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Metrics to Drive Improvements in Health

A Report of the Task Force on **Health Care Analytics**

In Partnership with the North Carollina Department of Health and Human Services, Division of Health Benefits

North Carolina Institute of Medicine
shaping policy for a healthier state

The North Carolina Institute of Medicine (NCIOM) is a nonpolitical source of analysis and advice on important health issues facing the state. The NCIOM convenes stakeholders and other interested people from across the state to study these complex issues and develop workable solutions to improve health care in North Carolina.

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Credits

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North Carolina Institute of Medicine
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ACKNOWLEDGMENTS

The North Carolina Institute of Medicine's (NCIOM) Task Force on Health Care Analytics was convened in December 2016 at the request of the Division of Health Benefits (DHB) of the North Carolina Department of Health and Human Services, to develop the set of quality metrics that will be used to drive improvement in population health under North Carolina's Medicaid reform plan.

The Task Force was chaired by Warren Newton, MD, MPH, Director of the North Carolina Area Health Education Centers; C. Annette DuBard, MD, MPH, Director of Clinical Strategy, Aledade, Inc., former Chief Health Information Officer, Community Care of North Carolina; and James C. Hunter, MD, Senior Vice President and Chief Medical Officer, Carolinas HealthCare System. The Task Force's work would not have been possible without their leadership.

The NCIOM also wants to thank the members of the Task Force and Steering Committee who gave freely of their time and expertise to address this important issue. The Steering Committee members provided expert guidance and content, helped develop meeting agendas, and identified expert speakers. For a complete list of Task Force and Steering Committee members, please see page 4.

The NCIOM Task Force on Health Care Analytics heard presentations from multiple experts throughout the course of the Task Force process. We would like to thank the following people for sharing their expertise and experiences with the Task Force:

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In addition to the above individuals, the staff of the NCIOM contributed to the Task Force's study and the development of this report. Adam J. Zolotor, MD, DrPH, President and Chief Executive Officer, guided the work of the Task Force. Michelle G. Ries, MPH, Project Director, served as project director for the Task Force and was the primary author of the final Task Force report. Graduate research assistants Elizabeth Chen, MPH, and William Haltermann III; Mari Moss, Research Assistant; and Berkeley Yorkery, MPP, Associate Director, also contributed to the report. Key staff support was also provided by Donald Gula, Director of Administrative Operations, and Chloè Louderback, Administrative Assistant and Graphic Designer.

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In 2016, the NCIOM convened a Task Force on Health Care Analytics, at the request of the Division of Health Benefits (DHB) of the North Carolina Department of Health and Human Services, to develop the set of quality metrics that will be used to drive improvement in population health under North Carolina's Medicaid reform plan.

In North Carolina, Medicaid serves low-income and other vulnerable populations, including children from low-income households, older adults, persons with disabilities, pregnant women, and refugees.[1] In state fiscal year (SFY) 2016, North Carolina's Medicaid program served 1.8 million beneficiaries[a] (approximately 20% of North Carolina's population) each month, making it the 10th largest Medicaid program in the United States.[2] North Carolina Medicaid costs approximately $14 billion annually and is funded primarily by state and federal sources.[b]

As a result of North Carolina's Medicaid reform legislation, passed by the North Carolina General Assembly in 2015, significant changes in North Carolina's Medicaid system are anticipated.[c, d] Additional changes are expected if health care reform bills pass at the federal level.[e]

The goals of North Carolina Medicaid reform are to control cost increases in Medicaid over time, share the risk of Medicaid costs with providers and insurers, and maintain or improve the health of Medicaid beneficiaries. Session Law 2015-245 requires the new delivery system and managed care contracts be "built on defined measures and goals for risk-adjusted health outcomes, quality of care, patient satisfaction, access, and cost." Furthermore, the law tasks DHB with developing "effective measures for outcomes and quality" and addressing provider satisfaction.[a] The proposed quality metrics should be used to improve health and health care in North Carolina, both directly through Medicaid administration and indirectly through alignment with Medicare, commercial insurers, and other educational and social services.

Starting in the fall of 2016, the North Carolina Institute of Medicine worked with staff and advisors to the North Carolina Department of Health and Human Services to identify a cross-section of state stakeholders to serve on the Task Force on Health Care Analytics. Members included physicians, nurses, and other health care providers; experts in health care quality measurement and directors of quality improvement initiatives; Medicaid beneficiary and patient/family representatives; private payers; care managers; and others. Diversity of expertise, experience, and geographic region of the state was a key priority for membership selection. The Task Force was supported by a multidisciplinary steering committee comprised of senior staff from the North Carolina Department of Health and Human Services' Division of Health Benefits, Population Health Improvement Partners, the North Carolina Hospital Association, Community Care of North Carolina, and Evolent Health. The Task Force was chaired by Warren Newton, MD, MPH, Director of the North Carolina Area Health Education Centers; C. Annette DuBard, MD, MPH, Director of Clinical Strategy, Aledade, Inc., former Chief Health Information Officer, Community Care of North Carolina; and James C. Hunter, MD, Senior Vice President and Chief Medical Officer, Carolinas Health Care System.

The Task Force, in most cases, selected measures from existing evidence-based federal and state measurement sets and built on previous work by the North Carolina Division of Medical Assistance (DMA), Division of Mental Health, Developmental Disabilities, and Substance Abuse Services (DMH/DD/SAS), and others to define and prioritize quality measures for North Carolina Medicaid. The Task Force anticipates measures will evolve based on experience and published evidence, and will need to be reviewed and updated on a regular basis. The methodology for measure selection and selected measures are discussed in

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a This figure does not include NC Health Choice.
b Other funding sources include drug rebates, fraud recoveries, and cost settlements.
c Medicaid Expansion/Healthcare Jobs Initiative, S 290, 2017 Session (NC 2017).
d Carolina Cares, HR 662, 2017 Session (NC 2017).
e Proposed federal legislation may change federal funding for Medicaid to a per capita allotment or to block grant funding. This would limit federal liability for the Medicaid program and place more risk on state budgets. With the federal government contributing less, North Carolina would need to decide whether to contribute more to support Medicaid at current levels or reduce spending. The final status of federal legislation to repeal and/or replace the Affordable Care Act is unclear as of September 2017.
f 2015-245 NC Sess LAws, HB 372 (2015).

subsequent chapters of this report.

The Task Force considered measures across a broad spectrum of health care, care settings, and populations, including but not limited to public health, population health, whole-person health (integration of mental, physical, and oral health), pediatrics, oral health, key high-cost high-risk subpopulations, mothers and infants, those with chronic illnesses and foster children. The Task Force also considered areas of health disparities, including racial and ethnic disparities and disparities between rural and urban areas. The selected measures address our state's most significant health priorities, and are aligned as much as possible with national measures and those of other insurers. In addition, because of the large proportion of North Carolina's Medicaid population who are children (approximately 50%), the Task Force sought to identify cross-cutting measures that would be applicable to both pediatric and adult Medicaid beneficiaries.

The Task Force used the framework of the Quadruple Aim in prioritizing and organizing measures. The Quadruple Aim is a widely accepted health system performance framework that focuses on improving population health, enhancing patient experience, lowering health care costs, and improving the experience and work life of health care providers. The Quadruple Aim's primary goal is to optimize health system performance through the simultaneous pursuit of each aim.[3] The Task Force addressed all four aims in developing a set of measures for Medicaid.

In addition to identifying a concise set of metrics for use by North Carolina Medicaid to achieve the Quadruple Aim and drive improvements in population health, the Task Force on Health Care Analytics also identified and discussed several additional factors to be considered when operationalizing the measure set. These factors included risk adjustment, attribution, data collection methodology, performance targets, and ongoing review of data and quality improvement.

Final Selected Measures by the Task Force on Health Care Analytics

Measure Selected by Task Force on Health Care Analytics	Measure Definition/Notes
Improving Population Health	
Population-Level Measures	
Healthy Days	4-question patient survey capturing overall health status and number of days in past 30 when physical or mental health was not good or prevented usual activities.
Live Births Weighing Less Than 2,500 Grams (NQF 1382)	The percentage of births with birthweight <2,500 grams.
Obesity Screening and Follow-Up	1. Weight Assessment and Counseling for Nutrition and Physical Activity for Children/ Adolescents (Ages 3-17 years) (NQF 0024). 2. Body Mass Index (BMI) Screening and Follow-Up (Ages 18 years and older) (NQF 0421).
Infant Mortality	Rate per 1,000 births.
Chlamydia Screening in Women (NQF 0033)	The percentage of women 16–24 years of age who were identified as sexually active and who had at least one test for chlamydia during the measurement year.
Social Determinants of Health	The Task Force selected the following domains for measurement, but did not identify specific screening tools or questions. 1. Food insecurity: limited or uncertain access to adequate and nutritious foods. 2. Housing instability: homelessness, unsafe housing, inability to pay mortgage/rent, frequent housing disruptions, eviction. 3. Transportation: difficulty accessing/affording transportation (medical or public). [3]

Preventive Care	
Immunizations	1. Childhood Immunization Status (NQF 0038): Percentage of children 2 years of age who had four diphtheria, tetanus and acellular pertussis (DtaP); three polio (IPV); one measles, mumps and rubella (MMR); three haemophilus influenza type B (HiB); three hepatitis B (HepB); one chicken pox (VZV); four pneumococcal conjugate (PCV); one hepatitis A (HepA); two or three rotavirus (RV); and two influenza (flu) vaccines by their second birthday. 2. Immunizations for Adolescents (NQF 1407: The percentage of adolescents 13 years of age who had one dose of meningococcal vaccine, one tetanus, diphtheria toxoids and acellular pertussis vaccine (Tdap) vaccine and three doses of human papillomavirus (HPV) vaccine by their 13th birthday.
Well Child Visits	1. Well-Child Visits in the First 15 Months of Life (NQF 1392): The percentage of children 15 months old who had the recommended number of well-child visits with a PCP during their first 15 months of life. 2. Well-Child Visits in the Third, Fourth, Fifth and Sixth Years of Life (NQF 1516): The percentage of children 3-6 years of age who had one or more well-child visits with a PCP during the measurement year. 3. Adolescent Well Care Visits: The percentage of enrolled members 12–21 years of age who had at least one comprehensive well-care visit with a PCP or an OB/GYN practitioner during the measurement year.
Percentage of Eligibles Who Received Preventive Dental Services (CMS)	Percentage of individuals ages 1 to 20 who are enrolled in Medicaid or CHIP Medicaid Expansion programs for at least 90 continuous days, are eligible for Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) services, and who received at least one preventive dental service during the reporting period.
Tobacco Use: Screening and Cessation Intervention (NQF 0028)	Percentage of patients aged 18 years and older who were screened for tobacco use one or more times within 24 months AND who received cessation counseling intervention if identified as a tobacco user.
Screening for Clinical Depression and Follow Up Plan (NQF 0418)	Percentage of patients aged 12 years and older screened for clinical depression on the date of the encounter using an age appropriate standardized depression screening tool AND if positive, a follow-up plan is documented on the date of the positive screen.
Cervical Cancer Screening (NQF 0032)	Percentage of women 21–64 years of age who were screened for cervical cancer using either of the following criteria: 1. Women age 21–64 who had cervical cytology performed every 3 years. 2. Women age 30–64 who had cervical cytology/human papillomavirus (HPV) co-testing performed every 5 years.
Contraceptive Care – Postpartum Women Ages 15-44 (NQF 2902)	Among women ages 15 through 44 who had a live birth, the percentage that is provided: 1. A most effective (i.e., sterilization, implants, intrauterine devices or systems (IUD/IUS)) or moderately (i.e., injectables, oral pills, patch, ring, or diaphragm) effective method of contraception within 3 and 60 days of delivery. 2. A long-acting reversible method of contraception (LARC) within 3 and 60 days of delivery. Two time periods are proposed (i.e., within 3 and within 60 days of delivery) because each reflects important clinical recommendations from the U.S. Centers for Disease Control and Prevention (CDC) and the American College of Obstetricians and Gynecologists (ACOG). The 60-day period reflects ACOG recommendations that women should receive contraceptive care at the 6-week postpartum visit. The 3-day period reflects CDC and ACOG recommendations that the immediate postpartum period (i.e., at delivery, while the woman is in the hospital) is a safe time to provide contraception, which may offer greater convenience to the client and avoid missed opportunities to provide contraceptive care.
Behavioral Health Risk Screening for Pregnant Women	Proportion of women who had at least one prenatal visit who received behavioral health risk screening assessment (for depression, tobacco use, drug use, alcohol use, intimate partner violence). Suggested tool: Community Care of North Carolina Pregnancy Medical Home Risk Screening Form.

Prenatal and Postpartum Care (NQF 1517)	The percentage of deliveries of live births between November 6 of the year prior to the measurement year and November 5 of the measurement year. For these women, the measure assesses the following facets of prenatal and postpartum care: 1. Timeliness of Prenatal Care. The percentage of deliveries that received a prenatal care visit as a member of the organization in the first trimester or within 42 days of enrollment in the organization. 2. Postpartum Care. The percentage of deliveries that had a postpartum visit on or between 21 and 56 days after delivery.
Care of Acute and Chronic Conditions	
Medication Management for People with Asthma (NQF 1799)	The percentage of members 5 to 64 years of age during the measurement year who were identified as having persistent asthma and who were dispensed appropriate medication that they remained on during the treatment period. Two rates are reported: 1. Percent of patients who remained on an asthma controller medication for at least 50% of their treatment period. 2. Percent of patients who remained on an asthma controller medication for at least 75% of their treatment period.
Comprehensive Diabetes Care: HbA1c Poor Control (NQF 0059)	The percentage of patients 18-75 years of age with diabetes (type 1 and type 2) whose most recent HbA1c level during the measurement year was greater than 9.0% (poor control) or was missing a result, or if an HbA1c test was not done during the measurement year.
Controlling High Blood Pressure (NQF 0018)	The percentage of patients 18 to 85 years of age who had a diagnosis of hypertension (HTN) and whose blood pressure (BP) was adequately controlled (<140/90) during the measurement year.
Hospital-Acquired Conditions	The rates of acute care hospitals of the following conditions: 1) Foreign object retained after surgery; 2) Air embolism; 3) Blood incompatability; 4) Falls and traumas; 5) Manifestations of poor glycemic control; 6) Catheter- associated urinary tract infection; 7) Vascular catheter-associated infection; 8) Surgical site infection, mediastinitis, following coronary artery bypass graft (CABG); 9) Surgical site infection following certain orthopedic procedures; 10) Surgical site infection following cardiac implantable electronic device; 11) Deep vein thrombosis/pulmonary embolism following certain orthopedic procedures; 12) Latrogenic pneumothorax with venous catherization.
Use of Opioids at High Dosage (NQF 2940)	The proportion (XX out of 1,000) of individuals without cancer receiving a daily dosage of opioids greater than 120mg morphine equivalent dose (MED) for 90 consecutive days or longer.
Follow Up After Hospitalization for Mental Illness (NQF 0576)	The percentage of discharges for patients 6 years of age and older who were hospitalized for treatment of selected mental illness diagnoses and who had an outpatient visit, an intensive outpatient encounter or partial hospitalization with a mental health practitioner. Two rates are reported: 1. The percentage of discharges for which the patient received follow-up within 30 days of discharge. 2. The percentage of discharges for which the patient received follow-up within 7 days of discharge.
Patient Experience of Care	
Consumer Assessment of Healthcare Providers and Systems (selected key indicators) (NQF 0005)	1. Getting timely care, appointments and information: Percentage of patients who answer “Always” or “Usually” to CG-CAHPS questions on their ability to get urgent care, routine care, or needed information from a physician’s office. 2. How well providers communicate with patients: Percentage of patients who report the highest level of satisfaction (Always or Usually) with their provider’s communication. 3. Access to specialists: The percentage of patients who report the highest level of satisfaction (Always or usually) to the question “In the last 6 months, how often did you get an appointment to see a specialist as soon as you needed?”

Cost and Utilization	
Total Cost of Care Population-based PMPM Index (risk-adjusted index) (NQF 1604)	Total Cost of Care reflects a mix of complicated factors such as patient illness burden, service utilization, and negotiated prices. Total Cost Index (TCI) is a measure of a primary care provider's risk adjusted cost effectiveness at managing the population they care for. TCI includes all costs associated with treating members including professional, facility inpatient and outpatient, pharmacy, lab, radiology, ancillary and behavioral health services. A Total Cost Index when viewed together with the Total Resource Use measure (NQF-endorsed #1598) provides a more complete picture of population based drivers of health care costs.
Inpatient Admission Rate (risk-adjusted index)	Inpatient admissions per 1,000 member months.
Emergency Department Utilization (risk-adjusted index)	This measure is used to assess the risk-adjusted ratio of observed to expected emergency department (ED) visits, for members 18 years of age and older.
Use of Imaging for Low Back Pain (NQF 0052)	The percentage of patients with a primary diagnosis of low back pain who did not have an imaging study (plain X-ray, MRI, CT scan) within 28 days of diagnosis. Assesses low value care.
NTSV Cesarean Delivery (NQF 0471)	This measure assesses the number of nulliparous women with a term, singleton baby in a vertex position delivered by cesarean section.
Workforce Wellbeing	
Job Satisfaction	Percentage of clinicians who respond "Agree" to select indicators of job satisfaction.
Measurement of Burnout	TBD by DHB - Suggested RAND question or Maslach scale.
Overall Satisfaction with the Health Plan	Providers reporting by, "Extremely Satisfied, Satisfied, Dissatisfied, Extremely Dissatisfied."

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Chapter 1: Introduction

The Task Force on Health Care Analytics

In 2016-17, the North Carolina Institute of Medicine (NCIOM) convened a Task Force on Health Care Analytics, at the request of the Division of Health Benefits (DHB) of the North Carolina Department of Health and Human Services, to develop the set of quality metrics that will be used to drive improvement in population health under North Carolina's Medicaid reform plan.

The goals of Medicaid reform are to control cost increases in Medicaid over time, share the risk of Medicaid costs with providers and insurers, and maintain or improve the health of Medicaid beneficiaries. Session Law 2015-245 requires that the new delivery system and managed care contracts are "built on defined measures and goals for risk-adjusted health outcomes, quality of care, patient satisfaction, access, and cost." Furthermore, DHB is tasked to develop "effective measures for outcomes and quality"[a] and to address provider satisfaction. The proposed quality metrics should be used to improve health and health care in North Carolina, both directly through Medicaid administration and indirectly through alignment with Medicare, commercial insurers, and other educational and social services.

Starting in the fall of 2016, NCIOM worked with staff and advisors to the North Carolina Department of Health and Human Services to identify a cross-section of state stakeholders to serve on the Task Force on Health Care Analytics. Members included physicians, nurses, and other health care providers; experts in health care quality measurement; directors of quality improvement initiatives; Medicaid beneficiary and patient representatives; private payers; care managers; and others. Diversity of expertise, experience, and geographic region of the state was a key priority for membership selection. This unique Task Force model allowed for multi-disciplinary and wide stakeholder engagement, enabled robust discussion, and led to a comprehensive and achievable metric set for North Carolina Medicaid.

The Task Force was supported by a multidisciplinary Steering Committee comprised of senior staff from the North Carolina Department of Health and Human Services' Division of Health Benefits, Population Health Partners, the North Carolina Hospital Association, Community Care of North Carolina, and Evolent Health. The Task Force was chaired by Warren Newton, MD, MPH, director of the North Carolina Area Health Education Centers; C. Annette DuBard, MD, MPH, Director of Clinical Strategy, Aledade, Inc., former Chief Health Information Officer, Community Care of North Carolina; and James C. Hunter, MD, Senior Vice President and Chief Medical Officer, Carolinas Health Care System.

The Task Force met six times between December 2016 and May 2017 and critically appraised, evaluated, and prioritized a concise set of quality metrics to be used by North Carolina Medicaid.

Selection of Measures

The Task Force, in most cases, selected measures from existing evidence-based federal and state measurement sets and built on previous work by the North Carolina Division of Medical Assistance (DMA), Division of Mental Health, Developmental Disabilities, and Substance Abuse Services (DMH/DD/SAS), and others to define and prioritize quality measures for North Carolina Medicaid. The Task Force anticipates measures will evolve based on experience and published evidence, and will need to be reviewed and updated on a regular basis. The methodology for measure selection and selected measures are discussed in subsequent chapters of this report.

The Task Force considered measures across a broad spectrum of health care, care settings and populations, including but not limited to public health, population health, whole-person health (integration of mental, oral, and physical health), pediatrics, oral health, key high-cost, high-risk subpopulations, mothers and infants, those with chronic illnesses, and foster children. The Task Force also considered areas of health disparities, including racial and ethnic disparities and disparities between rural and urban

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[a] 2015-245 NC Sess Laws, HB 372 (2015).

areas. The selected measures address our state's most significant health priorities, and are aligned as much as possible with national measures and those of other payers. In addition, because of the large proportion of North Carolina's Medicaid population who are children (approximately 50%)[b], the Task Force sought to identify cross-cutting measures that would be applicable to both pediatric and adult Medicaid beneficiaries.

- The Task Force developed guiding principles to help direct its work:
    - Seek broad participation, including that of patients and families. The Task Force was guided by patient- and person-centered principles that emphasize the perspective of patients in assessing overall quality of care and health system performance. Patient representatives participated in a panel discussion to inform the selection of patient satisfaction measures and were ongoing members of the Task Force, participating in all discussions, surveys, and measure review.
    - Emphasize clinical and public health implications and potential impact.
    - Be informed by experience in other states and at the federal level, as well as by current performance in North Carolina.
    - Focus on primary care: Metrics will both assume and support the components of robust primary care, including first-contact care, whole-person care, continuity of care, and coordination of care.
    - Organize measure selection process and final categorization by the Quadruple Aim: Improving population health, patient experience of care, cost effectiveness and utilization, and workforce well-being.
    - Use data availability and immediate usefulness as guiding criteria: Primary focus on metrics collected through electronic health records (EHRs); align as much as possible with emerging health information exchanges.
    - Focus on transparency: Meetings are open to the public, and recommendations and selected measures are posted publicly. There has been a formal public comment process, and the final version of the proposed metrics will be published in the PubMed-indexed *North Carolina Medical Journal* to facilitate access.
    - Seek balance: Measures should address all components of the Quadruple Aim and include both process and outcome measures; the measure set also should provide a balanced view of state priorities for improving population health.
    - Emphasize parsimony: As underscored by the National Academy of Medicine[1], there is increasing awareness that too many quality measures are distracting and ultimately self-defeating. The Task Force's intent was to emphasize prioritization based on gaps of care, implications for population health, and feasibility of major and rapid improvement.
    - Alignment: Set of measures align with nationally-vetted measures as much as possible, including measures used by Medicare and commercial insurers, in order to reduce burden on health care providers and amplify impact of quality improvement initiatives
    - Reach consensus: Task Force sought broad (though not necessarily unanimous) consensus on selection of measures.
    - Risk adjustment of metrics: The Task Force will explore issue of risk adjustment on the basis of age, sex, and comorbidity as is typically performed, and we will explore risk adjustment based on social determinants of health.
    - Adaptability and ongoing evaluation of measure sets: The Task Force will discuss options for reviewing and updating metrics. New clinical issues and metrics will emerge, and others may need to be retired or modified because they are performing poorly or because clinical outcomes have improved and are stable.[2]

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[b] See Chapter 2.

Quadruple Aim Framework

The Task Force used the framework of the Quadruple Aim in prioritizing and organizing measures. The Quadruple Aim is a widely accepted health system performance framework that focuses on improving population health, enhancing patient experience, lowering health care costs, and improving the experience and work life of health care providers. The Quadruple Aim's primary goal is to optimize health system performance through the simultaneous pursuit of each aim.[3] The Task Force addressed all four aims in developing a set of measures for Medicaid. The measures have been categorized by aim:

- Improving population health: The Task Force examined measures that aim to evaluate health system processes that lead to improved quality of care, improve health outcomes resulting from care, and indicate the overall health of North Carolina's population. The Task Force further divided this category into Population-level Measures, Preventive Care, and Care of Acute and Chronic Conditions.
- Patient experience of care: To improve patients' experience of care, measurement and data are used to develop quality strategies, drive organizational change, and assess the relationships among patients' experience of care, engagement with health care providers, and health outcomes. As described by the Institute for Healthcare Improvement (IHI), the "overall experience of care is best assessed by the patients who receive the care."[4] Elements of care for patient assessment include safety, effectiveness, timeliness, patient-centeredness, and efficiency.[4]
- Cost and utilization: The Task Force also examined measures of cost and utilization and their impact on health outcomes and overall system performance. The Task Force strongly agrees that one primary goal of North Carolina's transition to Medicaid managed care is improvement in total cost and appropriateness of care.
- Workforce wellbeing: The Task Force used available survey tools and resources to identify measures of workforce wellbeing that can drive efforts to improve job satisfaction of the health care workforce, reduce stress and burnout, reduce the burden of measurement for providers, and enhance the capacity of health systems to meet the goals of the other three aims.

Organization of Measures

As mentioned above, the Task Force organized the selection of measures based on the Quadruple Aim framework. The Task Force also identified measures that would apply to specific sub-populations within Medicaid, including children and maternity patients, as well as beneficiaries eligible for both Medicaid and Medicare ("dual-eligibles"), and individuals with high health care needs and costs. These considerations are discussed in detail in Chapter 5. The Task Force identified each relevant sub-population in the listing of measures in Appendix A in order to highlight which measures are applicable to both pediatric and adult Medicaid beneficiaries.

Organization of This Report

This report provides contextual background information on North Carolina Medicaid and examines quality measurement, particularly within the context of Medicaid reform. The report describes the methodology used by the Task Force to prioritize measures and provides context for the organization of the measures by the Quadruple Aim. The report also addresses additional considerations for implementation of measures and proposes a vetting process for the measures, which should be conducted on an ongoing basis.

The report contains an Executive Summary followed by five chapters:

Chapter One: Introduction

Chapter Two: Overview of North Carolina Medicaid

Chapter Three: Background on Quality Measurement

Chapter Four: Development of Proposed Measure Set

Chapter Five: Additional Considerations and Recommendations

Appendices:

Appendix A: Full Listing of Proposed Measures and Specifications

Appendix B: Measure Sets Reviewed by Task Force (Sources):

- Draft set of measures developed by the Division of Medical Assistance (DMA);
- Centers for Medicare and Medicaid Services (CMS) Core Sets (Adult and Child);
- CMS Primary Care Medical Home (PCMH)/Accountable Care Organization (ACO) Consensus Core Set;
- Comprehensive Primary Care (CPC)+ Electronic Health Record Quality Measures;
- Whole System Measures 2.0, Institute for Healthcare Improvement;
- Healthcare Effectiveness Data and Information Set (HEDIS);
- Social determinants of health, as identified by Healthy NC 2020 and Health Leads; and
- Measures of workforce wellbeing from the RAND survey of physicians and qualitative research of additional health care providers and the Provider Satisfaction Survey and the Maslach Inventory, which measures types and scale of professional dissatisfaction, stress, and burnout.

Appendix C: Full Task Force Recommendations Matrix

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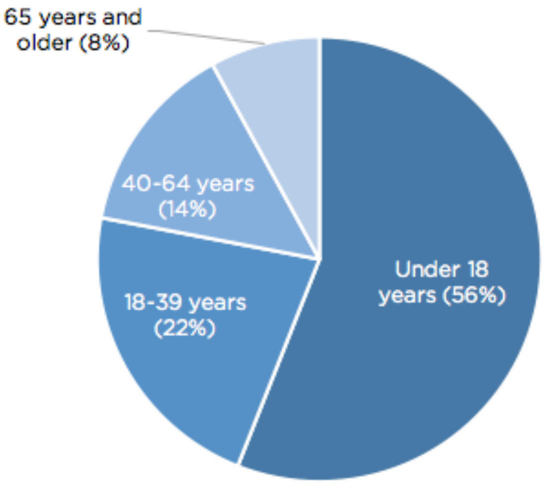
Chapter 2: Overview of North Carolina Medicaid

In North Carolina, Medicaid serves low-income and other vulnerable populations, including children from low-income households, older adults, persons with disabilities, pregnant women, and refugees.[a] In state fiscal year (SFY) 2016, North Carolina's Medicaid program served 1.8 million beneficiaries[d] (approximately 20% of North Carolina's population) each month, making it the 10th largest Medicaid program in the United States.[2] North Carolina Medicaid costs approximately $14 billion annually and is funded primarily by state and federal sources.[b]

As a result of Medicaid reform legislation passed by the North Carolina General Assembly in 2015, significant changes in North Carolina's Medicaid system are anticipated.[c,d] Additional changes are expected if health care reform bills pass at the federal level; the status of federal changes to Medicaid are currently unclear.[e]

Figure 1: Ages of Medicaid Beneficiaries as of July 1, 2016[1]



Source: Sutten T, Borchik R. Running the numbers: an overview of North Carolina Medicaid and Health Choice. N C Med J. 2017;78(1):58-62. (Reprinted with permission from NCMJ)

Enrollment and Eligibility

Medicaid and NC Health Choice (North Carolina's version of the federal Child Health Insurance Program[f]) provide coverage to some—but not all—low-income individuals in the state. Eligibility criteria such as age, disability, and income level (as a percentage of the federal poverty level (FPL)) are used to determine Medicaid eligibility. Medicaid has multiple program aid categories (PACs), each with their own eligibility requirements. Benefits vary by PAC.

Children

More than 50% of NC Medicaid beneficiaries are children. Since 2011, the number of children enrolled in Medicaid has increased by 28% to a monthly average enrollment of 1.04 million. This increase is largely driven by the identification of already eligible children during families' enrollment for marketplace-based insurance.[1] Leading drivers of costs for children in the Medicaid program are pharmacy expenses, physician services, and behavioral health services (through monthly capitation payments).[1] However, children account for only 25% of claims expenditures.

Current Medicaid eligibility for children is limited to:

- 215% of the FPL (annual household income $44,107 for a family of three) for children under age 6.[5]
- 138% of the FPL (annual household income $28,179 for a family of three) for children ages 6 to 18.

Eligibility for children also varies based on foster care status and status of children's parents or guardians.[5]

Adults

Adults eligible for Medicaid include individuals in the aged, blind, and disabled category; pregnant women; some foreign nationals, parents and caretakers of Medicaid-eligible children; individuals with a breast or

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[a] This figure does not include NC Health Choice.
[b] Other funding sources include drug rebates, fraud recoveries, and cost settlements.
[c] Medicaid Expansion/Healthcare Jobs Initiative, S 290, 2017 Session (NC 2017).
[d] Carolina Cares, HR 662, 2017 Session (NC 2017).
[e] Proposed federal legislation would change federal funding for Medicaid to a per capita allotment or block grant funding. This would limit federal liability for the Medicaid program and place more risk on state budgets. With the federal government contributing less, North Carolina would need to decide whether to contribute more to support Medicaid at current levels or reduce spending. The status of federal legislative changes to Medicaid is unclear as of September 2017.
[f] North Carolina Health Choice (NC's version of the Children's Health Insurance Program) provides health coverage to more than 80,000 children per month. These children's household incomes (the eligibility limit is 211% of FPL) are too high to qualify for Medicaid but these families cannot afford private health insurance.

cervical cancer diagnosis; and some individuals who qualify for limited family planning services. Eligible services and utilization patterns vary widely among these groups of adults.[1]

The following categories of adults are eligible for Medicaid:

- Aged, blind, and disabled adults with incomes up to 100% of the FPL. Twenty-one percent of North Carolina Medicaid beneficiaries fall into the category of aged, blind, and disabled. Because individuals in this eligibility category are more likely to use costly services, including skilled nursing, home health care, and personal care services, this category accounts for 60% of claims expenditures.[1] For those in this category who also qualify for Medicare, Medicaid pays Medicare premiums and copayments.[g]
    - Seniors and individuals with disabilities whose incomes fall just above the threshold for Medicaid eligibility can receive assistance from Medicaid with their Medicare premiums. North Carolina's Medicaid program pays the premiums for individuals who qualify for the Medicare Qualified Beneficiaries program aid category.[1]
- Pregnant women with incomes up to 196% of the FPL.[6] For pregnant women, Medicaid covers prenatal services, delivery, and some postpartum care. More than half of all births in North Carolina are paid for by Medicaid, although some are paid by emergency Medicaid rather than Medicaid for pregnant women.[1,h]
- Foreign nationals (refugees and immigrants) within income and resource eligibility criteria. Providers are also reimbursed for some emergency services for undocumented immigrants.
- Parents/caretakers of Medicaid-eligible children (with incomes approximately 40% of the FPL).

Figure 2: Enrollment and Spending by Eligibility Groups, SFY 2016

Eligibility groups	Enrollment[a]	Claims dollars[b] (in millions)	Percent of Medicaid beneficiaries	Percent of claims expenditures[c]
Children	1,038,113	$2,765	54%	25%
Aged, blind, and disabled	414,251	$6,721	21%	60%
Other adult[d]	297,271	$1,217	15%	11%
Health Choice	81,897	$171	4%	2%
Medicare qualified beneficiaries[e]	75,889	$9	4%	0.1%
Pregnant women	17,437	$155	1%	1%
Foreign nationals	12,873	$83	1%	1%
Other claims dollars[f]	------	$60		1%
Totals	**1,937,731**	**$11,182**	**100%**	**100%**

Source. Sutten T, Borchik R. Running the numbers: an overview of North Carolina Medicaid and Health Choice. N C Med J. 2017;78(1):58-62. (Reprinted with permission from NCMJ) Note: SFY, state fiscal year:

a SFY 2016 monthly average enrollment.
b Claims dollars include all claims and premiums paid through NCTracks; it excludes Medicare premiums and nonemergency medical transportation expenses, as well non-claims expenditures, which amount to a substantial budgetary impact but do not tie to individual beneficiaries.
c The claims expenditures that appear in the chart are in reference to the Medicare copays and deductibles available to certain individuals in this eligibility group, which are paid through NC Tracks.
d The other adult group includes parents, family planning beneficiaries, and breast and cervical cancer patients.
e Medicare premiums are not paid through the NCTracks claims system and as such are not included in figure.
fOther claims dollars are those not tied to individual eligibility groups.

Medicaid Beneficiaries with Complex, Chronic Needs

Within the North Carolina Medicaid program, understanding the extent and scope of care and costs for beneficiaries with complex, chronic needs is important. As discussed above, due to the types and extent of care needed, beneficiaries in the aged, blind, and disabled eligibility category make up 21% of beneficiaries

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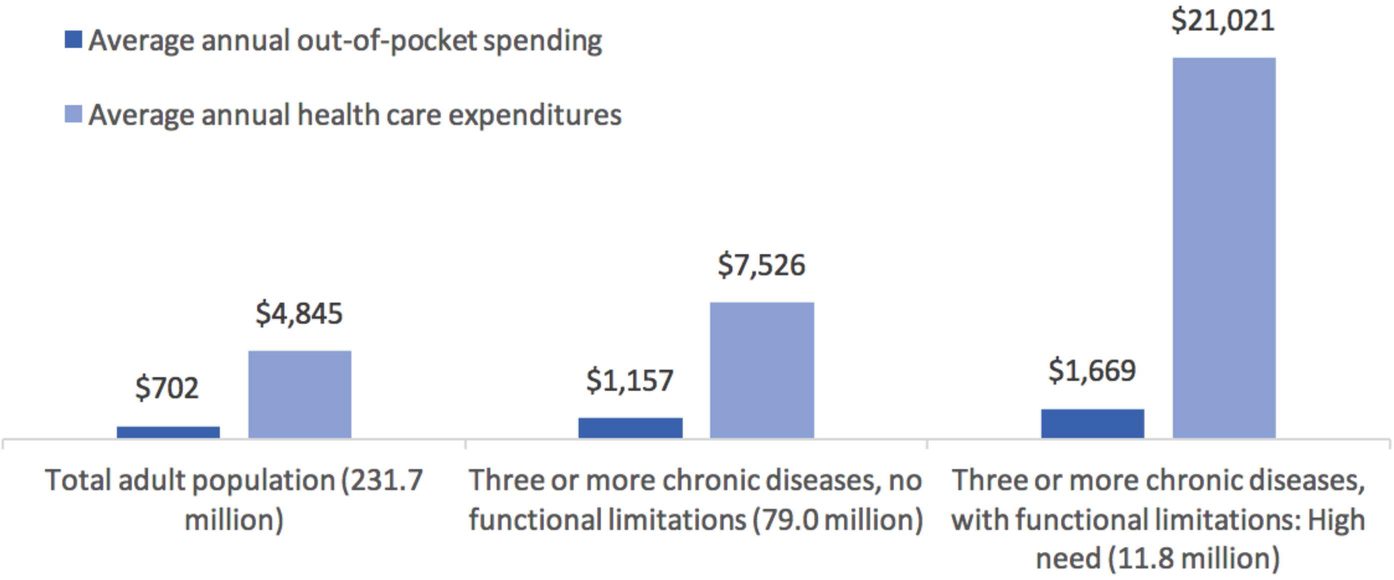
[g] Income eligibility ranges from 100% FPL to 135% FPL based on sub-category and provided Medicare coverage.

[h] There were approximately 66,200 births covered by Medicaid in North Carolina in SFY 2016.

and incur approximately 60% of Medicaid costs.

Many individuals in the aged, blind, and disabled category have three or more chronic diseases; these individuals have higher health care costs than other adults. In addition, certain Medicaid beneficiaries can be designated as "high need," defined as "people who have three or more chronic diseases AND a functional limitation in their ability to care for themselves or perform routine daily tasks."[7] defined as people who have three or more chronic diseases and a functional limitation in their ability to care for themselves or perform routine daily tasks. For these individuals, the utilization and cost of care differs from that of people who do not meet the definition of "high need." The national average yearly spending on health care for "high need" beneficiaries (including services and medications) was nearly three times the average for adults with multiple chronic diseases and no functional limitations, and more than four times the average for all adults.[9]

Figure 3: Spending on Health Care is Highest for Adults with High Needs



Note. Noninstitutionalized civilian population age 18 and older.
Source. Adapted from Hayes SL, Salzberg CA, McCarthy D, Radley DC, Abrams MK, Shah T, and Anderson GF. High-need, high-cost patients: who are they and how do they use health care? Issue Brief (Commonw Fund). 2016;26:1-14.

As North Carolina Medicaid develops reforms to address the quality and cost drivers that impact population health, the Task Force acknowledges the importance of examining how specific care management and payment models tackle the unique challenges of "high need" individuals. However, it was beyond the scope of the Task Force's work to develop specific measures to address quality improvement or costs for high need Medicaid beneficiaries (see chapter 5 for recommendations on additional measure development and review).

Medicaid Reform

In 2015, the North Carolina legislature decided that reform was needed to stabilize costs in the state's Medicaid program. Legislators wanted to move from the uncertain costs of North Carolina's traditional Medicaid program to the more fixed, and thus predictable, costs of a managed care model. In 2015, the North Carolina Medicaid reform bill[i] was signed into law by then-Governor Pat McCrory. This law introduced reforms to North Carolina Medicaid, including a move from a fee-for-service model to a capitated system of prepaid health plans based on a medical home model[j], behavioral health reform, and adjustment of

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[i] 2015-245 NC Session Laws, House Bill 372 (2015).

[j] In a capitated system, provider organizations receive one risk-adjusted payment per enrollee, and providers share in both savings and in responsibility for budget targets. A primary care medical home is defined as, "a model or philosophy of primary care that is patient-centered, comprehensive, team-based, coordinated, accessible, and focused on quality and safety." Agency for Healthcare Research and Quality. Defining the PCMH. AHRQ website. https://www.pcmh.ahrq.gov/page/defining-pcmh. Accessed September 13, 2017. Patient-Centered Primary Care Collaborative. Defining the Medical Home: a patient-centered philosophy that drives primary care excellence. Patient-Centered Primary Care website. https://www.pcpcc.org/about/medical-home. Accessed September 13, 2017.

billable rates. The goal of the Medicaid reform legislation is to control cost increases in Medicaid over time, share the risk of Medicaid costs with providers and insurers, and maintain or improve the health of Medicaid beneficiaries.

The shift from a fee-for-service model to a capitated managed care system represents a significant change for North Carolina's Medicaid program.[k] The legislation provides parameters for the creation of the new system, including calling for the establishment of six Medicaid regions across North Carolina. Care will be provided in these regions by up to 12 provider-led entities and up to 3 statewide managed care organizations (MCOs). Under the legislation, each region will have at least four participating health plans, and eligible beneficiaries will be able to choose which plan to use for their Medicaid coverage.

The legislation also established a new division of the Department of Health and Human Services, the Division of Health Benefits (DHB), tasked with overseeing the implementation of Medicaid reform. Under the legislation, DHB was required to develop and submit a Medicaid reform plan to the federal Centers for Medicare and Medicaid Services (CMS). To amend a state Medicaid program as directed by the legislation, CMS requires submission of a Section 1115 demonstration waiver. DHB submitted the waiver in June of 2016. The waiver is currently under review by CMS.

The 2016 North Carolina Section 1115 Demonstration Application included the following initiatives as strategies to meet the state's goals of improving health care access, quality, and cost efficiency for Medicaid:

- » Build a system of accountability for outcomes;[l]
- » Create person-centered health communities;
- » Support providers through engagement and innovations;
- » Connect children and families in the child welfare system to better health; and
- » Implement capitation and care transformation through payment alignment.

If the 1115 waiver is approved, North Carolina Medicaid will have 18 months to implement the stated reforms.8 While awaiting approval, DHB is moving forward with plans for Medicaid reform, so that the state will be ready if CMS grants approval.

As of August 2017, DHB has released a proposed program design for NC Medicaid managed care. The proposed program design seeks to implement Medicaid managed care, as directed by Session Law 2015-245, "in a way that advances high value care, improves population health, engages and supports providers, and establishes a sustainable program with predictable costs." The proposed program design highlights quality improvement and value-based care as priorities for North Carolina Medicaid.[9] DHB is working with state stakeholders and experts to refine program details prior to the launch of Medicaid managed care in 2019. Please note that while the Task Force discussed many components later addressed in the proposed program design, these discussions were held prior to the release of the proposal and, as such, the proposal did not inform them.

Social Determinants of Health and Medicaid

Because improving population health is one of the key goals of Medicaid reform in North Carolina, understanding the ways in which social and environmental factors, such as income, education level, housing, and access to healthy food, impact health is important. An estimated 60% of preventable deaths are caused by modifiable behaviors and community and environmental factors.[10] For Medicaid beneficiaries, these factors, known as social determinants of health (or, alternately, as "drivers of health" or "unmet social needs"), often play a large role in determining health, well-being, and quality of life.

North Carolina has many existing partnerships that aim to address determinants of health for those in the Medicaid program. Often, little can be done about medical issues unless other factors influencing

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kCurrently North Carolina's Medicaid program uses a managed care system (LME-MCOs) for mental and behavioral health services
l See Chapter 3 for information on quality measurement.

health are addressed. Community Care of North Carolina and other clinically integrated health systems, for example, work with local health departments and local health providers to ensure that Medicaid beneficiaries receiving medical care and care management services also receive additional needed services. Additional services may include assistance with transportation, home visits, and health education, as well as wraparound services such as nutrition counseling, breastfeeding assistance, or smoking cessation resources. Partners may also work to connect patients with other health and human services providers, including social workers, behavioral health providers, or health navigators. [11]

As part of the North Carolina local health department (LHD) accreditation process, all departments are required to complete a Community Health Assessment (CHA) every three years. A collaborative local team leads the CHA by collecting local data about community life, health concerns, and other population health issues, and then combines datasets to identify health challenges and determine community priorities for improvement. The team then develops a report that includes data, priorities, necessary stakeholders, and strategies for action. Between the triennial assessments, the LHDs must produce an annual State-of-the-County's Health report that tracks progress on priority issues identified in the Community Health Assessment, identifies emerging issues, and highlights new initiatives.[12] Under the Affordable Care Act, nonprofit hospitals must also meet four "community benefit" requirements in order to qualify for 501(c)(3) tax exempt status. These requirements include the community health needs assessment described above and a strategy for implementation; a written financial assistance policy for medically necessary and emergency care; compliance with limitations on charges for patients eligible for financial assistance; and compliance with billing and collection requirements. The Secretaries of the Treasury and Health and Human Services annually report information on hospitals' costs and spending related to these requirements to Congress.[13]

Research has shown that effective reforms address both health care quality and improved population health by acknowledging and dealing with determinants of health. In simulations of the effectiveness of potential approaches to improve health in communities, ReThink Health's dynamics model, a simplified representation of a local health system, has estimated that combined investments in delivering higher value care, encouraging healthy behaviors, and improving economic opportunities could reduce health care costs by up to 14%, reduce chronic illness by as much as 20%, and increase workforce productivity by 9% (above where they would otherwise be by 2040).[14] This would require combined investments in clinical and population-level initiatives, coupled with financial agreements that reduce incentives for costly care and reinvest a share of the savings to ensure adequate long-term financing.[m]

There is also increasing research on how investments in social determinants of health impact states' Medicaid costs. More than a dozen states have invested in improved case management for high need patients that includes connecting individuals to resources such as transportation and housing supports. Other states have focused initiatives to address only housing. For example, Massachusetts' Home and Healthy for Good Program houses homeless individuals and provides additional support and resources. The program reduced Medicaid costs for participants by 67% after one year, with an estimated return on investment of $9,118 per person.[16] The economic case also holds true for Medicaid managed care plans; as Medicaid seeks contracts with provider organizations that tie payment to health care quality and cost outcomes through payment models such as capitation or bundled payment, there may be opportunity for the development of incentives for providers to address social determinants that drive health outcomes and cost of care.[16]

Under Medicaid reform, North Carolina has an opportunity to explore ways in which new models of care, payment, and investment strategies may address social determinants of health. CMS offers State Innovation Model (SIM) grants for delivery and payment reforms that focus on population health and recognize the role of social determinants of health in costs and outcomes.[17] CMS also focuses on Accountable Health Communities, Medicaid models that link beneficiaries with community services, by determining how these

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p Newton, Warren. Director, North Carolina Area Health Education Centers. Written (email) communication. July 24, 2017.

communities will impact health care costs and utilization. Recently, CMS developed a 10-item screening tool to identify social and economic needs of patients that can be addressed through additional community resources.[10,18] such as homelessness, inconsistent access to food, and exposure to violence on health and health care utilization, are well-established. Growing evidence indicates that addressing these and other needs can help reverse their damaging health effects, but screening for social needs is not yet standard clinical practice. North Carolina's 1115 Medicaid waiver proposal includes the creation of Person-Centered Health Communities, a model that encourages partnerships between primary care providers and community-based organizations to assess and address social determinants of health.[8] Investments in layered approaches that include both clinical quality improvement and population-based approaches hold great promise for improved population health.

2014 IN

48% of children lived in poor or near-poor homes

AND

22% of children lived in food insecure households

IN NORTH CAROLINA

Compared to individuals with private health insurance, Medicaid beneficiaries (by definition in low-income households) are more likely to experience poor social and environmental factors that impact health.

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Chapter 3: Background on Quality Measurement

North Carolina's Medicaid program has a long history of quality measurement. The program currently collects and reports over 150 quality measures to state and federal agencies.[a] North Carolina's Medicaid program has focused on using quality measurements to drive improvements in the quality of care provided. Under Session Law 2015-245[b], the Division of Health Benefits (DHB) is tasked with developing provider contracts that use defined measures and goals for a set of quality measures across a range of areas as a foundation. DHB charged the Task Force with selecting priority measures for North Carolina Medicaid; however, DHB will determine how the measures will be operationalized within the current Medicaid structure or under Medicaid reform.

Currently, health systems collect and report various quality measures as part of ongoing federal, state, and system quality improvement efforts. Collecting quality measure data allows health systems to quantify the processes, outcomes, and other characteristics that affect quality of care at the practice, provider, and system levels.[1] Currently collected measures will continue to be collected under a reformed Medicaid system. However, under Medicaid reform, DHB and the NC Department of Health Human Services (DHHS) will use the smaller set of measures identified by this Task Force to focus attention on areas of care that are critical to improving population health. As North Carolina moves to a Medicaid managed care system, the set of quality metrics will be used to drive improvement in Medicaid beneficiaries' health and well-being, through a combination of clinical quality improvement strategies and population-level health improvement strategies at state and local levels.

Quality Measurement to Drive Improvement in Health

Quality improvement initiatives for health care generally consist of key guiding principles, including that initiatives work at both the health delivery system and process level (i.e., what is done and how it is done), emphasize patient-centered care, and prioritize team integration and use of data. Goals of such initiatives may encompass not only improved patient and population health, but also improved efficiency, reduced costs (particularly costs associated with system failures, errors, and poor outcomes), improved system communication, and productive culture change.[2]

The Centers for Medicare and Medicaid Services (CMS) develops quality measures at the federal level for use in quality improvement and related reporting programs for health care providers. Data on these measures are reported through a variety of sources, including claims, patient and provider-reported data, provider chart data (including electronic medical records), and population-level registries.[1]

Quality measures generally fall into one of three categories: structure, process, or outcome. Structural measures address a health system's capacity and features related to providing care; examples include the use of electronic medical records, number of providers, qualifications of providers, or patient/provider ratio. Process measures address what a provider or health system does to improve the health of their patients; examples include generally accepted recommendations for clinical practice, such as patients receiving preventive services or patients receiving standard care for chronic conditions including diabetes. Most quality measures currently reported by health systems are process measures. Outcome measures address patient or population outcomes, including the impact of health care services on a patient or population. These measures may include rates of complications or adverse events, for example, rates of infants born at low birth weight.[3] Because structural measures would be regulated by overall health system governance and through the management of Medicaid, the Task Force selected only process and outcome measures for inclusion in the final measure set proposed to DHB, and sought a balance between these two types of measures for the selected set.

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a CareAnalyzer DMA Medicaid HEDIS Reporting Measures With Trends for 2014 – 2016. Pennington, Terri. Nurse Manager, BIO Analytical Studies, Division of Medical Assistance, Business Information Office, North Carolina Department of Health and Human Services. Written (email) communication. June 1, 2017.

b 2015-245 NC Sess Laws, HB 372 (2015).

Quality reporting can increase the administrative burden of providers. According to a recent survey released by the Weill Cornell Medical College and Medical Group Management Association, a physician spends an average of 15.1 hours per week on administration of quality measurement.[4] The administration of quality measurement includes tracking measure specifications, developing and implementing data collection processes, entering information into the medical record, and collecting and transmitting data. Most of the time was dedicated to "entering information into the medical record ONLY for the purpose of reporting for quality measures from external entities." This time translates to an average cost of $40,069 per physician per year. In addition, 81% of respondents said that, compared to three years ago, the effort they spent on quality measures was increasing, and 46% stated that dealing with measures that were similar to each other but not identical was a significant burden.[4] As such, health policy researchers and policymakers have emphasized the need for more concise, parsimonious sets of measures that are aligned across measure stewards and have similar reporting requirements when at all possible.[c] Throughout the measure prioritization process, the Task Force maintained the importance of parsimony when identifying measures and developing quality improvement strategies.

Building a System of Accountability for Outcomes

Quality Measurement by Medicaid in North Carolina

Currently, North Carolina Medicaid voluntarily reports data on the CMS core adult and core child measures.[d] North Carolina Medicaid also voluntarily reports data on the Healthcare Effectiveness Data and Information Set (HEDIS) measures, using other state Medicaid MCO plans as benchmarks. Many of these measures are collected from Medicaid claims and are dependent on the accuracy of claims data in NCTracks, the electronic claims payment system used by North Carolina's Medicaid program.[e] NC Medicaid also administers the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey for adults and children to inform the reporting of CMS core measures on access to care and other components of patient experience.[f]

Additionally, North Carolina's Medicaid reform legislation[g] identifies measure sets developed by the National Committee for Quality Assurance and the Physician Consortium for Performance Improvement as potential sources for vetted, appropriate quality measures to be used by DHB.

In 2015, in preparation for pending legislation from the North Carolina General Assembly to reform Medicaid, the Division of Medical Assistance (DMA) convened a group of stakeholders to assess and discuss clinical quality measurement. The group reviewed several relevant measure sets, identified principles for measure selection and additional considerations for implementation, and developed a draft measure set focused on alignment across measure sets and payers. The stakeholders identified the need for consistent standards to assess quality of care, and examined existing models from other states for identifying and implementing quality measurement and payment reform initiatives. In addition, the group identified evaluation criteria for measure selection and considerations for the implementation and development of measurement and reporting infrastructure. The 2015 draft measure set includes 34 measures.[5,h]

Community Care of North Carolina

In North Carolina, Community Care of North Carolina (CCNC) manages regional networks of providers and community organizations, which provide primary care and multidisciplinary care management to Medicaid beneficiaries. CCNC aims to provide cross-setting disease management and medical homes for the Medicaid population, and to target change at system, provider, and person levels.[6] CCNC's health care provider network, present in all North Carolina counties, partners with local health providers, including hospitals,

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[c] See Chapter 4 for additional information on Task Force consideration of administrative burden.

[d] Aee Appendix B for full set of CMS child core and adult core measures.

[e] NCTracks is used by providers to submit claims for payment of health care services covered by the Division of Medical Assistance, Division of Mental Health/Developmental Disabilities/Substance Abuse Services, and the Division of Public Health. NCTracks processes claims for around 70,000 enrolled providers.

[f] See chapter 4 for additional information on CAHPS and survey results from NC Medicaid beneficiaries

[g] 2015-245 NC Sess Lawes, HB 372 (2015).

[h] See Appendix B.

health departments, social services providers, community-based organizations, and behavioral health and substance use treatment providers to develop interdisciplinary managed care for beneficiaries.[7]

CCNC is a national leader in using quality measurement as a tool to inform and drive quality improvement and improve health outcomes for North Carolina's Medicaid population. CCNC's regional networks work to implement quality improvement and quality measurement initiatives, and reports data on key performance indicators and quality measures. These indicators measure overall performance of CCNC's Primary Care Case Management program, pediatric care, maternal health care, and behavioral health care through claims and chart review measures. CCNC measures a total of 41 performance indicators, including 15 pediatric, 12 maternal health, and 3 behavioral health. Overall, CCNC performs well on measures of chronic disease management and most pediatric measures, including well-child visit rates, developmental screenings, and annual dental visits. CCNC has also reported favorable trends for utilization and cost measures, including total monthly spend, emergency department visits, inpatient admissions, and potentially preventable readmissions.[6]

Overall, the Task Force built on the work of many North Carolina stakeholders in identifying and prioritizing quality measures for use by North Carolina Medicaid. Using the Quadruple Aim as a framework (improving population health, improving patient experience of care, addressing health care costs, and improving health care provider experience), the Task Force developed a concise set of measures which will inform the development of quality improvement strategies and priorities for North Carolina Medicaid.

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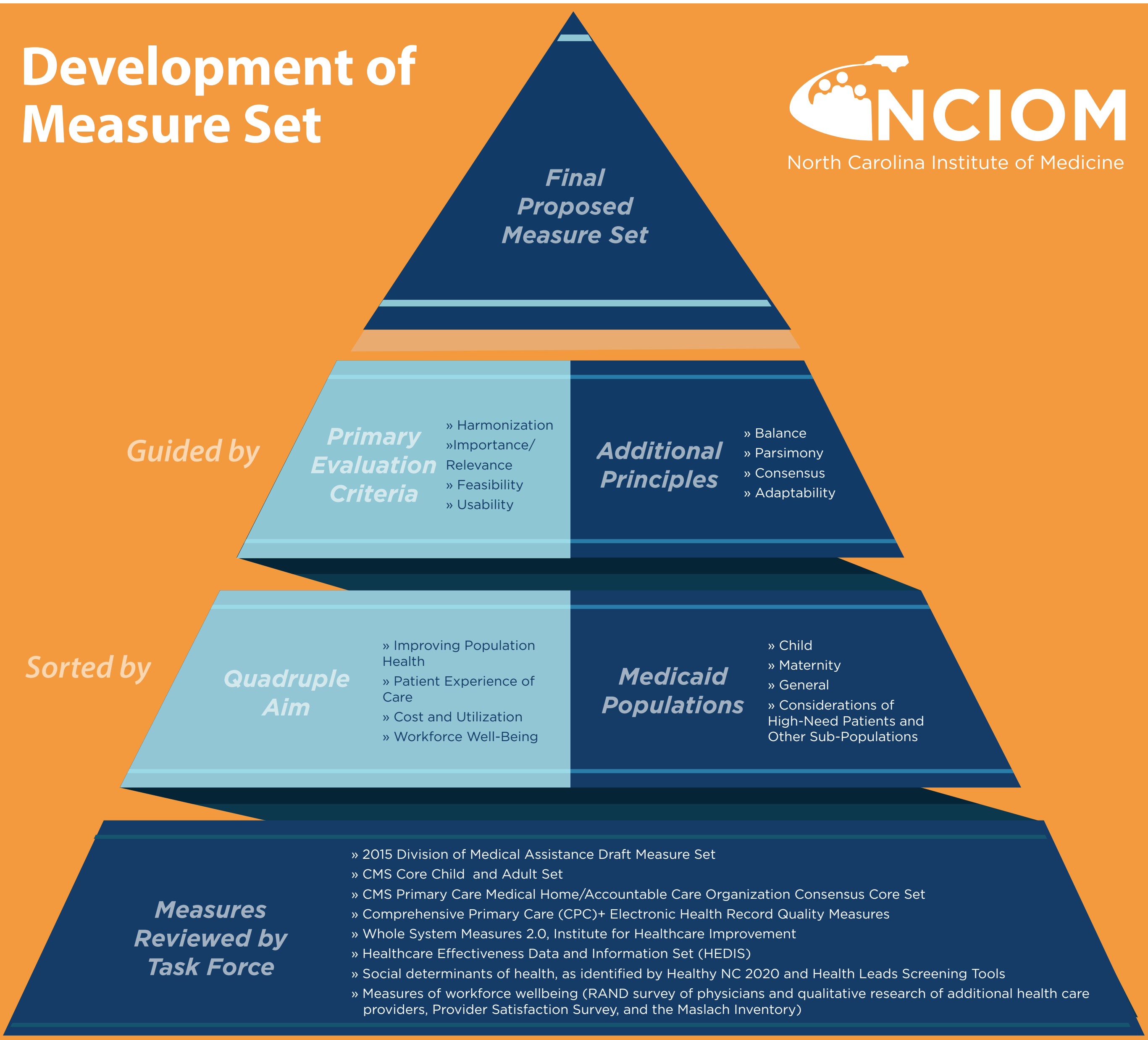
Chapter 4: Development of Proposed Measure Set

Starting in the fall of 2016, the North Carolina Institute of Medicine worked with staff and advisors to the North Carolina Department of Health and Human Services to identity a cross-section of state stakeholders to serve on a Task Force and provide expert input for the selection of the measure set for the Division of Health Benefits (DHB). Task Force members included physicians, nurses, and other health care providers; experts in health care quality measurement; Medicaid beneficiary and patient representatives; private payers; care managers; and others. Diversity of expertise, experience, and region of state was a key priority for membership selection.

Development of Measure Set

NCIOM
North Carolina Institute of Medicine



Final Proposed Measure Set

Guided by

Primary Evaluation Criteria
- » Harmonization
- »Importance/ Relevance
- » Feasibility
- » Usability

Additional Principles
- » Balance
- » Parsimony
- » Consensus
- » Adaptability

Sorted by

Quadruple Aim
- » Improving Population Health
- » Patient Experience of Care
- » Cost and Utilization
- » Workforce Well-Being

Medicaid Populations
- » Child
- » Maternity
- » General
- » Considerations of High-Need Patients and Other Sub-Populations

Measures Reviewed by Task Force
- » 2015 Division of Medical Assistance Draft Measure Set
- » CMS Core Child and Adult Set
- » CMS Primary Care Medical Home/Accountable Care Organization Consensus Core Set
- » Comprehensive Primary Care (CPC)+ Electronic Health Record Quality Measures
- » Whole System Measures 2.0, Institute for Healthcare Improvement
- » Healthcare Effectiveness Data and Information Set (HEDIS)
- » Social determinants of health, as identified by Healthy NC 2020 and Health Leads Screening Tools
- » Measures of workforce wellbeing (RAND survey of physicians and qualitative research of additional health care providers, Provider Satisfaction Survey, and the Maslach Inventory)

Additional Considerations

(See more in Chapter 5)

Risk Adjustment
Attribution
Performance Targets and Language of Measurement
Data Collection/Sharing
Ongoing Measure/Data Development and Review

Overview of Task Force Process and Measure Selection

Reflecting the size and diversity of patients covered by Medicaid, the Task Force considered measures across a broad spectrum of health care, care settings, and populations, including but not limited to: public health; population health; whole-person health (integration of mental and physical); pediatrics; oral health; key high-cost, high-risk subpopulations; mothers and infants; those with chronic illnesses; foster children; and areas of health disparities, including between rural and urban areas. Using the Quadruple Aim as a framework (improving population health, improving patient experience of care, addressing health care costs, and improving health care provider experience), the Task Force identified current measures applicable to each aim and selected, defined, and prioritized a set of recommended measures across these areas. In addition, to the extent possible, the Task Force reviewed current state and federal performance on measures.

Overall, the Task Force reviewed more than 300 unique measures over the course of the selection process.

The Task Force used the following criteria to identify measures for consideration and approval:

» Harmonization: Consistency with existing measures; measures have been federally endorsed and have existing performance benchmarks; align with measures for other settings and populations, and for other insurers/payers, including Medicare and commercial insurers.

» Importance/Relevance: Measures have shown to drive quality improvement in actual care settings; align with evidence-based or evidence-informed practices; focus on areas in which there is significant variation in, or less than optimal, performance and will make significant gains in health care quality (burden of suffering: morbidity/mortality/cost).

» Feasibility: Measures support future alignment across payers; will be supported by existing EHR or other reporting systems; data can be captured without undue burden; focus on logistics of data collection; align as much as possible with emerging health information exchanges.

» Usability: Measure results can be used for accountability and performance improvement to achieve higher quality care.

In addition, the Task Force considered measures of specific care processes and/or outcomes, and measures that will have relevance to a broad range of health services.

Additional considerations by the Task Force included:

» Balance: Measures should address all components of the Quadruple Aim and include both process and outcome measures; the measure set also should provide a balanced view of state priorities for improving population health.

» Parsimony: As underscored by the National Academy of Medicine[1], there is increasing awareness that too many quality measures are distracting and ultimately self-defeating. The Task Force intent was to emphasize prioritization based on gaps of care, implications for population health, and feasibility of major and rapid improvement.

» Consensus: Task Force sought broad (though not necessarily unanimous) consensus on selection of measures.

» Adaptability: Metrics will need to be updated regularly. New clinical issues and metrics will emerge, and others may need to be retired or modified because they are performing poorly or because clinical outcomes have improved and are stable.

NCIOM staff worked with the Steering Committee to determine which existing measures met the above criteria and should be presented to the Task Force for discussion. The Steering Committee identified the following measure sets for review:[a]

» Draft set of measures developed by the Division of Medical Assistance (DMA). (The Task Force

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[a] Listed in Appendix B

began with an examination of measures that had already been vetted by the Division of Medical Assistance in 2015, as part of the 1115 waiver development process. In preparation for pending legislation to reform Medicaid, DMA convened a group of stakeholders to assess and discuss clinical quality measurement. The group reviewed several relevant measure sets, identified principles for measure selection and additional considerations for implementation, and developed a draft measure set focused on alignment across sets and payers.)

- Centers for Medicare and Medicaid Services (CMS) Core Sets (Adult and Child).
- CMS Primary Care Medical Home (PCMH)/Accountable Care Organization (ACO) Consensus Core Set.
- Comprehensive Primary Care (CPC) + Electronic Health Record Quality Measures.
- Whole System Measures 2.0, Institute for Healthcare Improvement.
- Healthcare Effectiveness Data and Information Set (HEDIS).
- Social determinants of health, as identified by Healthy NC 2020 and Health Leads.
- Measures of workforce wellbeing from the RAND survey of physicians and qualitative research of additional health care providers, the Provider Satisfaction Survey, and the Maslach Inventory, which measures types and scale of professional dissatisfaction, stress, and burnout.

The measure selection process included presentations by content experts, who provided context and background information on quality measurement, use of measures by other states and health systems, demographic information on North Carolina Medicaid beneficiaries, performance benchmarks and goals, and other topics as needed. Following context-setting and discussion, the Task Force prioritized measures by Medicaid population category (defined generally by the Steering Committee as child, adult, and maternity) and by the Quadruple Aim.

Starting with the January 2017 meeting, the Steering Committee divided the scope of work and assigned different components of the selection process to each Task Force meeting:

- January: Quality measures for children; population health measures.
- February: Quality measures for maternity; patient experience of care measures.
- March: Quality measures (general); provider engagement and satisfaction measures (subsequently recategorized as “Workforce Wellbeing”); cost/utilization measures.
- April: Review of selected measures; using measures to address high need patients; review and discussion of additional considerations for implementation of quality measurement.
- May: Review of draft measure set and additional revision; discussion of measures of social determinants of health; measures of workforce wellbeing; discussion of balance between process/outcomes measures; ongoing measure vetting/selection process.

Approximately 10 days prior to each meeting, NCIOM staff developed and distributed a survey tool (using Qualtrics) to members of the Task Force. This survey presented all identified measures in the corresponding categories and asked Task Force members to rate each measure on a 5-point Likert scale (5 being high score), using the evaluation criteria listed above to inform the rating. Task Force members also received a background document to guide their responses; the document included measure definition, specifications (including numerator/denominator), measure set alignment, incidence of disease/condition, and other rationale where applicable, as well as federal/state/Medicaid-specific data where available.

NCIOM staff sorted survey responses by mean scores and created a reference document to inform meeting discussion. This document highlighted top-rated responses and sorted responses by proposed domain. NCIOM staff also created a discussion guide specific to each domain to drive decision making and prioritization of the measures by the Task Force.

At each meeting, the Task Force members, following a context-setting overview presentation, divided into groups of approximately 10-12 members to discuss measures. A NCIOM staffer and a member of the Steering Committee facilitated each group.

Groups were instructed to review discussion session goals, discuss top-rated measures, and recommend two or three selected measures to the large group for inclusion in the final measure set. Groups were asked to identify the following: whether the results of pre-meeting surveys captured the measures that will best drive improvements in health outcomes and quality, what other information may be needed, potential problems with the measure (including data collection, benchmark performance, etc.), whether there is another measure that would capture information more accurately, and whether any measures that did not receive top ratings should be re-evaluated by the group. Following small group discussion, each group reported their selected priority measures and other key discussion points. NCIOM staff tracked the measures reported by each group and sorted the list by the number of groups that selected each measure.

Using the Quadruple Aim to Drive the Measure Selection Process

Originally developed in 2008 by Don Berwick and other leaders at the Institute for Healthcare Improvement, the “Triple Aim”—a guiding framework for health systems to improve population health, improve patient experience of care, and reduce health care costs—has been broadly adopted by health care organizations, health systems, public health entities, and other health care stakeholders.[2,3] In recent years, the framework has been expanded to include an additional aim, to improve the working life and satisfaction of the health care workforce.[4] The Task Force on Health Care Analytics used this new “Quadruple Aim,” as the framework is now known, to guide the selection of performance and population health metrics for use by North Carolina Medicaid. The following sections identify the four pieces of the Quadruple Aim, as related to the measures selected by the Task Force.

Improving Population Health

Improving the health of all North Carolinians is a priority of the state and of the Task Force. Within the Quadruple Aim framework, distinguishing between factors that influence health at the level of the health system (traditional quality measures) and factors that influence health at the population level is imperative. The Task Force examined measures that aim to evaluate health system processes that, above all, reflect the overall health of the population while leading to improved quality of care and identifying health outcomes resulting from care.

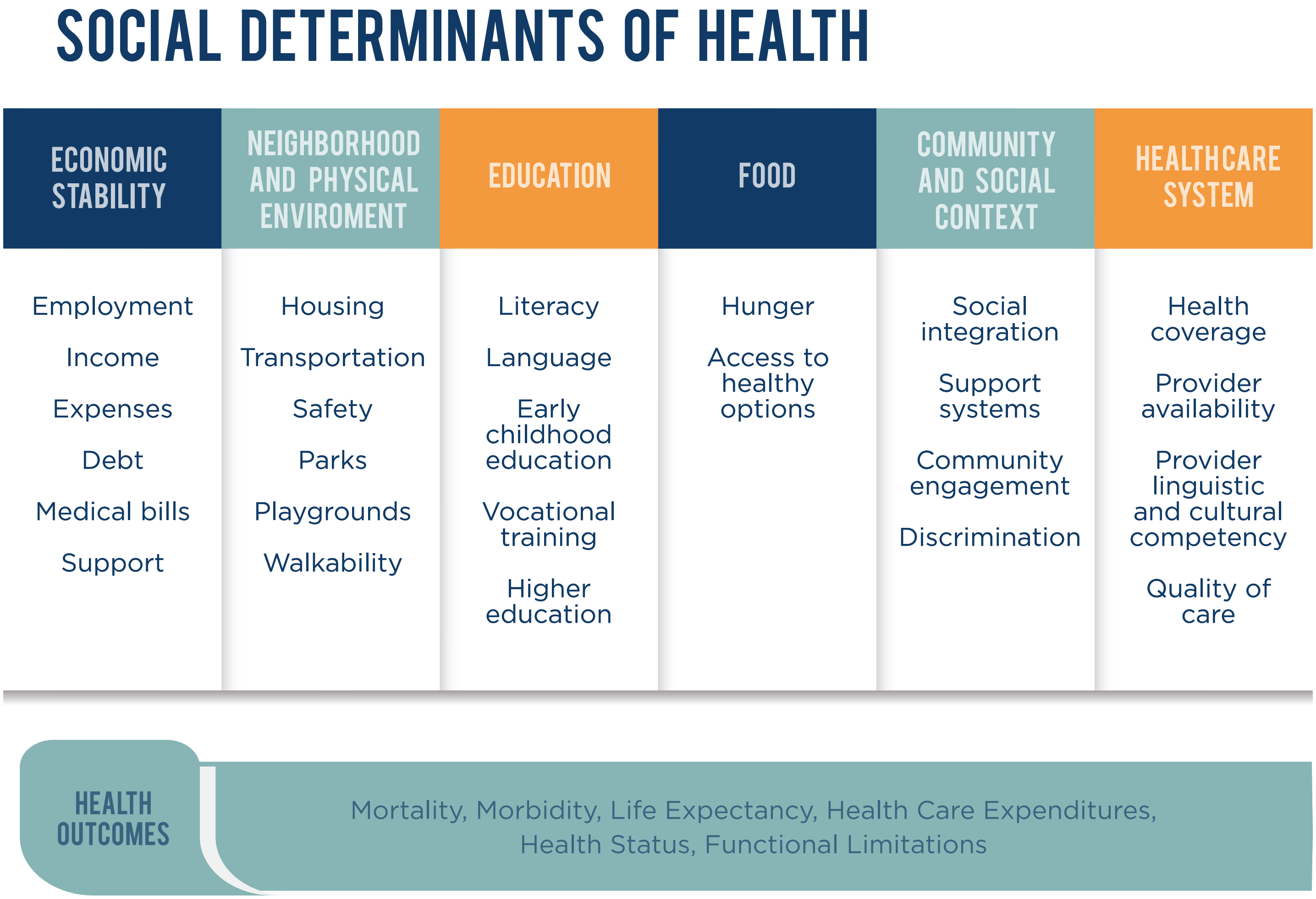
The Task Force reviewed and identified priority measures for improving population health. The reviewed sets categorized measures of population health improvement across several domains, including preventive care, care for acute and chronic conditions, maternity care, behavioral health, and experience of care.

The Task Force reviewed process measures, such as screening for behavioral risk factors or indicators of adequate disease management, as well as outcome measures, including mortality rates, health status, and disease burden. Given the increasing awareness of social determinants of health, the Task Force also included measures of social determinants of health currently under development. Measures intended to inform the improvement of population health were divided into two categories: population-level indicators of health (including social determinants of health) and health system performance measures (further subdivided by preventive care and care for acute and chronic conditions measures that can drive population health).

Population-Level Measures and Social Determinants of Health

North Carolina currently ranks 32nd in overall population health.[5] While the state performs well on some population health indicators, such as childhood immunization rates, North Carolina has poor overall health outcomes and performs poorly on many social factors that impact health. Factors such as education, income and poverty, and neighborhood features, known as social determinants of health, have a substantial influence on health.[6] Particularly as North Carolina implements reforms to Medicaid, including new payment and care models, the state has an opportunity to address social determinants of health and thus improve health outcomes and lower health care costs for Medicaid.

Figure 2: Impact of Social Determinants on Health Outcomes



SOCIAL DETERMINANTS OF HEALTH

ECONOMIC STABILITY	NEIGHBORHOOD AND PHYSICAL ENVIROMENT	EDUCATION	FOOD	COMMUNITY AND SOCIAL CONTEXT	HEALTHCARE SYSTEM
Employment Income Expenses Debt Medical bills Support	Housing Transportation Safety Parks Playgrounds Walkability	Literacy Language Early childhood education Vocational training Higher education	Hunger Access to healthy options	Social integration Support systems Community engagement Discrimination	Health coverage Provider availability Provider linguistic and cultural competency Quality of care

HEALTH OUTCOMES	Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

Source: http://www.kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity

North Carolina currently measures population health indicators and social determinants of health in an attempt to drive improvement in these factors and thus improve health. In 2011, the North Carolina Institute of Medicine, in collaboration with the Governor's Task Force for Healthy North Carolinians and the North Carolina Department of Health and Human Services (Division of Public Health, Office of Healthy Carolinians and Health Education, and the State Center for Health Statistics), issued Healthy NC 2020, a plan for population health improvement. Healthy NC 2020 aims to achieve improvement across several categories of health and has identified several social determinants of health as priorities.

Measures of social determinants of health are still in developmental stages, as there are a lack of vetted and endorsed measures at the federal level. However, the Task Force identified screening tools and collection mechanisms used by health systems and other state Medicaid agencies to guide the selection of measures of social determinants of health.

Figure 3: Healthy NC 2020: Social Determinants of Health[7]

	Baseline	Current	Target
Decrease the percentage of individuals living in poverty	16.9% (2009)	16.4% (2015)	12.5%
Increase the 4-year high school graduation rate	71.8% (2008-09)	85.9% (2015-16)	94.6%
Decrease the percentage of people spending more than 30% of their income on rental housing	41.8% (2008)	44.9% (2015)	36.1%

Health Leads, a health care organization, partners with health care organizations to create social needs interventions to address social determinants of health.[8] Health Leads' Social Needs Screening Toolkit, first published in 2016, presents recommendations for screening patients to determine their social needs.[9] The social enterprise developed screening criteria, including measures recommended for inclusion in electronic health records, using guidelines from the Institute of Medicine and CMS. Health Leads divided categories of social determinants of health into essential and optional domains: essential domains include food insecurity, housing instability, utility needs, financial resource strain, transportation, and exposure to violence; optional domains include childcare, education, employment, health behaviors, social isolation and supports, and behavioral/mental health.

Health Leads partnered with providers, including Massachusetts General Hospital, Kaiser Permanente, Boston Medical Center, Johns Hopkins, and NYC Health & Hospitals Corporation, to implement screening for social determinants of health and address patients' social needs.

While no state Medicaid programs are currently using the Health Leads screening tools, many are collecting data on social determinants of health, including those in Kansas, Massachusetts, Michigan, New York, Oregon, Tennessee, Washington and Vermont.[10] Because standardized, consistent measures have not yet been developed or adopted, data collection and use varies by state. Collection mechanisms include health risk assessments by managed care organizations, member surveys (such as CAHPS), surveillance data, claims data, and population-level surveys.[10] States use data to inform provider quality improvement, assess the impact of social determinants on medical expenses, set provider reimbursement rates, and develop care management strategies.[10]

Additional considerations for measuring social determinants of health:

» The Task Force recognizes that, due to the developmental nature of measurement, measures of social determinants of health are not currently sufficient as performance measures for health systems. While the Task Force selected priority areas of social determinants of health to include in the proposed set of measures, the Task Force did not recommend ways for the state to operationalize the collection of this data.

» The Task Force acknowledges the progress made by the state in advancing population health and emphasizes the importance of measuring social determinants of health in maintaining progress and driving further improvements.

» The Task Force acknowledges the administrative barriers of implementing screening tools for social determinants of health at the provider level and the need to ensure that providers have sufficient resources to support patients with significant social needs.

» Particularly in the absence of standardized measures, the Task Force emphasizes the need for consistent data collection methodology and increased interoperability of data systems across state agencies (including state and local social services, education, and local health departments). Medicaid should consider utilization of ICD and CPT coding of social determinants to ensure more reliable and consistent data collection and reporting.

- The Task Force emphasizes the need for a consistent screening process at set intervals, as respondents' status (income level, neighborhood, etc.) may change.

North Carolina and the Task Force on Health Care Analytics acknowledge the significant impact that social determinants of health have on the health of our state, and the Task Force prioritized several measures of social determinants for inclusion in the measure set for Medicaid.

Final Selected Measures of Improving Population Health (Population Level Measures):

Measure name: Healthy Days

Measure name: Live Births Weighing Less than 2,500 grams

Measure name: Weight Assessment and Counseling for Nutrition and Physical Activity for Children/ Adolescents

Measure Name: Body Mass Index Screening and Follow Up (Age 18 and Older)

Measure name: Infant Mortality

Measure name: Chlamydia Screening in Women

Measure name: Social Determinants of Health: Food Insecurity

Measure name: Social Determinants of Health: Housing Instability

Measure name: Social Determinants of Health: Transportation

Improving Population Health Within Health Systems

While much of an individual's health is impacted by broad societal factors, it is also important to capture data at the health system level on how/whether the health system is providing quality care that improves health outcomes. The Task Force examined several sets of measures developed at the federal level to capture data on measures of health system performance intended to drive improvement in quality of care and health outcomes. The Task Force also identified which data is currently being collected by Medicaid, examined current performance in North Carolina, and prioritized opportunities for maintaining and improving performance.

The measures selected by the Task Force for Improving Population Health Within Health Systems are, generally, process measures that indicate what providers/systems are doing in order to improve or maintain the health of their patients and reflect widely accepted recommendations for clinical practice. In addition, these measures may help to inform patients about care they should expect to receive in order to maintain their health and/or manage chronic illnesses.[11] For this category, the Task Force focused their prioritization on importance/relevance criteria and selected measures that would best indicate quality improvement in actual care settings, align with evidence-based or evidence-informed practices, reflect significant variation in or less than optimal performance, and will make significant gains in health care quality (burden of suffering: morbidity/mortality/cost).

Final Selected Measures of Improving Population Health Within Health Systems (Preventive Care and Care of Acute and Chronic Conditions)[b]

Preventive Care:

Measure name: Childhood Immunization Status

Measure name: Immunizations for Adolescents

Measure name: Well-Child Visits in First 15 Months of Life

Measure name: Well-Child Visits in the Third, Fourth, Fifth, Sixth Years of Life

Measure name: Adolescent Well Care Visits

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[b] The Task Force identified the categories of Preventive Care and Care of Acute and Chronic Conditions as appropriate sub-divisions of the selected measures

Measure name: Percentage of Eligibles Who Received Preventive Dental Services

Measure name: Tobacco Use: Screening and Cessation Intervention

Measure name: Screening for Clinical Depression and Follow Up Plan

Measure name: Cervical Cancer Screening

Measure name: Contraceptive Care – Postpartum Women Ages 15-44

Measure name: Behavioral Health Risk Screening for Pregnant Women

Measure name: Prenatal and Postpartum Care

Care of Acute and Chronic Conditions:

Measure name: Medication Management for People with Asthma

Measure name: Comprehensive Diabetes Care: HbA1c poor control

Measure name: Controlling High Blood Pressure

Measure name: Hospital-Acquired Conditions

Measure name: Use of Opioids at High Dosage

Measure name: Follow Up After Hospitalization for Mental Illness

Patient Experience of Care

A key approach to improving patients' experience of care is to use measurement and data to develop quality strategies, drive organizational change, and assess the relationships among patients' experience of care, engagement with health care providers, and health outcomes. Measurement of patient-level experiences, as well as measures of engagement with the health care system, can be used to assess progress and provide feedback to clinicians and organizations. Measurement of patient experience of care may also inform organizational efforts to improve health outcomes, reduce costs, and improve provider satisfaction.[12]

As described by IHI, the "overall experience of care is best assessed by the patients who receive the care."2 Elements of care for patient assessment include safety, effectiveness, timeliness, patient-centeredness, and efficiency.[4] The Task Force considered several tools widely used to assess patients' experience of their care, including the Consumer Assessment of Healthcare Providers and Systems Clinician and Group Survey (CG-CAHPS, one of a family of CAHPS surveys used to assess patient experience with care), the Patient Activation Measure (PAM), and additional measures identified by the Institute for Healthcare Improvement's Whole System Measures 2.0 initiative.

CG-CAHPS is a standardized survey tool with questions for patients regarding their experiences with primary or specialty care in an ambulatory care setting. Surveys are administered to patients ages 18 and older, or to parents or guardians of patients under 18. CG-CAHPS topic areas include timeliness of care, communication between patients and providers, access to specialty care, health behavior promotion, and shared decision making.[c,13] This survey is the source of patient experience measures for many federally vetted measure sets, including the CMS Medicaid Adult Core Measure Set, the CMS Medicaid Child Core Measure Set, the CMS/AHIP Consensus Core Set for Accountable Care Organizations and Primary Care Medical Homes, and the Medicare Shared Savings Program.[13]

In North Carolina, the Department of Health and Human Services has contracted with the University of North Carolina-Charlotte to field the CG-CAHPS survey to collect data from a representative sample of adult Medicaid beneficiaries on their perceptions of access to care, satisfaction with care, and utilization, as well as on their perceived health status. In 2012, the sample consisted of 148,140 adults enrolled in CCNC managed

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[c] "Shared decision making" is defined as "a process in which clinicians and patients work together to make decisions and select tests, treatments and care plans based on clinical evidence that balances risks and expected outcomes with patient preferences and values." Source: https://www.healthit.gov/sites/default/files/nlc_shared_decision_making_fact_sheet.pdf

care (exclusions included individuals covered under Medicaid for Pregnant Women, recipients who were institutionalized or received Adult Home Care Services, and those enrolled in NC Health Choice). Overall, most (76.2% reporting "always" or "usually") believed they had access to needed care, and most were satisfied with their care. Nearly three-quarters (74.6%) of respondents reporting attempts to receive specialist appointments responded that it was "always" or "usually" easy to do so. In addition, nearly 80% of respondents reported obtaining a new or refill prescription in the past 6 months; 3 out of 4 respondents reported at least one emergency room visit in the past 6 months, and nearly 1 in 3 "sometimes" or "never" received transportation assistance when they needed it.[14]

North Carolina Medicaid, using a vendor and protocol approved by the National Committee for Quality Assurance, also fields the CAHPS survey with child Medicaid beneficiaries. In 2015, 90% of respondents reported "always" or "usually" on the composite measure of "Getting Care Quickly," and 95% reported "always" or "usually" on "How Well Doctors Communicate." Ninety percent of respondents provided a positive response ("always" or "usually") to the composite measure, "Getting Needed Care." More than three-quarters (77%) of respondents asked about access to specialized services (those identified as having a chronic condition) reported positively on questions about access to specialized services.[15]

In Whole System Measures 2.0, an IHI working group consisting of health system leaders, payers, professional organizations, and other experts considered additional measures around individuals' experience of health care. These included questions that address issues of social and emotional support and unmet health care needs (as related to cost of care).[16]

Overall, the Task Force selected measures of patient experience of care that captured priority areas of improvement for health systems – timeliness of care, access to care, and appropriate and useful communication between patients and health care providers.

Additional considerations for measuring patient experience of care:

- The Task Force is mindful of the burden of data collection and of the ways a focus on data collection may create an environment that disengages patients. The Task Force identifies disengagement as a potential unintended consequence of measurement and data collection, and again emphasizes the importance of a parsimonious set of measures to ease provider burden.
- The Task Force has identified emerging work on "whole health"[d] and the importance of identifying patients' personal health goals, and encourages exploration of measures in this area, particularly as they relate to behavioral health integration and new models of care.
- The Task Force identified the principles of human-centered design for additional consideration when implementing the proposed set of measures. Human-centered design is an approach that, when applied to health care, includes patients' input in the development of solutions that aim to improve quality and experience of care.[17]

Final selected measures of Patient Experience of Care:

Measure name: Getting timely care, appointments, and information/Getting care quickly

Measure name: How well providers communicate with patients

Measure name: Access to specialists

Cost, Utilization, and Low Value Care

The Task Force also examined measures of cost and utilization and their impact on health outcomes and

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[d] "Whole health" is defined by SAMHSHA as having a healthy mind and body, as well as the skills and resources to self-manage health and wellness. SAMHSA-HRSA Center for Integrated Health Solutions. WHAM: Whole Health Action Management. Peer Support Training Participant Guide. SAMHSA-HRSA Center for Integrated Health Solutions website. http://www.integration.samhsa.gov/health-wellness/wham/WHAM_Participant_Guide_April_2015.pdf. Accessed June 28, 2017.

overall system performance. The Task Force strongly agrees that one primary goal of North Carolina's transition to Medicaid managed care is improvement in total cost of care. Improving the total cost of care must be accomplished as part of (rather than in isolation from) the remainder of the Quadruple Aim, balancing quality, safety, and patient and provider experience with the overall sustainability of the Medicaid program.

While measurement of cost and utilization may seem more straightforward than measurement of health system processes or patients' experience of care, many factors can complicate these measurements. Challenges include lack of pricing and payment transparency, changing payment models, costs from many fragmented sources (different providers, costs covered by insurance vs. out of pocket costs, etc.), and the need for a defined population for whom to measure costs.[2, 3]

Additional considerations for measuring cost, utilization, and low value care:

While the Task Force endorses the inclusion of an appropriately risk-adjusted total cost of care measure within the final set, the following concerns must be addressed as the measure is operationalized for reporting and/or payment purposes:

- Reporting on total cost of care must align as much as possible in both scope and format with existing total cost of care measurement. The Medicare program's Quality and Resource Use Reports, provided at the taxpayer ID level, provide one example of how to present both cost and quality performance and allow interpretation of total cost of care within the Quadruple Aim context.
- Should DHB decide to either publicly report or include total cost of care measures in developing payment models, we must be exceptionally mindful of the potential for population-level adverse selection.[f] Plans should not be inappropriately rewarded or inappropriately punished by caring for either the healthiest or the most health-challenged members of our Medicaid population.
- The Task Force believes that to truly impact total cost of care, North Carolina's Medicaid managed care program must meaningfully incentivize plans to address social determinants of health. As intervening on social determinants has not been a primary focus of fee for service models, plans may need to invest in numerous innovative programs in order to find those that can most efficiently impact health outcomes. The Task Force urges DHB to be mindful in the use of the total cost of care metric, to avoid incentivizing limitation of services and/or payment cuts to providers (to artificially drive down costs in the short-term) over investment in innovation around social determinants interventions that will yield significant returns on both cost and health outcomes in the long-term.

Final selected measures of Cost, Utilization, and Low Value Care:

Measure name: Total Cost of Care Population-based PMPM Index (risk-adjusted Index)

Measure name: Inpatient Admission Rate (risk-adjusted index)

Measure name: Emergency Department Utilization (risk-adjusted index)

Measure name: Use of Imaging for Low Back Pain

Measure name: NTSV Cesarean Delivery

Workforce Wellbeing

As described above, a fourth aim has recently been included in the quality improvement framework, making it now appropriately titled, the "Quadruple Aim." The Task Force reached a consensus on the phrase "Workforce Wellbeing" to describe this aim. As used in this report, "workforce" is defined as the full spectrum of the health care workforce, including physicians, nurses, frontline staff, and others. Currently, this

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[f] For example, plans or providers "cherry-picking" or systematically avoiding certain sub-populations, or penalizing certain regional plans with inherent demographic challenges that may not be fully addressed in the risk-adjustment algorithm.

aim has the least developed and tested available measures. The Task Force used available survey tools and resources to identify measures of workforce wellbeing that can drive efforts to improve job satisfaction of the health care workforce, reduce stress and burnout, and enhance the capacity of health systems to meet goals of the other three aims.

Researchers have identified many aspects of workforce experience that have an impact on providers' job satisfaction and ability to provide care. These aspects of workforce experience include rising expectations of health care providers and a lack of resources to meet these expectations, given the increased focus on the ways in which social and environmental factors affect population health (as discussed earlier in this chapter). In addition, new models of care and payment present challenges to workforce wellbeing, as providers spend more time on administrative tasks, non-face-to-face activities, and managing electronic health records.[4]

Many of these expectations and shifting tasks have also led to symptoms of burnout among health care providers. Forty-six percent of U.S. physicians report burnout symptoms (symptoms include lack of enthusiasm for work, cynicism, and feelings of low personal accomplishment),4improving population health, and reducing costs-is widely accepted as a compass to optimize health system performance. Yet physicians and other members of the health care workforce report widespread burnout and dissatisfaction. Burnout is associated with lower patient satisfaction, reduced health outcomes, and it may increase costs. Burnout thus imperils the Triple Aim. This article recommends that the Triple Aim be expanded to a Quadruple Aim, adding the goal of improving the work life of health care providers, including clinicians and staff.[4]

Additional factors affecting workforce satisfaction include perceptions of professional autonomy, practice leadership, fairness and respect, quantity and pace of work, work content, financial concerns, and regulatory concerns.[17]

Degree of provider satisfaction may also be impacted by the quality of care provided and thus the resulting health outcomes. In a 2013 study, RAND researchers reported that physicians reported higher satisfaction when they also perceived themselves as providing better care or their practices as facilitating better care delivery. Practice features (such as unsupportive leadership) or payer issues (such as refusal to cover provided services) could be obstacles to providing quality care and thus lead to reduced provider satisfaction.17 Practices and health systems that focus on supporting high-quality care can improve both patient health outcomes and workforce satisfaction and wellbeing.

In North Carolina, Medicaid conducts an annual 29-question survey of providers participating in the 1915(b)/(c) Medicaid Waiver program. The Provider Satisfaction Survey assesses provider experiences with working with the Local Management Entities/Managed Care Organizations (LME/MCOs) in order to inform improvement and determine if the State and health plans are meeting providers' needs. The survey assesses the LME/MCOs' ability to meet needs in three areas: interacting with network providers, providing training and support to providers, and providing Medicaid waiver materials to help providers strengthen their practice.[18]

The Task Force examined measures of workforce wellbeing from the RAND survey of physicians and qualitative research of additional health care providers and the Provider Satisfaction Survey (both described above), the Institute for Healthcare Improvement's Whole System Measures 2.0, and the Maslach Inventory, which measures types and scale of professional dissatisfaction, stress, and burnout.

Measures selected for inclusion in the Medicaid set focused on general job satisfaction, level of burnout, provider experience with managed care or other care models, and ability of practice/provider to meet patient needs.

Additional considerations for measuring workforce wellbeing:

- » The Task Force emphasizes the importance of broadening the scope of provider surveys and measures of workforce wellbeing to include additional health care staff and multiple levels of influence (i.e., practice level, system level).

- Taking into account questions of feasibility of data collection for measures not included in existing measurement sets or tools, the Task Force recommends the Medicaid survey of providers be expanded to include the workforce wellbeing measures identified in this report.
- While out of scope of this Task Force, the Task Force emphasizes the importance of reviewing workforce mix and supply, and workforce disparities by geographic region, when addressing workforce wellbeing.
- The Task Force envisions precedent-setting by Medicaid in this area, analogous to Medicaid's influence on the broad uptake of child development screening, originally conducted only with Medicaid beneficiaries, by additional providers and payers.
- The Task Force again emphasizes the importance of a parsimonious set of measures to ease provider burden.

Final selected measures of Workforce Wellbeing:

Measure name: Job Satisfaction

Measure name: Measurement of Provider Burnout (to be determined by DHB - suggested RAND question or Maslach Inventory)

Measure name: Overall Satisfaction with the Health Plan

Figure 4: Final Selected Measure Set by the Task Force on Health Care Analytics

Measure Selected by Task Force on Health Care Analytics	Measure Definition/Notes
Improving Population Health	
Population-Level Measures	
Healthy Days	4-question patient survey capturing overall health status and number of days in past 30 when physical or mental health was not good or prevented usual activities.
Live Births Weighing Less Than 2,500 Grams (NQF 1382)	The percentage of births with birthweight <2,500 grams.
Obesity Screening and Follow-Up	1. Weight Assessment and Counseling for Nutrition and Physical Activity for Children/Adolescents (Ages 3-17 years) (NQF 0024). 2. Body Mass Index (BMI) Screening and Follow-Up (Ages 18 years and older) (NQF 0421).
Infant Mortality	Rate per 1,000 births.
Chlamydia Screening in Women (NQF 0033)	The percentage of women 16–24 years of age who were identified as sexually active and who had at least one test for chlamydia during the measurement year.
Social Determinants of Health	The Task Force selected the following domains for measurement, but did not identify specific screening tools or questions. 1. Food insecurity: limited or uncertain access to adequate and nutritious foods. 2. Housing instability: homelessness, unsafe housing, inability to pay mortgage/rent, frequent housing disruptions, eviction. 3. Transportation: difficulty accessing/affording transportation (medical or public). [3]

Preventive Care	
Immunizations	1. Childhood Immunization Status (NQF 0038): Percentage of children 2 years of age who had four diphtheria, tetanus and acellular pertussis (DtaP); three polio (IPV); one measles, mumps and rubella (MMR); three haemophilus influenza type B (HiB); three hepatitis B (HepB); one chicken pox (VZV); four pneumococcal conjugate (PCV); one hepatitis A (HepA); two or three rotavirus (RV); and two influenza (flu) vaccines by their second birthday. 2. Immunizations for Adolescents: The percentage of adolescents 13 years of age who had one dose of meningococcal vaccine, one tetanus, diphtheria toxoids and acellular pertussis vaccine (Tdap) vaccine and three doses of human papillomavirus (HPV) vaccine by their 13th birthday.
Well-Child Visits	1. Well-Child Visits in the First 15 Months of Life (NQF 1392): The percentage of children 15 months old who had the recommended number of well-child visits with a PCP during their first 15 months of life. 2. Well-Child Visits in the Third, Fourth, Fifth and Sixth Years of Life (NQF 1516): The percentage of children 3-6 years of age who had one or more well-child visits with a PCP during the measurement year. 3. Adolescent Well Care Visits: The percentage of enrolled members 12–21 years of age who had at least one comprehensive well-care visit with a PCP or an OB/GYN practitioner during the measurement year.
Percentage of Eligibles Who Received Preventive Dental Services (CMS)	Percentage of individuals ages 1 to 20 who are enrolled in Medicaid or CHIP Medicaid Expansion programs for at least 90 continuous days, are eligible for Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) services, and who received at least one preventive dental service during the reporting period.
Tobacco Use: Screening and Cessation Intervention (NQF 0028)	Percentage of patients aged 18 years and older who were screened for tobacco use one or more times within 24 months AND who received cessation counseling intervention if identified as a tobacco user.
Screening for Clinical Depression and Follow Up Plan (NQF 0418)	Percentage of patients aged 12 years and older screened for clinical depression on the date of the encounter using an age appropriate standardized depression screening tool AND if positive, a follow-up plan is documented on the date of the positive screen.
Cervical Cancer Screening (NQF 0032)	Percentage of women 21–64 years of age who were screened for cervical cancer using either of the following criteria: 1. Women age 21–64 who had cervical cytology performed every 3 years. 2. Women age 30–64 who had cervical cytology/human papillomavirus (HPV) co-testing performed every 5 years.
Contraceptive Care – Postpartum Women Ages 15-44 (NQF 2902)	Among women ages 15 through 44 who had a live birth, the percentage that is provided: 1. A most effective (i.e., sterilization, implants, intrauterine devices or systems [IUD/IUS]) or moderately (i.e., injectables, oral pills, patch, ring, or diaphragm) effective method of contraception within 3 and 60 days of delivery. 2. A long-acting reversible method of contraception (LARC) within 3 and 60 days of delivery. Two time periods are proposed (i.e., within 3 and within 60 days of delivery) because each reflects important clinical recommendations from the U.S. Centers for Disease Control and Prevention (CDC) and the American College of Obstetricians and Gynecologists (ACOG). The 60-day period reflects ACOG recommendations that women should receive contraceptive care at the 6-week postpartum visit. The 3-day period reflects CDC and ACOG recommendations that the immediate postpartum period (i.e., at delivery, while the woman is in the hospital) is a safe time to provide contraception, which may offer greater convenience to the client and avoid missed opportunities to provide contraceptive care.
Behavioral Health Risk Screening for Pregnant Women	Proportion of women who had at least one prenatal visit who received behavioral health risk screening assessment (for depression, tobacco use, drug use, alcohol use, intimate partner violence). Suggested tool: Community Care of North Carolina Pregnancy Medical Home Risk Screening Form.

Prenatal and Postpartum Care (NQF 1517)	The percentage of deliveries of live births between November 6 of the year prior to the measurement year and November 5 of the measurement year. For these women, the measure assesses the following facets of prenatal and postpartum care: 1. Timeliness of Prenatal Care. The percentage of deliveries that received a prenatal care visit as a member of the organization in the first trimester or within 42 days of enrollment in the organization. 2. Postpartum Care. The percentage of deliveries that had a postpartum visit on or between 21 and 56 days after delivery.
Care of Acute and Chronic Conditions	
Medication Management for People with Asthma (NQF 1799)	The percentage of members 5 to 64 years of age during the measurement year who were identified as having persistent asthma and who were dispensed appropriate medication that they remained on during the treatment period. Two rates are reported: 1. Percent of patients who remained on an asthma controller medication for at least 50% of their treatment period. 2. Percent of patients who remained on an asthma controller medication for at least 75% of their treatment period.
Comprehensive Diabetes Care: HbA1c Poor Control (NQF 0059)	The percentage of patients 18-75 years of age with diabetes (type 1 and type 2) whose most recent HbA1c level during the measurement year was greater than 9.0% (poor control) or was missing a result, or if an HbA1c test was not done during the measurement year.
Controlling High Blood Pressure (NQF 0018)	The percentage of patients 18 to 85 years of age who had a diagnosis of hypertension (HTN) and whose blood pressure (BP) was adequately controlled (<140/90) during the measurement year.
Hospital-Acquired Conditions	The rates of acute care hospitals of the following conditions: 1) Foreign object retained after surgery; 2) Air embolism; 3) Blood incompatibility; 4) Falls and traumas; 5) Manifestations of poor glycemic control; 6) Catheter-associated urinary tract infection; 7) Vascular catheter-associated infection; 8) Surgical site infection, mediastinitis, following coronary artery bypass graft (CABG); 9) Surgical site infection following certain orthopedic procedures; 10) Surgical site infection following cardiac implantable electronic device; 11) Deep vein thrombosis/pulmonary embolism following certain orthopedic procedures; 12) Latrogenic pneumothorax with venous catherization.
Use of Opioids at High Dosage (NQF 2940)	The proportion (XX out of 1,000) of individuals without cancer receiving a daily dosage of opioids greater than 120mg morphine equivalent dose (MED) for 90 consecutive days or longer.
Follow Up After Hospitalization for Mental Illness (NQF 0576)	The percentage of discharges for patients 6 years of age and older who were hospitalized for treatment of selected mental illness diagnoses and who had an outpatient visit, an intensive outpatient encounter, or partial hospitalization with a mental health practitioner. Two rates are reported: 1. The percentage of discharges for which the patient received follow-up within 30 days of discharge. 2. The percentage of discharges for which the patient received follow-up within 7 days of discharge.
Patient Experience of Care	
Consumer Assessment of Healthcare Providers and Systems (selected key indicators) (NQF 0005)	1. Getting timely care, appointments, and information: Percentage of patients who answer “Always” or “Usually” to CG-CAHPS questions on their ability to get urgent care, routine care, or needed information from a physician’s office. 2. How well providers communicate with patients: Percentage of patients who report the highest level of satisfaction (Always or Usually) with their provider’s communication. 3. Access to specialists: The percentage of patients who report the highest level of satisfaction (Always or Usually) to the question “In the last 6 months, how often did you get an appointment to see a specialist as soon as you needed?”

Cost and Utilization	
Total Cost of Care Population-based PMPM Index (risk-adjusted index) (NQF 1604)	Total Cost of Care reflects a mix of complicated factors such as patient illness burden, service utilization, and negotiated prices. Total Cost Index (TCI) is a measure of a primary care provider's risk adjusted cost effectiveness at managing the population they care for. TCI includes all costs associated with treating members, including professional, facility inpatient and outpatient, pharmacy, lab, radiology, ancillary and behavioral health services. A Total Cost Index when viewed together with the Total Resource Use measure (NQF-endorsed #1598) provides a more complete picture of population based drivers of health care costs.
Inpatient Admission Rate (risk-adjusted index)	Inpatient admissions per 1,000 member months.
Emergency Department Utilization (risk-adjusted index)	This measure is used to assess the risk-adjusted ratio of observed to expected emergency department (ED) visits for members 18 years of age and older.
Use of Imaging for Low Back Pain (NQF 0052)	The percentage of patients with a primary diagnosis of low back pain who did not have an imaging study (plain X-ray, MRI, CT scan) within 28 days of diagnosis. Assesses low value care.
NTSV Cesarean Delivery (NQF 0471)	This measure assesses the number of nulliparous women with a term, singleton baby in a vertex position delivered by cesarean section.
Workforce Wellbeing	
Job Satisfaction	Percentage of clinicians who respond “Agree” to select indicators of job satisfaction.
Measurement of Burnout	TBD by DHB - Suggested RAND question or Maslach scale.
Overall Satisfaction with the Health Plan	Providers reporting by, “Extremely Satisfied, Satisfied, Dissatisfied, Extremely Dissatisfied.”

Using the process described in this chapter, the Task Force identified measures applicable to each component of the Quadruple Aim, and prioritized the concise set of measures listed above to be used to drive improvements in care and health outcomes. The Task Force recommends:

> **Recommendation 4.1: In order to drive improvements in population health under North Carolina's Medicaid reform plan, the North Carolina Department of Health and Human Services, Division of Health Benefits, should adopt the measures recommended by the Task Force and use the measures and relevant performance data to inform development of quality improvement strategies.**

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Chapter 5: Additional Considerations and Recommendations

In addition to identifying a concise set of metrics for use by North Carolina Medicaid to achieve the Quadruple Aim and drive improvements in population health, the Task Force on Health Care Analytics also identified and discussed several additional factors to be considered when operationalizing the measures.

Risk Adjustment

Risk adjustment, when used for health care quality measurement, is a "statistical method that allows for comparison of outcomes when patient populations differ."[1] Risk adjustment can be used to control for many factors that may affect health outcomes, including insurance status, health status or diagnosis, or social determinants of health, and generally seeks to answer how performance would compare (between health systems or providers) if they had the same mix of patients.[2] Risk adjustment is often used to assess whether a provider or health system's outcomes may be partly determined by the populations they serve (i.e., organizations that serve vulnerable populations may have poorer outcomes due to inequitable conditions), and any evaluation of performance or quality of care should take these factors into account.

Risk adjustment is most commonly used for measures of cost of care and utilization of care. These adjustments account for differences in demographic characteristics and health status. However, use of risk adjustment to make comparisons across payers and plans, between geographical locations, and over time, lacks a consistent application. Recently, the Centers for Medicare and Medicaid Services (CMS) has participated in pilot programs with the National Quality Forum to evaluate incorporation of sociodemographic characteristics into risk adjustment models in order to balance patient and family perspectives when developing strategies for quality improvement and to better identify areas of disparities between health systems.[2] Research also suggests that quality improvement initiatives that build on the use of both non-adjusted data, to identify disparities in quality and outcomes, and adjusted data, to inform incentives (as well as discourage discrimination based on incentive structures) and other resource distribution, will be most effective and equitable.[1, 2]

The Task Force recommends:

> **Recommendation 5.1: State stakeholders (including Department of Health and Human Services/Division of Health Benefits, payers, and health systems) should develop and implement a standard risk adjustment methodology, to be applied across care settings and locations (including at the level of primary care panel), as well as pre- and post-Medicaid reform. This methodology should address use of both adjusted and non-adjusted data to meet data needs and incorporate socioeconomic factors and other data on social determinants of health, particularly as these inform statewide quality improvement initiatives.**

Attribution

The Task Force considered how issues of attribution impact quality measurement and improvement. Attribution is defined by the National Quality Forum as "the method used to determine which accountable unit is responsible for a patient's care and cost."[2] In practice, attribution is used to assign individual patients (and their quality outcomes) to providers or health provider organizations.[3] Principles used to address the challenges of attribution include: ensuring fair and accurate assignment of accountability; informing the development and implementation of quality measures; transparency and consistency of the application of attribution models; and the regular review of attribution models.[3] Any development of attribution models must recognize the multiple organizations and individuals involved in health care delivery, and acknowledge shared responsibility for quality of care and health outcomes.

Task Force members identified several considerations related to attribution, including multiple levels of influence on patient care and outcomes and the ways that various entities' responsibilities overlap. The Task Force also discussed the distinctions between types of attribution, such as enrollment in health plans or practice (i.e., patients' choice of provider), and commonly used methodologies such as retrospective attribution (in which patients are assigned at the end of the year, based on use of services during performance year) or prospective attribution (assigning patients based on use of services in previous year).[4]

The Task Force identified several state models of common approaches to attribution across Medicaid managed care organizations and studied how they are being used. Arizona and New Mexico both use automatic and mandatory enrollment as their attribution model. The Arizona Health Care Cost Containment System is that state's Medicaid agency, and it operates on a mandatory basis statewide, enrolling all beneficiaries in mandatory managed care (with some carve outs and exceptions for specific sub-populations of beneficiaries, including American Indians and children in foster care).[6] New Mexico also requires mandatory enrollment. Medicaid beneficiaries are required to enroll in Centennial Care, the managed care program established in 2014. Under Centennial Care, New Mexico Medicaid contracts with six managed care plans.[7]

In North Carolina, Medicaid beneficiaries select a primary care medical home.[a] For attribution, key to this is the selection of a practice (rather than an individual physician or clinician) as primary care medical home; it is the practices which provide services, improve access to care, and manage chronic disease. If a beneficiary does not select a medical home, they are assigned a medical home based on a specific methodology that involves their physical address and history of medical home care. Under Medicaid reform, this will be the continued model, with beneficiaries grandfathered into their medical homes. Prepaid health plans will follow a similar model: beneficiaries will choose or be assigned based on patterns of care.

Current Medicaid beneficiaries who receive care through primary care case management (PCCM) also have their choice of health care practice; there is not an attribution model of mandatory enrollment. The PCCM-model managed care structure currently ensures active recipient enrollment with a participating primary care provider (PCP). Recipients have a choice of PCP, or are auto-enrolled if no choice is made. This is far favorable to retrospective or prospective patient attribution methodologies (from both the patient's and the provider's point of view). The Task Force identified this type of patient choice at the practice level as an integral component of a successful model of attribution.[b]

In addition, the Task Force discussed community accountability, the idea that performance-based incentives and penalties should relate to broader population-based outcomes. As part of a federal Department of Health and Human Services initiative aimed at improving value and quality in health care, work groups run by the Health Care Payment and Learning Action Network identified shared patient attribution as a necessary component of population-based payment models, and are working toward determining how these approaches can be used to drive population-based payment reforms and improve health.5 In addition, some communities are utilizing tiered sets of quality incentives, by which practices benefit if other practices in their communities show improvement on quality metrics.

The Task Force recommends:

> **Recommendation 5.2: The North Carolina Department of Health and Human Services, through Medicaid, should develop and implement a common and universal model of patient attribution across Medicaid managed care organizations. This model must acknowledge multiple levels of influence on patients' care and outcomes, account for data sharing when possible, and encourage transparency and patient choice.**

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[a] Primary care medical home is defined as, "a model or philosophy of primary care that is patient-centered, comprehensive, team-based, coordinated, accessible, and focused on quality and safety." https://www.pcmh.ahrq.gov/page/defining-pcmh; https://www.pcpcc.org/about/medical-home

[b] Written email communication, Annette DuBard, Community Care of North Carolina, June 20, 2017.

Performance Targets and Language of Measurement

In prioritizing the quality measures, the Task Force discussed how providers, health systems, and state Medicaid can establish and use performance targets to inform quality improvement strategies and define success in improving health. Targets for performance, or benchmarks, can be used to identify areas in which a provider or health system is performing well, areas that need improvement, and help systems refine priorities for reaching improvement goals.

Performance targets may be based on reaching an established performance goal or on improving on a baseline measurement. Stakeholders can determine internal benchmarks at the provider, practice, and/or system level, or use external benchmarks such as state or federal mean scores or percentile targets. Stakeholders can also use a combination of these. Data collected for performance targets can be used to allocate resources toward ongoing improvement or incentivizing performance. In some programs, performance goals are further specified by weighting certain measure domains more than others (e.g., 75% for clinical measures, 25% for patient experience measures).[8]

Most states determine goals based on national benchmarks when they exist (e.g., HEDIS 75th or 90th percentile) and/or by improvement. For measures that do not have a national benchmark, or for which performance is below a benchmark, and measures with large regional variation, a target for improvement may be most logical. Historically, North Carolina has used benchmarks greater than mean performance. The Task Force prioritized measures that would allow Medicaid to improve performance relative to either the target or baseline measurement, using the first year of measure reporting to establish baselines and define improvement thresholds.[8]

Systems can also use specific language to define the level of applicability for various measures. For instance, targets that reference “population outcomes” may apply to population-level quality of life conditions; “population indicators” may reference the class of measures that tell if population level conditions are improving; and “performance measures” may reference the class of measures that indicate performance by providers or practices, in state agencies, and within health systems.

The Task Force recommends:

> **Recommendation 5.3: North Carolina Department of Health and Human Services/Medicaid should identify specific performance targets and consistent measurement language and definitions to inform quality improvement at the provider, practice, system, and population level. Following establishment of baseline performance, targets may be informed by mean performance on the indicator or by percentiles (Task Force recommends the 90th percentile) at the local, state, or federal level. Such targets may be implemented in phases or incrementally with pre-determined timelines and should be adjusted as performance at both the state and federal levels improve. Target setting may be informed by current/recent benchmarks and statewide variation in performance. Performance targets should also align with those of commercial insurers, where possible, to increase sustainability of data collection and long-term improvement in population health.**

Data Collection and Data Sharing

The Task Force discussed several considerations related to performance measure data collection and sharing. As discussed in Chapter 4, both providers and health systems, particularly smaller providers or practices, are concerned about the administrative and cost burden of data collection and reporting on quality measures, and reporting on multiple quality measures to different entities (see Chapter 3).

The Centers for Medicare and Medicaid Services (CMS), together with Medicare, Medicaid, and private payers, has worked to address the burdens of data collection and reporting through the development of the core sets of quality measures. By reducing the burden on providers and aligning measures across payers, CMS aims to improve quality of care, increase provider satisfaction, improve patient experience of care, and inform the development of new payment models.[8]

In North Carolina, the General Assembly mandated the establishment of a statewide health information exchange in 2015. The exchange, called NC HealthConnex, will serve as a central repository for data collection and reporting purposes, among others as directed by statute. NC HealthConnex will be integrated and aligned across all electronic health records (EHRs) and requires participation of payers and health care providers. The legislation requires "all PHPs and Medicaid and NC Health Choice providers to submit data through the Health Information Exchange Network...in order to ensure effective systems and connectivity to support clinical coordination of care, the exchange of information, and the availability of data to DHHS and the Division of Health Benefits to manage the Medicaid and NC Health Choice programs for the State."[c]

Upon completion of connections (new legislative language has included an end date of June 2020), 98% of the state's health care providers will be submitting data to NC HealthConnex, utilizing large health systems, regional health information exchanges, and EHR hubs to scale and create efficiencies in data collection and reporting.[d]

Given the identification by the Task Force of the ongoing need for a robust data collection and data sharing infrastructure, the Task Force recommends:

> **Recommendation 5.4: Ongoing investment in the development of NC Health Connex in order to allow state agencies, public and private payers, and health care providers shared access to quality improvement and performance data. The infrastructure should maintain integration and alignment across electronic health record systems, be aligned as much as possible across payers, allow for flexibility in reporting methods, and meet federal meaningful use standards for interoperability.**

For operationalizing the quality measures identified in this report, the Task Force also identified several patient characteristics for which quality data should be stratified, in order to identify areas of disparity and opportunities for additional quality improvement strategies.

The Task Force recommends:

> **Recommendation 5.5: The North Carolina Department of Health and Human Services Division of Health Benefits should develop a consistent methodology for identifying appropriate sub-populations and stratifying data on selected measures by one or more of these sub-populations. All measurement data should be stratified by race and ethnicity, and all measures also should be considered for data stratification by one or more of several additional sub-populations. These sub-populations should include (but not be limited to):**
>
> - **Age**
> - **Sex**
> - **Pregnancy status**
> - **Geographic region**
> - **Urban/rural classification**[e]
> - **Health plan membership**
> - **Provider**
> - **Individuals with multiple chronic conditions and/or functional limitations**
> - **Individuals with chronic mental health conditions**
> - **Individuals with intellectual/developmental disabilities**
> - **Individuals dually eligible from Medicaid and Medicare**
> - **Children in foster care system**

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[c] Session Law 2015-245 House Bill 372

[d] Burris, Christie. Acting Director, North Carolina Health Information Exchange Authority, NC Department of Information Technology. Written email communication. July 24, 2017.

[e] Using the definition of urban and rural from the U.S. Census Bureau: The Census Bureau identifies two types of urban areas: Urbanized Areas (UAs) of 50,000 or more people; Urban Clusters (UCs) of at least 2,500 and less than 50,000 people; "Rural" encompasses all population, housing, and territory not included within an urban area.

Suggestions for Ongoing Measure/Data Development and Review

In selecting and prioritizing the quality measures for inclusion in the set for Medicaid, the Task Force identified several areas in which they recommend additional research and exploration of measure development. In some cases, measures may be under development or are being used by some health systems or payers.

The areas identified by the Task Force to consider for ongoing examination are:

- Screening for children for trauma and adverse childhood experiences
- Cost of pharmaceuticals
- Severe and persistent mental illness
- Behavioral health and integrated care
- Care coordination
- Pregnancy intendedness
- Family planning
- Care transitions for children with intellectual/developmental disabilities (pediatric care to adult care)

In addition, the Task Force identified several components of an ongoing process to review and evaluate the measure set identified in this report.

As part of their work, the Task Force began a review of clinical specialty quality measures, but it was determined that it was out of the scope of this Task Force to identify specific measures for individual clinical specialties. However, the Task Force acknowledges the importance of such measures, and particularly of measures that address issues specific to patients with multiple comorbidities and/or chronic conditions. The Task Force recognized the importance of identifying measures for various specific populations, which may vary in terms of which measures are most salient to address quality improvement and quality of care. These issues may be best approached through additional work to identify and prioritize specific quality measures for specific populations, particularly as mandatory enrollment for special populations is phased in under Medicaid managed care. The Task Force recommends:

> **Recommendation 5.6:** **The North Carolina Department of Health and Human Services Division of Health Benefits, as part of its development of a Medicaid quality strategy, should establish and coordinate a statewide multi-disciplinary coalition to review the measures selected by this Task Force and relevant additional information. The coalition should be a multi-stakeholder group, consisting of quality improvement experts, researchers, clinicians and other providers, Medicaid beneficiaries, health professional organizations, and payers. The coalition should be charged with:**
>
> - **Reviewing all measures selected by the Task Force, through an annual in-depth review of measures and data, with quarterly reviews of new measures or revisions (by National Quality Forum or other quality agencies) to those included in the selected set, as needed.**
> - **Reviewing data on selected measures as collected by Medicaid, identifying progress on benchmarks/performance targets, examining the relevance of any new technological innovations that may impact data collection and reporting, and reviewing new evidence and federal data on measures and federal performance.**
> - **Producing an annual report for the North Carolina General Assembly, outlining Medicaid performance on all measures, suggestions for revision to the set of measures, and recommendations to Medicaid on any changes to use of measures.**
> - **Providing guidance for the selection of additional measures, or review and implementation of existing measures, according to changes to the Medicaid program. These measures may**

include those appropriate for measuring improvement within integrated care settings, clinical specialty settings, measures specific to patients with multiple comorbidities, and/or enhanced care management settings for patients with high needs.

- **Serving in an advisory capacity to the North Carolina Department of Health and Human Services Division of Health Benefits and Division of Medical Assistance to support additional recommendations on operationalization of quality measurement and its use to improve population health.**

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	Measure Name	Measure Steward	Alignment with Other Measure Sets												Population			NQF Endorsed
			2017 CMS Core Set - Adult	2017 CMS Core Set - Child	HEDIS	NQF	PQRS	MSS ACO	CMS eMSR (MU/CQM)	DMA reporting	CPC + eCQM	CHIPRA2	BCBSNC	Other	Adult	Child	Maternity	
	Population Level Measures																	
Measure name	Healthy days													BRFSS	X	X	X	
Definition	Questions asked: 1) Would you say that in general your health is excellent, very good, good, fair, or poor?; 2) Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?; 3) Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?; 4) During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?																	
Numerator																		
Denominator																		
Exclusions																		
Target age																		
Measure type																		
Data source	Survey																	
Rationale	The Task Force identified the importance of a patient-reported measure of health status as a driver for improvements in population health; a measure of healthy days can also highlight health disparities. (https://www.cdc.gov/mmwr/preview/mmwrhtml/su6001a2.htm)																	
Measure name	Percentage of low birthweight births	CDC		X		#1382			X			X		CCNC		X		X
Definition	The percentage of births with birthweight <2,500 grams																	
Numerator	The number of babies born weighing <2,500 grams at birth in the study population																	
Denominator	All births in the study population																	
Exclusions	None																	
Target age	0																	
Measure type	Outcome																	
Data source	Patient reported data																	
Rationale	This measure is a comprehensive measure of timeliness and quality of prenatal care, physical health, and social determinants of health																	
Measure name	Weight assessment and counseling for nutrition and physical activity for children/adolescents (WCC-CH)	NCQA		X	X	#0024	X		X	X						X		Yes
Definition	Percentage of children ages 3 to 17 who had an outpatient visit with a primary care practitioner (PCP) or obstetrical/ gynecological (OB/GYN) practitioner and who had evidence of the following during the measurement year: BMI percentile documentation; counseling for nutrition; counseling for physical activity																	
Numerator	The percentage of patients to had evidence of a BMI percentile documentation, counseling for nutrition, and counseling for physical activity during the measurement year																	
Denominator	Patients 3-17 with at least 1 outpatient visit with a primary care physician or OB-GYN during the measurement year																	
Exclusions	Exclude patients who have a diagnosis of pregnancy during the measurement year.																	
Target age	Age 3-17																	
Measure type	Process																	
Data source	Claims (Only), Electronic Health Record (Only), Paper Records																	
Rationale	Obese children and adolescents are at greater risk for health conditions such as high blood pressure, diabetes, and asthma, as well as behavioral health problems including anxiety and depression. The CDC states that overweight children and adolescents are more likely to become obese as adults																	
Measure name	Body mass index (BMI) screening and follow-up	CMS				#3039/ 0421	X	X		X (BMI only)					X			X
Definition	Percentage of patients aged 18 years and older with a calculated BMI in the past six months or during the current visit documented in the medical record AND if the most recent BMI is outside of normal parameters, a follow-up plan is documented. Normal Parameters: Age 18 – 64 years BMI > = to 18.5 and <25; Age 65 years and older BMI >= 23 and < 30 kg/m2																	
Numerator	Patients with a documented BMI during the encounter or during the previous six months, AND when the BMI is outside of normal parameters, a follow-up plan is documented during the encounter or during the previous six months of the current encounter.																	
Denominator	All patients aged 18 years and older																	
Exclusions	A patient is not eligible if one or more of the following reasons are documented: Patient is receiving palliative care; Patient is pregnant ; Patient refuses BMI measurement (refuses height and/or weight); Any other reason documented in the medical record by the provider why BMI calculation or follow-up plan was not appropriate ; Patient is in an urgent or emergent medical situation where time is of the essence, and to delay treatment would jeopardize the patient's health status.																	
Target age	18+																	
Data source	Claims (only), Registry																	
Measure type	Process																	

	Measure Name	Measure Steward	Alignment with Other Measure Sets												Population			NQF Endorsed
			2017 CMS Core Set - Adult	2017 CMS Core Set - Child	HEDIS	NQF	PQRS	MSS ACO	CMS eMSR (MU/CQM)	DMA reporting	CPC + eCQM	CHIPRA2	BCBSNC	Other	Adult	Child	Maternity	
Rationale	More than 1/3 of U.S. adults are obese, and obesity- related conditions (including heart disease, stroke, and type 2 diabetes) are among the leading causes of preventable death. The Task Force identified the follow-up plan as a key component of this measure and in driving improvements in population health																	
Measure name	Infant mortality rate															X		
Definition	Resident infant death rates (per 1,000 live births)																	
Numerator																		
Denominator																		
Exclusions																		
Target age	Under 1 year of age																	
Measure type	Outcome																	
Data source	Vital Statistics																	
Rationale	North Carolina's infant mortality rate is among the highest in the U.S., and the infant mortality rate for African American infants is nearly twice that for white or Hispanic babies.																	
Measure name	Chlamydia screening in women ages 16-24 (CCS-AD)	NCQA	X		X	#0033	X		X	X					X	X		X
Definition	The percentage of women 16–24 years of age who were identified as sexually active and who had at least one test for chlamydia during the measurement year.																	
Numerator	Females who were tested for chlamydia during the measurement year.																	
Denominator	Females 16-24 years who had a claim or encounter indicating sexual activity.																	
Exclusions	Females who received a pregnancy test to determine contraindications for medication (isotretinoin) or x-ray.																	
Target age	16-24 years																	
Measure type	Process																	
Data source	Claims (Only), Electronic Health Record (Only), Imaging-Diagnostic, Laboratory, Pharmacy																	
Rationale	Chlamydia is the most common sexually transmitted infection (STI) in the United States. Screening is essential in idenfifying chlamydia because most women do not experience symptoms, and if left untreated, chlamydia can lead to pelvic inflammatory disease, infertility, or ectopic pregnancy																	
Measure name	Food insecurity														X	X	X	
Definition	Limited or uncertain access to adequate, nutritious food (Health Leads)																	
Numerator																		
Denominator																		
Exclusions																		
Target age																		
Measure type																		
Data source																		
Rationale	While measures of social determinants of health are still in developmental stages, in that there is a lack of vetted and endorsed measures at the federal level, the Task Force identified screening tools and collection mechanisms in use by health systems and by other state Medicaid agencies to guide the selection of measures of social determinants of health. Social determinants of health are a focus of Healthy North Carolina 2020, a report on the state's health objectives, and selection of priority areas of social determinants of health will drive discussion on how providers and health systems can increase involvement with addressing these factors.																	
Measure name	Housing instability														X	X	X	
Definition	Homelessness, unsafe housing, inability to pay mortgage/rent, frequent housing distruptions, eviction (Health Leads)																	
Numerator																		
Denominator																		
Exclusions																		
Target age																		
Measure type																		
Data source																		

	Measure Name	Measure Steward	Alignment with Other Measure Sets												Population			NQF Endorsed
			2017 CMS Core Set - Adult	2017 CMS Core Set - Child	HEDIS	NQF	PQRS	MSS ACO	CMS eMSR (MU/CQM)	DMA reporting	CPC + eCQM	CHIPRA2	BCBSNC	Other	Adult	Child	Maternity	
Rationale	While measures of social determinants of health are still in developmental stages, in that there is a lack of vetted and endorsed measures at the federal level, the Task Force identified screening tools and collection mechanisms in use by health systems and by other state Medicaid agencies to guide the selection of measures of social determinants of health. Social determinants of health are a focus of Healthy North Carolina 2020, a report on the state's health objectives, and selection of priority areas of social determinants of health will drive discussion on how providers and health systems can increase involvement with addressing these factors.																	
Measure name	Transportation														X	X	X	
Definition	Difficulty accessing/affording transportation (medical or public) (Health Leads)																	
Numerator																		
Denominator																		
Exclusions																		
Target age																		
Measure type																		
Data source																		
Rationale	While measures of social determinants of health are still in developmental stages, in that there is a lack of vetted and endorsed measures at the federal level, the Task Force identified screening tools and collection mechanisms in use by health systems and by other state Medicaid agencies to guide the selection of measures of social determinants of health. Social determinants of health are a focus of Healthy North Carolina 2020, a report on the state's health objectives, and selection of priority areas of social determinants of health will drive discussion on how providers and health systems can increase involvement with addressing these factors.																	
Preventive Care																		
Measure name	Childhood immunization status	NCQA		X	X	#0038	X			X						X		X
Definition	Percentage of children 2 years of age who had four diphtheria, tetanus and acellular pertussis (DtaP); three polio (IPV); one measles, mumps and rubella (MMR); three haemophilus influenza type B (HiB); three hepatitis B (HepB); one chicken pox (VZV); four pneumococcal conjugate (PCV); one hepatitis A (HepA); two or three rotavirus (RV); and two influenza (flu) vaccines by their second birthday. The measure calculates a rate for each vaccine.																	
Numerator	Children who received the recommended vaccines by their second birthday.																	
Denominator	Children who turn 2 years of age during the measurement year.																	
Exclusions	Exclude children who had a contraindication for a specific vaccine from the denominator for all antigen rates. The denominator for all rates must be the same.																	
Target age	2 years																	
Measure type	Process																	
Data source	Claims (Only), Electronic Health Record (Only), Paper Records, Registry																	
Rationale	Vaccination provides protection from several potentially harmful diseases that may cause serious illness or death. Measure of status based on guidelines for immunizations from the CDC and ACIP. (https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-and-chip-child-core-set-manual.pdf)																	
Measure name	Immunizations for adolescents	NCQA		X	X											X		
Definition	The percentage of adolescents 13 years of age who had one dose of meningococcal vaccine, one tetanus, diphtheria toxoids and acellular pertussis vaccine (Tdap) vaccine and three doses of human papillomavirus (HPV) vaccine by their 13th birthday. The measure calculates a rate for each vaccine and two combination rates.																	
Numerator	For meningococcal, Tdap, and HPV, count only evidence of the antigen or combination vaccine. Meningococcal: At least one meningococcal conjugate vaccine (Meningococcal Vaccine Administered Value Set), with a date of service on or between the member's 11th and 13th birthdays. Tdap: At least one tetanus, diphtheria toxoids and acellular pertussis (Tdap) vaccine (Tdap Vaccine Administered Value Set), with a date of service on or between the member's 10th and 13th birthdays. HPV: At least three HPV vaccines (HPV Vaccine Administered Value Set), with different dates of service on or between the member's 9th and 13th birthdays. Combination 1: (Meningococcal, Tdap) Adolescents who are numerator compliant for two indicators (meningococcal, Tdap). Combination 2 (Meningococcal, Tdap, HPV) Adolescents who are numerator compliant for all three indicators (meningococcal, Tdap, HPV).																	
Denominator	The eligible population																	
Exclusions	Do not include the meningococcal polysaccharide vaccine or the tetanus, diptheria toxoids (Td)																	
Target age	Adolescents who turn 13 years of age during the measurement year																	
Measure type	Outcome																	
Data source	Chart																	

	Measure Name	Measure Steward	Alignment with Other Measure Sets												Population			NQF Endorsed
			2017 CMS Core Set - Adult	2017 CMS Core Set - Child	HEDIS	NQF	PQRS	MSS ACO	CMS eMSR (MU/CQM)	DMA reporting	CPC + eCQM	CHIPRA2	BCBSNC	Other	Adult	Child	Maternity	
Rationale	North Carolina has made significant progress on this measure; these gains are important to maintain. Based on guidelines for immunizations from the CDC and ACIP. (https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-and-chip-child-core-set-manual.pdf). Note: while there is an NQF endorsed measure of Immunizations for Adolescents (#1407), the Task Force selected the 2017 revised HEDIS measure due to its inclusion of HPV immunization.																	
Measure name	Well-child visits in the first 15 months of life	NCQA		X	X	#1392				X				Suggested potential Medicaid ACO		X		X
Definition	The percentage of children 15 months old who had the recommended number of well-child visits with a PCP during their first 15 months of life.																	
Numerator	Children who received the following number of well-child visits with a PCP during their first 15 months of life: No well-child visits; One well-child visit; Two well-child visits; Three well-child visits; Four well-child visits; Five well-child visits; Six or more well-child visits																	
Denominator	Children 15 months old during the measurement year.																	
Exclusions	None																	
Target age	15 months																	
Measure type	Process																	
Data source	Claims (Only), Electronic Health Record (Only), Paper Records																	
Rationale	Regular well child visits are important to maintain immunization coverage and identify additional health and developmental issues. Based on the CMS and American Academy of Pediatrics guidelines for EPSDT visits. (https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-and-chip-child-core-set-manual.pdf)																	
Measure name	Well child visits in 3rd, 4th 5th, and 6th years of life	NCQA		X	X	#1516				X		X		CCNC		X		X
Definition	The percentage of children 3-6 years of age who had one or more well-child visits with a PCP during the measurement year.																	
Numerator	Children who received at least one well-child visit with a PCP during the measurement year.																	
Denominator	Children 3-6 years of age during the measurement year.																	
Exclusions	None																	
Target age	Age 3-6																	
Measure type	Process																	
Data source	Claims (Only), Electronic Health Record (Only), Paper Records																	
Rationale	Regular well child visits are important to maintain immunization coverage and identify additional health and developmental issues. Based on the CMS and American Academy of Pediatrics guidelines for EPSDT visits. (https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-and-chip-child-core-set-manual.pdf)																	
Measure name	Adolescent well care visits	NCQA	X	X	X					X				Suggested potential Medicaid ACO		X		
Definition	The percentage of enrolled members 12–21 years of age who had at least one comprehensive well-care visit with a PCP or an OB/GYN practitioner during the measurement year.																	
Numerator	At least one comprehensive well-care visit with a PCP or an OB/GYN practitioner during the measurement year. The PCP does not have to be assigned to the member. Adolescents who had a claim/encounter with a code listed in Table AWC-A are considered to have received a comprehensive well-care visit.																	
Denominator	The eligible population.																	
Exclusions	(For Hybrid Specification): Do not include services rendered during an inpatient or ED visit.																	
Target age	12-21 years																	
Measure type	Process																	
Data source	Claims																	
Rationale	Regular well child visits are important to maintain immunization coverage and identify additional health and developmental issues. Based on the CMS and American Academy of Pediatrics guidelines for EPSDT visits. (https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-and-chip-child-core-set-manual.pdf)																	

	Measure Name	Measure Steward	Alignment with Other Measure Sets												Population			NQF Endorsed
			2017 CMS Core Set - Adult	2017 CMS Core Set - Child	HEDIS	NQF	PQRS	MSS ACO	CMS eMSR (MU/CQM)	DMA reporting	CPC + eCQM	CHIPRA2	BCBSNC	Other	Adult	Child	Maternity	
Measure name	Percentage of eligibles who received preventive dental services (PDENT-	CMS		X						X (annual dental visit)						X		
Definition	Percentage of individuals ages 1 to 20 who are enrolled in Medicaid or CHIP Medicaid Expansion programs for at least 90 continuous days, are eligible for Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) services, and who received at least one preventive dental service during the reporting period.																	
Numerator	The unduplicated number of individuals receiving at least one preventive dental service by or under the supervision of a dentist as defined by HCPCS codes D1000 - D1999 (or equivalent CDT codes D1000 - D1999 or equivalent CPT codes, that is, only those CPT codes that are for preventive dental services and only if provided by or under the supervision of a dentist), based on an unduplicated paid, unpaid, or denied claim.																	
Denominator	The total unduplicated number of individuals ages 1 to 20 who have been continuously enrolled in Medicaid or CHIP Medicaid Expansion programs for at least 90 days and are eligible to receive EPSDT services.																	
Exclusions																		
Target age	Age 1-20																	
Measure type	Outcome																	
Data source	Claims/encounter data																	
Rationale	Tooth decay is the most common disease of childhood. The Task Force sought to identify a comprehensive measure of access to and timeliness of oral health care for children on Medicaid.																	
Measure name	Tobacco use: screening and cessation	PCIP	X		X	#0028									X			X
Definition	Percentage of patients aged 18 years and older who were screened for tobacco use one or more times within 24 months AND who received cessation counseling intervention if identified as a tobacco user																	
Numerator																		
Denominator																		
Exclusions	None																	
Target age	18+																	
Measure type	Process																	
Data source	Claims, Electronic health record, Other, Paper records, Registry																	
Rationale	Smoking and tobacco use is the leading cause of preventable death in the United States. The Task Force identified tobacco use as a key component of a comprehensive set of measures to drive improvements in population health.																	
Measure name	Screening for clinical depression and follow up plan	CMS	x			#0418/ 3148	X		X						X	X		X
Definition	Percentage of patients aged 12 years and older screened for clinical depression on the date of the encounter using an age appropriate standardized depression screening tool AND if positive, a follow-up plan is documented on the date of the positive screen																	
Numerator	Patients screened for clinical depression on the date of the encounter using an age appropriate standardized tool AND, if positive, a follow-up plan is documented on the date of the positive screen																	
Denominator	All patients aged 12 years and older																	
Exclusions	A patient is not eligible if one or more of the following conditions exist: 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; Situations where the patient's motivation to improve may impact the accuracy of results of nationally recognized standardized depression assessment tools. For example: certain court appointed cases; Patient was referred with a diagnosis of depression; Patient has been participating in on-going treatment with screening of clinical depression in a preceding reporting period; Severe mental and/or physical incapacity where the person is unable to express himself/herself in a manner understood by others. For example: cases such as delirium or severe cognitive impairment, where depression cannot be accurately assessed through use of nationally recognized standardized depression assessment tools.																	
Target age	12+																	
Measure type	Process																	
Data source	Claims, Other, Paper Records																	

	Measure Name	Measure Steward	Alignment with Other Measure Sets												Population			NQF Endorsed
			2017 CMS Core Set - Adult	2017 CMS Core Set - Child	HEDIS	NQF	PQRS	MSS ACO	CMS eMSR (MU/CQM)	DMA reporting	CPC + eCQM	CHIPRA2	BCBSNC	Other	Adult	Child	Maternity	
Rationale	Depression is associated with higher rates of chronic medical conditions, increased risk of mortality from suicide, and higher risk for other mental illnesses. In addition, depression has a large economic burden - including workplace costs, direct costs, and suicide-related costs, the economic burden of depression was estimated to be $210.5 billion in 2010 (national data from CDC).																	
Measure name	**Cervical cancer screening (CSS)**	NCQA	X		X	#0032	X		X	X	X		X	CCNC	X			X
Definition	Percentage of women 21–64 years of age who were screened for cervical cancer using either of the following criteria: - Women age 21–64 who had cervical cytology performed every 3 years. - Women age 30–64 who had cervical cytology/human papillomavirus (HPV) co-testing performed every 5 years.																	
Numerator	The number of women who were screened for cervical cancer.																	
Denominator	Women age 21 to 64 years as of the end of the measurement year																	
Exclusions	Women who had a hysterectomy with no residual cervix, cervical agenesis or acquired absence of cervix any time during their medical history through the end of the measurement year.																	
Target age	21-64																	
Measure type	Process																	
Data source	Claims																	
Rationale	Cervical cancer is easily preventable with regular screening tests and proper follow up. Screening is critical for prevention and early detection.																	
Measure name	**Contraceptive care-postpartum women ages 15-44**	US Office of Population Affairs	X			#2902										X	X	X
Definition	Among women ages 15 through 44 who had a live birth, the percentage that is provided: 1) A most effective (i.e., sterilization, implants, intrauterine devices or systems (IUD/IUS)) or moderately (i.e., injectables, oral pills, patch, ring, or diaphragm) effective method of contraception within 3 and 60 days of delivery 2) A long-acting reversible method of contraception (LARC) within 3 and 60 days of delivery. Two time periods are proposed (i.e., within 3 and within 60 days of delivery) because each reflects important clinical recommendations from the U.S. Centers for Disease Control and Prevention (CDC) and the American College of Obstetricians and Gynecologists (ACOG). The 60-day period reflects ACOG recommendations that women should receive contraceptive care at the 6-week postpartum visit. The 3-day period reflects CDC and ACOG recommendations that the immediate postpartum period (i.e., at delivery, while the woman is in the hospital) is a safe time to provide contraception, which may offer greater convenience to the client and avoid missed opportunities to provide contraceptive care.																	
Numerator	Primary measure: Women ages 15 through 44 who had a live birth and were provided a most (sterilization, intrauterine device, implant) or moderately (pill, patch, ring, injectable, diaphragm) effective method of contraception within 3 and 60 days of delivery. Sub-measure: Women ages 15 through 44 who had a live birth and were provided a long-acting reversible method of contraception (LARC) within 3 and 60 days of delivery.																	
Denominator	Women ages 15 through 44 who had a live birth in a 12-month measurement year.																	
Exclusions	The following categories are excluded from the denominator: (1) deliveries that did not end in a live birth (i.e., miscarriage, ectopic, stillbirth or induced abortion); and (2) deliveries that occurred during the last two months of the measurement year.																	
Target Age	15-44																	
Measure type	Outcome																	
Data source	Claims (only)																	
Rationale	Effective methods of contraception provided in the postpartum period are important for preventing unintended pregnancies and assisting women in achieving recommended inter-pregnancy intervals. Short intervals are associated with negative health outcomes for children and mothers. https://mhnpjournal.biomedcentral.com/articles/10.1186/s40748-016-0040-y																	
Measure name	**Behavioral health risk assessment (for pregnant women)**	Pediatric Measurement Center of Excellence		X					X					CCNC; PQMP (Pediatric Quality		X		X	
Definition	Proportion of women who had at least one prenatal visit who received behavioral health risk screening assessment (for depression, tobacco use, drug use, alcohol use, intimate partner violence)																	
Numerator	Patients who received all following behavioral health screening risk assessments at the first prenatal visit: depression, alcohol use, tobacco use, drug use, intimate partner violence																	
Denominator	All patients, regardless of age, who gave birth during a 12-month period seen at least once for prenatal care																	
Exclusions	None																	
Target age	Pregnant women regardless of age																	
Measure type	Process																	
Data source	Electronic medical record																	

	Measure Name	Measure Steward	Alignment with Other Measure Sets												Population			NQF Endorsed
			2017 CMS Core Set - Adult	2017 CMS Core Set - Child	HEDIS	NQF	PQRS	MSS ACO	CMS eMSR (MU/CQM)	DMA reporting	CPC + eCQM	CHIPRA2	BCBSNC	Other	Adult	Child	Maternity	
Rationale	The Pregnancy Medical Home Risk Screening Form used by CCNC has been the basis for reporting that measure for 5 years; the Task Force recommends maintaining that infrastructure and use of this form to report on this measure.																	
Measure name	Prenatal & postpartum care (PPC)	NCQA	X	X	X	#1517				X					X		X	Removed Oct. 2016
Definition	The percentage of deliveries of live births between November 6 of the year prior to the measurement year and November 5 of the measurement year. For these women, the measure assesses the following facets of prenatal and postpartum care: Rate 1: Timeliness of Prenatal Care. The percentage of deliveries that received a prenatal care visit as a member of the organization in the first trimester or within 42 days of enrollment in the organization. Rate 2: Postpartum Care. The percentage of deliveries that had a postpartum visit on or between 21 and 56 days after delivery.																	
Numerator	Rate 1: The number of deliveries that received a prenatal visit as a member of the organization in the first trimester or within 42 days of enrollment in the organization. Rate 2: The number of deliveries that has a postpartum visit on or between 21 and 56 days after delivery.																	
Denominator	The number of deliveries of live births between November 6 of the year prior to the measurement year and November 5 of the measurement year.																	
Exclusions	Non-live births																	
Target age	n/a																	
Measure type	Process																	
Data source	Claims (Only), Electronic Health Record (Only), Paper Records																	
Rationale	This bundled measure encompasses two critical points of care for pregnant women. Used to evaluate whether women received care on a routine, outpatient basis. (https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-and-chip-child-core-set-manual.pdf)																	
Care of Acute and Chronic Conditions																		
Measure name	Medication management for people with asthma	NCQA		x		#1799			X	X		X			X	X		Removed 8/3/2016
Definition	The percentage of members 5 to 64 years of age during the measurement year who were identified as having persistent asthma and who were dispensed appropriate medication that they remained on during the treatment period. Two rates are reported: 1) Percent of patients who remained on an asthma controller medication for at least 50% of their treatment period. 2) Percent of patients who remained on an asthma controller medication for at least 75% of their treatment period.																	
Numerator	Numerator 1 (Medication Adherence 50%): The number of patients who achieved a PDC* of at least 50% for their asthma controller medications during the measurement year. A higher rate is better. Numerator 2 (Medication Adherence 75%): The number of patients who achieved a PDC* of at least 75% for their asthma controller medications during the measurement year. A higher rate is better.																	
Denominator	All patients 5–64 years of age as of December 31 of the measurement year who have persistent asthma by meeting at least one of the following criteria during both the measurement year and the year prior to the measurement year: • At least one emergency department visit with asthma as the principal diagnosis • At least one acute inpatient claim/encounter with asthma as the principal diagnosis • At least four outpatient visits or observation visits on different dates of service, with any diagnosis of asthma AND at least two asthma medication dispensing events. Visit type need not be the same for the four visits. • At least four asthma medication dispensing events																	
Exclusions	Exclude patients who had any of the following diagnoses any time during the patient's history through the end of the measurement year (e.g., December 31): COPD; Emphysema; Obstructive Chronic Bronchitis; Chronic Respiratory Conditions Due To Fumes/Vapors; Cystic Fibrosis; Acute Respiratory Failure. Exclude any patients who had no asthma controller medications dispensed during the measurement year.																	
Target age	Age 5-64																	
Measure type	Process																	
Data source	Claims (Only)																	
Rationale	Asthma is a prevalent problem in the pediatric population, and is responsible for increased ED admission rates. In addition, racial disparities in childhood asthma rates point to the effects of social determinants of health such as housing quality and environmental health.																	
Measure name	Comprehensive diabetes care: HbA1c poor control	NCQA	X			#0059	X	X	X	X	X				X			X
Definition	The percentage of patients 18-75 years of age with diabetes (type 1 and type 2) whose most recent HbA1c level during the measurement year was greater than 9.0% (poor control) or was missing a result, or if an HbA1c test was not done during the measurement year.																	
Numerator	Patients whose most recent HbA1c level is greater than 9.0% or is missing a result, or for whom an HbA1c test was not done during the measurement year.																	
Denominator	Patients 18-75 years of age by the end of the measurement year who had a diagnosis of diabetes (type 1 or type 2) during the measurement year or the year prior to the measurement year.																	

	Measure Name	Measure Steward	Alignment with Other Measure Sets												Population			NQF Endorsed
			2017 CMS Core Set - Adult	2017 CMS Core Set - Child	HEDIS	NQF	PQRS	MSS ACO	CMS eMSR (MU/CQM)	DMA reporting	CPC + eCQM	CHIPRA2	BCBSNC	Other	Adult	Child	Maternity	
Exclusions	Exclude patients who use hospice services or elect to use a hospice benefit any time during the measurement year, regardless of when the services began. Exclude patients who did not have a diagnosis of diabetes, in any setting, during the measurement year or the year prior to the measurement year and who had a diagnosis of gestational diabetes or steroid-induced diabetes in any setting, during the measurement year or the year prior to the measurement year.																	
Target age	18-75																	
Measure type	Outcome																	
Data source	Claims (Only), Electronic Health Record (Only), Laboratory, Paper Records, Pharmacy																	
Rationale	Diabetes is one of the most costly and highly prevalent chronic diseases, and the seventh leading cause of death in the United States. Complications and related conditions include heart disease, stroke, blindness, kidney disease, and amputations. People with both type 1 and type 2 diabetes must work closely with health care providers to manage their health.																	
Measure name	**Controlling high blood pressure**	NCQA	x		X	#0018		X	X		X			CCNC	X			X
Definition	The percentage of patients 18 to 85 years of age who had a diagnosis of hypertension (HTN) and whose blood pressure (BP) was adequately controlled (<140/90) during the measurement year.																	
Numerator	The number of patients in the denominator whose most recent BP is adequately controlled during the measurement year. For a patient's BP to be controlled, both the systolic and diastolic BP must be <140/90 (adequate control). To determine if a patient's BP is adequately controlled, the representative BP must be identified.																	
Denominator	Patients 18 to 85 years of age by the end of the measurement year who had at least one outpatient encounter with a diagnosis of hypertension (HTN) during the first six months of the measurement year.																	
Exclusions	Exclude all patients with evidence of end-stage renal disease (ESRD) on or prior to the end of the measurement year. Documentation in the medical record must include a related note indicating evidence of ESRD. Documentation of dialysis or renal transplant also meets the criteria for evidence of ESRD. Exclude all patients with a diagnosis of pregnancy during the measurement year. Exclude all patients who had an admission to a nonacute inpatient setting during the measurement year.																	
Target age	18-85																	
Measure type	Outcome																	
Data source	Chart																	
Rationale	About 1 in 3 adults have high blood pressure, and only about half of these have it well-controlled. Hypertension can increase the risk of heart disease and stroke.																	
Measure name	**Hospital-acquired conditions**	Measures defined by CMS hospital-acquired conditions program												IHI	X	X	X	
Definition	The rates of acute care hospitals of the following conditions: 1) Foreign object reatained after surgery; 2) Air embolism; 3) Blood incompatability; 4) Falls and traumas; 5) Manifestations of poor glycemic control; 6) Catheter- associated urinary tract infection; 7) Vascular catheter- associated infection; 8) Surgical site infection, mediastintis, following coronary artery bypass graft (CABG); 9) Surgical site infection following certain orthopedic procedures; 10) Surgical site infection following cardiac implantable electronic device; 11) Deep vein thrombosis/pulmonary embolism following certain orthopedic procedures; 12) Latrogenic pneumothorax with venous catherization																	
Numerator	The number of patients who reported any of the above conditions																	
Denominator	All patients																	
Exclusions																		
Target age	0+																	
Measure type	Outcome																	
Data source	Chart																	
Rationale	Infections/conditions acquired while receiving medical care are preventable threats to patient safety and health outcomes. Federally, hospitals have made significant progress in reducing rates of conditions acquired while during the provision of hospital-based care. Patient safety is a key indicator in any quality measure set.																	
Measure name	**Use of opioids at high dosage**	Pharmacy Quality Alliance	X			#2940												X
Definition	The proportion (XX out of 1,000) of individuals without cancer receiving a daily dosage of opioids greater than 120mg morphine equivalent dose (MED) for 90																	
Numerator	Any member in the denominator with opioid prescription claims where the MED is greater than 120mg for 90 consecutive days or longer																	
Denominator	Any member with two or more prescription claims for opioids filled on at least two separate days, for which the sum of the days supply is greater than or equal to 15.																	
Exclusions	Any member with a diagnosis for Cancer or a Prescription Drug Hierarchical Condition Category (RxHCC) 8, 9, 10, or 11 for Payment Year 2015; or RxHCC 15, 16, 17, 18, or 19 for Payment Year 2016 (see list in S.11 and S.2b); or a hospice indicator (Medicare Part D) from the enrollment database.																	
Target age	n/a																	
Measure type	Process																	
Data source	Claims (only)																	
Rationale	This is currently the best vetted measure for opioids, and addresses issues of prescribing patterns as they relate to opioid use.																	

	Measure Name	Measure Steward	Alignment with Other Measure Sets												Population			NQF Endorsed
			2017 CMS Core Set - Adult	2017 CMS Core Set - Child	HEDIS	NQF	PQRS	MSS ACO	CMS eMSR (MU/CQM)	DMA reporting	CPC + eCQM	CHIPRA2	BCBSNC	Other	Adult	Child	Maternity	
Measure name	Follow up after hospitalization for mental illness (FUH)	NCQA	X	X	X	#0576	X			X					X	X		X
Definition	The percentage of discharges for patients 6 years of age and older who were hospitalized for treatment of selected mental illness diagnoses and who had an outpatient visit, an intensive outpatient encounter or partial hospitalization with a mental health practitioner. Two rates are reported: 1) The percentage of discharges for which the patient received follow-up within 30 days of discharge 2) The percentage of discharges for which the patient received follow-up within 7 days of discharge																	
Numerator	30-Day Follow-Up: An outpatient visit, intensive outpatient visit or partial hospitalization with a mental health practitioner within 30 days after discharge. Include outpatient visits, intensive outpatient visits or partial hospitalizations that occur on the date of discharge.																	
Denominator	Patients 6 years and older as of the date of discharge who were discharged from an acute inpatient setting (including acute care psychiatric facilities) with a																	
Exclusions	Exclude both the initial discharge and the readmission/direct transfer discharge if the readmission/direct transfer discharge occurs after the first 11 months of the measurement year (e.g., after December 1). Exclude discharges followed by readmission or direct transfer to a nonacute facility within the 30-day follow-up period, regardless of principal diagnosis for the readmission. Exclude discharges followed by readmission or direct transfer to an acute facility within the 30-day follow-up period if the principal diagnosis was for non-mental health (any principal diagnosis code other than those included in the Mental Health Diagnosis Value Set).																	
Target age	6+																	
Measure type	Process																	
Data source	Claims (Only), Electronic Health Record (Only)																	
Rationale	The ability to measure follow up after hospitalization for mental illness will change the way that care is administered. An outpatient visit with a mental health practitioner after discharge is recommended to make sure that the patient's transition to the home or work environment is supported and that gains made during hospitalization are not lost.																	
	Patient Experience of Care																	
Measure name	Consumer Assessment of Healthcare Providers and Systems (Selected Key Indicators):	AHRQ	x	x	X	#0006		X						CAHPS	X	X		X
Definition	Percentage of patients who answer “Always” or "Usually" to CG-CAHPS questions on their ability to get urgent care, routine care, or needed information from a physician’s office.																	
Numerator	Number of patients who answer “Always” or "Usually" to CG-CAHPS questions on their ability to get urgent care, routine care, or needed information from a physician’s office																	
Denominator	All CG-CAHPS respondents																	
Exclusions	Individuals are excluded from the survey target population if: They were not continuously enrolled in the health plan (excepting an allowable enrollment lapse of less than 30 days); Their primary health coverage is not through the plan; Another member of their household has already been sampled; They have been institutionalized (put in the care of a specialized institution) or are deceased.																	
Target age	Parents or guardians of children aged 0-17 for Child version; 18+ for Adult version																	
Measure type	Outcome																	
Data source	Patient reported data (CAHPS core survey responses)																	
Rationale	Reliable access to care is key to achieving optimal health outcomes, decreasing cost, and ED department utilization.																	
Measure name	Consumer Assessment of Healthcare Providers and Systems (Selected Key Indicators): Patient-clinician communication satisfaction	AHRQ	x	x	X	#0006		X						CAHPS	X	X		X
Definition	Percentage of patients who report the highest level of satisfaction (Always or Usually) with their provider's communication																	
Numerator	Number of patients reporting the highest level of satisfaction (Always and Usually) with their provider's communication																	
Denominator	All CG-CAHPS respondents																	
Exclusions	Individuals are excluded from the survey target population if: They were not continuously enrolled in the health plan (excepting an allowable enrollment lapse of less than 30 days); Their primary health coverage is not through the plan; Another member of their household has already been sampled; They have been institutionalized (put in the care of a specialized institution) or are deceased.																	
Target age	Parents or guardians of children aged 0-17 for Child version; 18+ for Adult version																	
Measure type	Outcome																	
Data source	Patient reported data (CAHPS core survey responses)																	
Rationale	Optimal patient-provider communication was identified as a priority area by the Task Force, particulary with regards to provider familiarity with patients' medical history. The task force believed that this measure also encompassed the CAHPS shared-decision making measure.																	

	Measure Name	Measure Steward	Alignment with Other Measure Sets												Population			NQF Endorsed
			2017 CMS Core Set - Adult	2017 CMS Core Set - Child	HEDIS	NQF	PQRS	MSS ACO	CMS eMSR (MU/CQM)	DMA reporting	CPC + eCQM	CHIPRA2	BCBSNC	Other	Adult	Child	Maternity	
Measure name	Consumer Assessment of Healthcare Providers and Systems (Selected Key Indicators): Access to specialists	AHRQ	x	x		#0006		X						CAHPS	X			X
Definition	The percentage of patients who report the highest level of satisfaction (Always or usually) to the question In the last 6 months, how often did you get an appointment to see a specialist as soon as you needed?																	
Numerator	Number of patients who report the highest level of satisfaction (Always or Usually) on the question "in the last 6 months, how often did you get an appointment to see a specialist as soon as you needed?"																	
Denominator	Eligible members age 18 years and older who answered the "Getting Health Care from Specialists" question "in the last 6 months, how often did you get an appointment to see a specialist as soon as you needed?"																	
Exclusions	Individuals are excluded from the survey target population if: They were not continuously enrolled in the health plan (excepting an allowable enrollment lapse of less than 30 days); Their primary health coverage is not through the plan; Another member of their household has already been sampled; They have been institutionalized (put in the care of a specialized institution) or are deceased.																	
Target age	Parents or guardians of children aged 0-17 for Child version; 18+ for Adult version																	
Measure type	Outcome																	
Data source	Patient reported data (CAHPS supplemental item survey responses)																	
Rationale	The Task Force identified access to specialist care as a priority in assessing the needs of Medicaid beneficiaries.																	
Cost and Utilization																		
Measure name	Total cost of care-based PMPM index (risk-adjusted index)	Health Partners				#1604									X	X	X	X
Definition	Total Cost of Care reflects a mix of complicated factors such as patient illness burden, service utilization and negotiated prices. Total Cost Index (TCI) is a measure																	
Numerator																		
Denominator																		
Exclusions	None																	
Target age																		
Measure type																		
Data source	Claims (only)																	
Rationale	A key benefit of population based measures is helping to better understand potential overuse & underuse of health care services. The Task Force also recommends that all reporting on the total cost of care metric must align as much as possible in both scope and format with existing total cost of care metrics, be mindful of the potential for population-level adverse selection – e.g., plans or providers "cherry-picking" or systematically avoiding certain sub-populations, or penalizing certain regional plans with inherent demographic challenges. The Task Force also acknowledges the importance of avoiding the incentivization of limitation of services and/or payment cuts to providers (to artificially drive down cost in the short-term) or over investment in innovation around social determinants interventions that will yield significant returns on both cost and health outcomes in the long-term.																	
Measure name	Inpatient admission rate (risk-adjusted index)									X inpatient utilization				CCNC	X	X		
Definition	Inpatient admissions per 1,000 member months																	
Numerator																		
Denominator																		
Exclusions																		
Target age	0+																	
Measure type																		
Data source	Claims																	
Rationale	Hospital inpatient care accounts for one-third of U.S. health care expenditures, and improved quality of preventive care and chronic disease management may impact unnecessary hospitalizations, costs, and health outcomes. The Task Force emphasized the need for a risk-adjusted index in order to adequately capture the variability of patient population mix for different hospitals.																	
Measure name	Emergency department utilization (risk-adjusted index)	NCQA			X					X				CCNC	X			
Definition	This measure is used to assess the risk-adjusted ratio of observed to expected emergency department (ED) visits, for members 18 years of age and older.																	
Numerator	All emergency department (ED) visits during the measurement year																	

	Measure Name	Measure Steward	Alignment with Other Measure Sets											Population			NQF Endorsed
			2017 CMS Core Set - Adult	2017 CMS Core Set - Child	HEDIS	NQF	PQRS	MSS ACO	CMS eMSR (MU/CQM)	DMA reporting	CPC + eCQM	CHIPRA2	BCBSNC	Other	Adult	Child	Maternity	
Denominator	Members age 18 years of age and older as of December 31 of the measurement year																	
Exclusions																		
Target age	18+																	
Measure type	Outcome																	
Data source	Claims																	
Rationale	This measure addresses factors that impact access to care, and ED utilization is a high cost driver. Many ED visits are "resource sensitive" and potentially preventable, meaning that access to high-quality, community-based health care can prevent the need for a portion of ED visits.																	
Measure name	Use of imaging studies for low back pain	NCQA				#0052				X					X		X	X
Definition	The percentage of patients with a primary diagnosis of low back pain who did not have an imaging study (plain X-ray, MRI, CT scan) within 28 days of diagnosis.																	
Numerator	Patients who received an imaging study (x-ray, CT, MRI) within the 28 days following a diagnosis of low back pain.																	
Denominator	All patients 18 years as of January 1 of the measurement year to 50 years as of December 31 of the measurement year with a claim/encounter for an outpatient, observation, emergency department, physical therapy, or telehealth visit, or osteopathic or chiropractic manipulative treatment, with a principal diagnosis of low back pain during the Intake Period (January 1 – December 3 of the measurement year).																	
Exclusions	Because the intent of the measure is to assess imaging for patients with a new episode of low back pain, exclude patients with a recent diagnosis of low back pain. Also, exclude any patient who had a diagnosis for which imaging is clinically appropriate. Any of the following meet criteria: Cancer; Trauma; Recent IV drug abuse; Neurologic impairment; HIV; Spinal infection; Major organ transplant; Prolonged use of corticosteroids																	
Target age	18+																	
Measure type	Process																	
Data source	Claims (only)																	
Rationale	This measure assesses the overuse of imaging studies (plain x-ray, MRI, and CT scans) in adults with acute, uncomplicated low back pain. The intent of this measure is to reduce inappropriate imaging for low back pain because it is not associated with improved outcomes and exposes patients to unnecessary harms such as radiation exposure and further unnecessary treatment. In addition, this measure has been identified as one appropriate for identifying low-value services and research has shown that addressing overuse of imaging for low back pain may improve quality of care, improve outcoms, and reduce costs.																	
Measure name	NTSV cesarean delivery	TJC (The Joint Commission)		X		#0471								CCNC	X		X	X
Definition	This measure assesses the number of nulliparous women with a term, singleton baby in a vertex position delivered by cesarean section																	
Numerator	Patients with cesarean sections with ICD-9-CM Principal Procedure Code or ICD-9-CM Other Procedure Codes for cesearean section																	
Denominator	Nulliparous patients delivered of a live term singleton newborn in vertex presentation																	
Exclusions	ICD-10-CM Principal Diagnosis Code or ICD-10-CM Other Diagnosis Codes for multiple gestations and other presentations; Less than 8 years of age; Greater than or equal to 65 years of age; Length of Stay >120 days; Gestational Age < 37 weeks or UTD.																	
Target age	Pregnant women regardless of age																	
Measure type	Outcome																	
Data source	Paper records																	
Rationale	This measure highlights the overutilization of Cesarean sections, which may affect cost of care and subsequent health outcomes.																	
	Workforce Wellbeing																	
Measure name	Job satisfaction													IHI Whole System Measures 2.0	n/a	n/a	n/a	
Definition	Percentage of respondents who respond "Agree," on average, with select indicators of job satisfaction																	
Numerator	Number of respondents who respond "Agree," on average, with select indicators of job satisfaction																	
Denominator	Number of respondents who respond to select indicators of job satisfaction																	
Exclusions																		
Target age	All providers, no age specified																	
Measure type	Outcome																	
Data source	Survey																	
Rationale	Widely used, publicly available measure of job satisfaction for health care workforce.																	
Measure name	Measurement of burnout													IHI Whole System Measures 2.0	n/a	n/a	n/a	

	Measure Name	Measure Steward	Alignment with Other Measure Sets												Population			NQF Endorsed
			2017 CMS Core Set - Adult	2017 CMS Core Set - Child	HEDIS	NQF	PQRS	MSS ACO	CMS eMSR (MU/CQM)	DMA reporting	CPC + eCQM	CHIPRA2	BCBSNC	Other	Adult	Child	Maternity	
Definition																		
Numerator																		
Denominator																		
Exclusions																		
Target age	All providers, no age specified																	
Measure type																		
Data source																		
Rationale	The Task Force used available survey tools and resources to identify measures of Workforce Wellbeing that can drive efforts to improve job satisfaction of the health care workforce, reduce stress and burnout, and enhance the capacity of health systems to improve quality of care and health outcomes.																	
Measure name	Overall satisfaction with the health plan													IHI Whole System Measures 2.0	n/a	n/a	n/a	
Definition	Providers reporting by, “Extremely satisfied, Satisfied, Dissatisfied, Extremely Dissatisfied.”																	
Numerator																		
Denominator																		
Exclusions																		
Target age	All providers, no age specified																	
Measure type																		
Data source																		
Rationale	The Task Force used available survey tools and resources to identify measures of Workforce Wellbeing that can drive efforts to improve job satisfaction of the health care workforce, reduce stress and burnout, and enhance the capacity of health systems to improve quality of care and health outcomes.																	

Appendix B: Measures Reviewed by Task Force on Health Care Analytics

- 2015 draft set of measures developed by the Division of Medical Assistance (DMA)

- Centers for Medicare and Medicaid Services (CMS) Core Sets (Adult and Child):
    - » https://www.medicaid.gov/medicaid/quality-of-care/downloads/2017-adult-core-set.pdf
    - » https://www.medicaid.gov/medicaid/quality-of-care/downloads/2017-child-core-set.pdf

- CMS Consensus Core Set: Accountable Care Organization (ACO) and Primary Care Medical Home (PCMH): https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/Downloads/ACO-and-PCMH-Primary-Care-Measures.pdf

- Comprehensive Primary Care (CPC)+ Electronic Health Record Quality Measures: https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/VendorWorkgroup-Call_May9_CPCCQM_InstructionGuide.pdf

- Whole System Measures 2.0, Institute for Healthcare Improvement: http://www.ihi.org/resources/Pages/IHIWhitePapers/Whole-System-Measures-Compass-for-Health-System-Leaders.aspx

- Healthcare Effectiveness Data and Information Set (HEDIS): http://www.ncqa.org/hedis-quality-measurement/hedis-measures/hedis-2017

- Social Determinants of Health: Health Leads Screening Tool: https://healthleadsusa.org/tools-item/health-leads-screening-toolkit/

- 2016 DHHS Provider Satisfaction Survey Results: https://ncdhhs.s3.amazonaws.com/s3fs-public/documents/files/NC%20DMA%202016%20DHHS%20Provider%20Satisfaction%20Survey%20Results.pdf

- RAND: Factors Affecting Physician Professional Satisfaction and Their Implications for Patient Care, Health Systems, and Health Policy: http://www.rand.org/content/dam/rand/pubs/research_reports/RR400/RR439/RAND_RR439.pdf

- Maslach Inventory, measures types and scale of professional dissatisfaction, stress, and burnout (proprietary – no link available

Recommendation	Responsible Agency/ Organization			
	DHHS (overall)	Division of Health Benefits	NCGA	Other
Rec. 4.1: In order to drive improvements in population health under North Carolina's Medicaid reform plan, the North Carolina Department of Health and Human Services, Division of Health Benefits, should adopt the measures recommended by the Task Force and use the measures and relevant performance data to inform development of quality improvement strategies.	X	X		
Rec. 5.1: State stakeholders (including Department of Health and Human Services/Division of Health Benefits, payers, and health systems) should develop and implement a standard risk adjustment methodology, to be applied across care settings and locations (including at the level of primary care panel), as well as pre- and post-Medicaid reform. This methodology should address use of both adjusted and non-adjusted data to meet data needs and incorporate socioeconomic factors and other data on social determinants of health, particularly as these inform statewide quality improvement initiatives.	X	X		Payers and health systems
Rec. 5.2: The North Carolina Department of Health and Human Services, through Medicaid, should develop and implement a common and universal model of patient attribution across Medicaid managed care organizations. This model must acknowledge multiple levels of influence on patients' care and outcomes, account for data sharing when possible, and encourage transparency and patient choice.	X	X		
Rec. 5.3: North Carolina Department of Health and Human Services/Medicaid should identify specific performance targets and consistent measurement language and definitions to inform quality improvement at the provider, practice, system, and population level. Following establishment of baseline performance, targets may be informed by mean performance on the indicator or by percentiles (the Task Force recommends the 90th percentile) at the local, state, or federal level. Such targets may be implemented in phases or incrementally with pre-determined timelines and should be adjusted as performance as both the state and federal levels improve. In addition, target setting may be informed by current/recent benchmarks and statewide variation in performance. Performance targets should also align with those of commercial insurers, where possible, to increase sustainability of data collection and long-term improvement in population health.	X	X		
Rec. 5.4: Ongoing investment in the development of NC Health Connex in order to allow state agencies, public and private payers, and health care providers shared access to quality improvement and performance data. The infrastructure should maintain integration and alignment across electronic health record systems, be aligned as much as possible across payers, allow for flexibility in reporting methods, and meet federal meaningful use standards for interoperability.	X		X	NC Health Connex
Rec. 5.5: The North Carolina Department of Health and Human Services Division of Health Benefits should develop a consistent methodology for identifying appropriate sub-populations and stratifying data on selected measures by one or more of these sub-populations. All measurement data should be stratified by race and ethnicity, and all measures also should be considered for data stratification by one or more of several additional sub-populations.	X	X		
Rec. 5.6: The North Carolina Department of Health and Human Services Division of Health Benefits, as part of its development of a Medicaid quality strategy, should establish and coordinate a statewide multi-disciplinary coalition to review the measures selected by this Task Force and relevant additional information. The coalition should be a multi-stakeholder group, consisting of quality improvement experts, researchers, clinicians and other providers, Medicaid beneficiaries, health professional organizations, and payers.	X	X		