnancy, childbirth, pueperium); with an ICD-9-CM code for transfusion reaction in the principal diagnosis field (secondary diagnosis field if present on admission); and neonates less than 500 grams
Measure ID#: 0362 Foreign body left after procedure (PDI 3)	All discharges, age under 18 years, with International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes for foreign body left in during a procedure in any secondary diagnosis field	All surgical and medical discharges age under 18 years defined by specific Surgical and Medical Diagnosis Related Group (DRG)	Agency for Healthcare Research and Quality	Exclude patients with an ICD-9-CM code of foreign body left in during a procedure in the principal diagnosis field, Major Diagnostic Category (MDC) 14 (Pregnancy, Childbirth and the Puerperium), newborns less than 500 grams and neonates (age < 28 days)
Measure ID#: 0367 Post operative wound dehiscence (PDI 11) (risk adjusted)	Number of discharges, age under 18 years, with an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code of postoperative disruption of abdominal wall (54.61) in any procedure field	All discharges age under 18 years of abdominopelvic surgery	Agency for Healthcare Research and Quality	Exclude patients with MDC 14 (Pregnancy, Childbirth, Pueperium); where a procedure for reclosure of postoperative disruption of abdominal wall occurs before or on the same day as the first abdominopelvic surgery procedure; where the length of stay is less

Measure	Numerator	Denominator	Measure Steward	Exclusion
				than two days; any diagnosis code for high and intermediate-risk immunocompromised states; with procedure codes for gastroschisis or umbilical hernia repair before reclosure and neonates less than 500 grams
Measure ID#: 0469 Elective delivery prior to 39 completed weeks gestation	Any baby electively delivered prior to 39 completed weeks gestation	All babies delivered at term (> or equal to 37 completed weeks gestation)		
Measure ID#: 0470 Incidence of episiotomy	N = Number of episiotomy procedures (CPT code 593.00) performed - episiotomy procedures associated with a shoulder dystocia (ICD 660.4X)	D = Number of vaginal deliveries (ICD-650) - vaginal delivery associated with Shoulder Dystocia (ICD 660.4X)	Vaginal deliveries complicated by a shoulder dystocia to be excluded	
Measure ID#: 0471 Cesarean rate for low-risk first birth women (aka NTSV CS rate)	That proportion of the denominator that had a cesarean birth	Livebirths at or beyond 37.0 weeks gestation that are having their first delivery and are singleton (no twins or beyond) and are vertex presentation (no breechor transverse positions). All parameters are available in administrative data sets.		Exclude patients with abnormal presentation, preterm, fetal death, multiple gestation diagnosis codes, or breech procedure codes
Measure ID#: 0474 Birth trauma rate: injury to neonates (PSI #17)	Discharges among cases meeting the inclusion and exclusion rules for the denominator	All newborns within a hospital. Newborn is any neonate with either 1) and ICD-9-CM code for in-hospital liveborn birth or 2) an admission type of newborn, age in days at admission equal to 0, and no code for an out-of-hospital birth. Neonate is defined as any discharge with age in days at admission between zero and 28 days (inclusive). If age in days is missing, then a neonate is defined as any DRG in MDC 15, an admission type of newborn, or an ICD-9-CM diagnosis code for an in-hospital liveborn birth.	Agency for Healthcare Research and Quality; National Perinatal Information Center	
Measure ID#: 0477 Under 1500g infant not delivered at appropriate level of care	Liveborn infants (<1500gms but over 24 weeks gestation) at the given birth hospital	All live births over 24 weeks gestation at the given birth hospital	California Maternal Quality Care Collaborative	
Measure ID#: 0478 Nonsocomial blood stream infections in neonates (NQI #3)	Any diagnosis code for: • Staphylococcal septicemia, unspecified [038.10] • Staphylococcus aureus septicemia [038.11] • Other staphylococcal septicemia [038.19] • Gram-negative organism NOS [038.40] • Septicemia due to other gram-negative organisms, Escherichia coli [038.42]	All inborn and outborn infants (admitted at 0-28 days) with a birthweight between 500 and 1499 g OR a gestational age between 24 and 30 weeks AND all inborn and outborn infants with a birthweight greater than or equal to 1500g, if the infant experienced death, major surgery, mechanical ventiliation or transfer in or out from/to an acute care facility. Inborn refers to neonates born within that institution, outborn refers to neonates born elsewhere but transferred within the first 2 days of life.	Agency for Healthcare Research and Quality	

Measure	Numerator	Denominator	Measure Steward	Exclusion
	• Septicemia due to other gram-negative organisms, Pseudomonas [038.43] • Septicemia due to other gram-negative organisms, Serratia [038.44] • Septicemia due to other gram-negative organisms, Other [038.49] • Disseminated candidiasis / Systemic candidiasis [112.5] OR Patients with one of the following diagnosis codes: • Septicemia [sepsis] of newborn [771.81] OR • Bacteremia of newborn [771.83] OR • Bacteremia [790.7] AND one of the following diagnosis codes: • Streptococcus Group D (Enterococcus) [041.04] • Staphylococcus, unspecified [041.10] • Staphylococcus aureus [041.11] • Other Staphylococcus [041.19] • Friedländer's bacillus (Klebsiella pneumoniae) [041.3] • Escherichia coli [041.4] • Pseudomonas [041.7]			
Measure ID#: 0480 Exclusive breastfeeding during birth hospitalization	That proportion of the denominator that were fed by "breast only" since birth	Livebirths not discharged from the NICU, who had newborn genetic screening performed (standard in California, with an opt out possibility)	California Maternal Quality Care Collaborative	Infants in the NICU at time of newborn screen, TPN, other nutrition as defined below
Measure ID#: 0482 First NICU temperature < 36oC			Vermont Oxford Network	

Measure	**Numerator**	**Denominator**	**Measure Steward**	**Exclusion**
Measure ID#: 0483 Proportion of infants 22 to 29 weeks gestation screened for retinopathy of prematurity	Number of infants 22 to 29 weeks receiving a retinal exam for ROP	Number of infants 22 to 29 weeks hospitalized at the postnatal age at which a retinal exam is recommended by the American Academy of Pediatrics	Vermont Oxford Network	Outborn infants admitted after 28 days; infants admitted after having been home