State of North Carolina Department of Health and Human Services

Division of Health Benefits (NC Medicaid)

North Carolina State Medicaid

Health Information Technology Plan

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CMS Comments Addressed

The following is provided in response to the 2020 CMS conditional approval letter.

CMS Comment	Description/Response/Clarification
Section C: CMS recommends that the State discuss process for verifying if an EP is hospital-based or not.	The description of the State's process for verifying if an EP is hospital-based has been added to section C.3.3.
Section C: CMS recommends that the State discuss possible plans to support electronic capture or other CMS initiatives.	There are no plans to support electric capture or other CMS initiatives for the EHR Incentive Program.
Section C: CMS recommends that the State include any planned or current interactions with T-MSIS or MACPro.	There are no current or planned interactions with T-MSIS or MACPro related to administering and payments or audits for the EHR Incentive Program.

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NC Medicaid Health Information Technology Plan Overview

Executive Summary

This State Medicaid Health Information Technology (HIT) Plan (SMHP) provides an overview of HIT initiatives in North Carolina and outlines the NC Department of Health and Human Services (NC DHHS), Division of Health Benefits (NC Medicaid) strategy through 2021 for implementing the Medicaid Electronic Health Record (EHR) Incentive Program (the Program) authorized under Section 4201 of the American Recovery and Reinvestment Act of 2009 (ARRA).

The sections of this SMHP include a description of the current state of HIT in North Carolina, approach to administering the EHR Incentive Program, and HIT roadmap. This document will be updated in March 2022 to include a final environmental scan.

Section A details various HIT initiatives that are in progress across the state.

Section B details the accomplishments related to HIT initiatives including programs through the NC Area Health Education Centers (AHEC) and NC Office of Rural Health (ORH). This section also contains background on the state's goals in alignment with the NC Health Information Exchange Authority (NC HIEA), which operates the state-designated health information exchange (HIE), NC HealthConnex.

Section C describes North Carolina's procedures for administration and oversight of the Medicaid EHR Incentive Program. NC DHHS made an early and significant investment in this Program, distributing the first incentive payments to providers in March 2011, and, as of May 2021, had 6,181 unique professional participants – 5,133 eligible to apply for a Program Year 2021 incentive payment and 1,048 who have received all six payments.

Finally, Section D addresses the state's HIT Roadmap, including goals and benchmarking activities. North Carolina understands that this journey will require persistence, ongoing analysis of adoption patterns, and regular adjustment of outreach efforts to be successful.

North Carolina will remain focused on the tasks and goals herein to contribute to a more efficient, more effective healthcare system and a healthier population. This SMHP represents one very important component of how NC DHHS will achieve its mission to "in collaboration with our partners, provide essential services to improve the health, safety and well-being of all North Carolinians."

Role of Medicaid in State HIT and HIE Coordination

In response to the opportunities and requirements for developing and overseeing health IT activities in the state including the NC Medicaid EHR Incentive Program, North Carolina Medicaid has adopted a multi-level planning strategy that simultaneously addresses: (1) the internal needs of NC Medicaid; (2) coordination across North Carolina government agencies; and (3) cooperation with public-private efforts. This organizational structure is graphically depicted below in **Figure 1**.
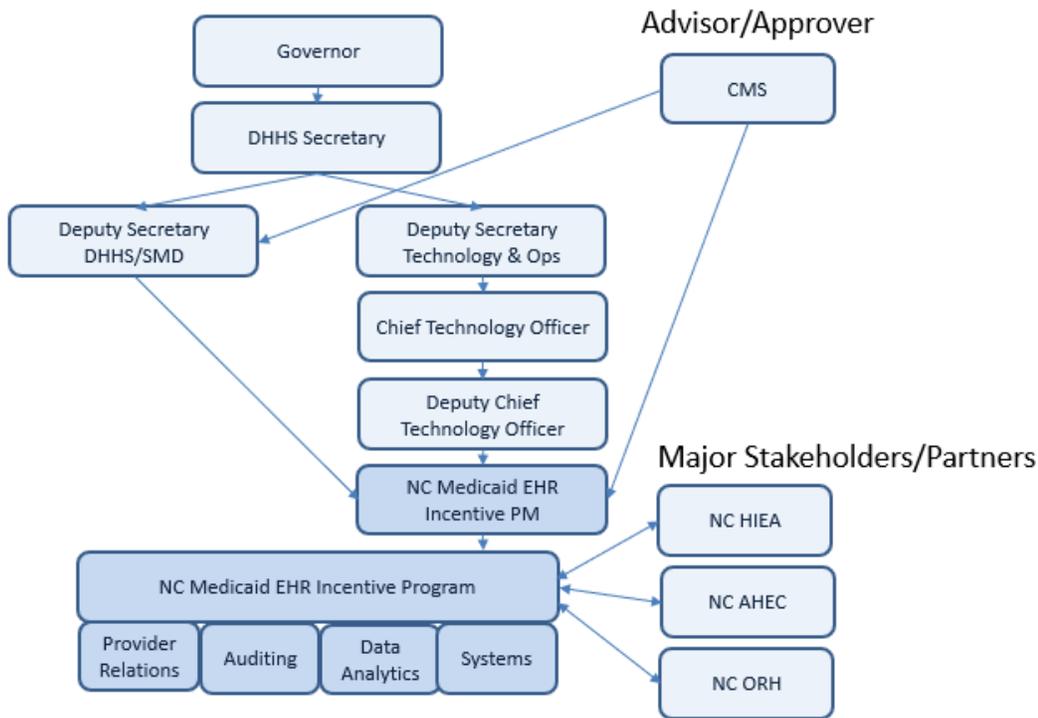
Figure 1 - North Carolina HIT Organizational Structure

NC DHHS Medicaid Information Technology Architecture (MITA) and HIT Coordination Activities

The initiative to reform the state's Medicaid Program is in the plan development and implementation phases. Medicaid Managed Care transformation efforts and options includes Standard Plans and Tribal Option Plan, scheduled to go live July 1, 2021. Behavioral Health I/DD Tailored Plans are scheduled to launch July 1, 2022. Until that time, NC Medicaid will continue to operate under the current fee-for-service model administered by the Department. The MITA team is currently working on requirements and developing architecture for NC Medicaid's Managed Care launch.

The agency's goal is to continue to adopt and use national standards and increasingly share data to improve access to health care information for stakeholders. The agency will continue to promote collaboration and coordination of health care service delivery among all state agencies, statewide data sharing, and adoption of reusable business services. In five years, the agency wants to be further able to concentrate on its core competencies due to a lessened burden from administrative operations.

Interagency Coordination

Per the *Session Law (SL) 2009-0451* of the NC General Assembly, NC DHHS, in cooperation with the State Chief Information Officer (SCIO), coordinates HIT policies and programs within the state. NC DHHS' goal is to avoid duplication of efforts and to ensure that each entity undertaking HIT activities leverages its greatest expertise and technical capabilities in a manner that supports state and national goals.

This law also stipulates that NC DHHS shall establish and direct a HIT management structure that is efficient and transparent and that is compatible with the Office of the National Coordinator (ONC) governance mechanism. NC DHHS was further directed to provide reports on the status of HIT efforts to the Senate Appropriations Committee

on Health and Human Services, the House of Representatives Appropriations Subcommittee on Health and Human Services, and the Fiscal Research Division, and establish an Office of Health Information Technology (OHIT). From May 2013 until April 2014, NC OHIT was 100 percent vacant. An NC OHIT director was hired April 2014 and served through July 2016. NC OHIT was vacant from July 2016 through July 2017 when a new Director of Health Information Technology was hired.

North Carolina convened the state's healthcare leaders and HIT and HIE stakeholder communities through multiple forums from 2009-2010. Those efforts resulted in the decision to establish the NC HIE, a public-private partnership to govern statewide HIE services in North Carolina. Since this time, the statewide health information exchange has gone through two major governance transitions. In December 2012, North Carolina Community Care Networks's (N3CN) board decided to acquire the NC HIE as a subsidiary. In October 2015, the NC General Assembly passed NC Session Law 2015-241 Section 12A.5, as amended by NC Session Law 2015-264, which transferred the statewide HIE network from the Community Care of North Carolina (CCNC)/N3CN structure to a new state agency under the SCIO called the NC Health Information Exchange Authority (HIEA), effective February 29, 2016. The new legislation provides for significant state funding to the statewide HIE network, now called NC HealthConnex. NC Session Law 2017-57 requires hospitals, physicians, physician assistants, and nurse practitioners that have an EHR system and rendered services paid for with Medicaid or other State-funded health care funds be connected to the HIE and begin submitting demographic and clinical data by June 1, 2018. All other providers of Medicaid and State-funded health care services must submit demographic and clinical data by June 1, 2019. LMEs/MCOs must submit encounter and claims data as appropriate by June 1, 2020. The deadline was further amended by NC Session Law 2018-41 to require dentists and ambulatory surgical centers to submit demographic and clinical data by June 1, 2021, and pharmacies to submit claims data by June 1, 2021. All health care providers who receive state funds (e.g., Medicaid, NC Health Choice, State Health Plan, etc.) for the provision of health care services must connect to NC HealthConnex to continue to receive payments for services provided, with the exception of voluntary provider groups outlined in House Bill 70 (N.C. Session Law 2019-23). In response to the COVID-19 pandemic, the COVID-19 Recovery Act (NCSL 2020-3) extended the deadlines for certain provider groups. More information on statewide HIE efforts and Medicaid coordination can be found in *Section A.6 Health Information Exchange* and *Section B.2 Advancing the Objectives of HIE*.

NC Medicaid also collaborates with the NC AHEC to promote the acceleration of adoption and Promoting Interoperability of CEHRT at the practice level.

A. North Carolina's "As-Is" HIT Landscape

A.1 EHR Adoption by Practitioners and Hospitals

To determine the status of North Carolina's "As-Is" HIT landscape at the beginning of NC Medicaid initiatives in 2010, NC Medicaid developed and participated in two surveys of NC Medicaid providers. One pertained specifically to EHR usage and the second pertained to broadband availability. A follow-up survey on EHR usage and specifications as well as perceived benefits of MU of CEHRT was conducted in December 2012. Summaries of these early surveys are included below for historical reference and context. A new environmental scan will be conducted for submission in a final SMHP March 31, 2022.

A.1.1 Early EHR Surveys

In 2010, North Carolina was engaged in the re-credentialing and enrollment of Medicaid providers using a new enrollment process and application. As part of this process, NC Medicaid requested that Medicaid providers complete a survey pertaining to their current and planned EHR use.

In December 2012, the NC Medicaid EHR Incentive Program conducted another survey to gauge EHR adoption and related information among Medicaid professionals.

Results from these surveys are summarized in A.1.1.1.

A.1.1.1 Early EHR Surveys – Eligible Professionals

2010

The following is a summary of the survey results:

- Sixty-eight percent stated that they also saw Medicare patients, 24 percent did not see Medicare patients, and 8 percent did not respond.
- There was a 93 percent response rate to the question, "Are you currently using an EHR/EMR?" Two percent did not know, 42 percent were not using EHR/EMR, 19 percent used part paper and part electronic, and 29 percent used all electronic.
- In total, 141 different products were identified by EHR users. Of these 141 products, the following had the highest percentage of use (note, some amalgamation of responses was made due to very similar but not identical responses): 17 percent had Allscripts, 11 percent had Centricity, and 7 percent had Misys.
- EHRs were purchased between 1981-2010, with most of systems being purchased in 2004 and later. Thirty-four percent stated that their system met certification standards. In a related question to those without an EHR, 14 percent of all 1,360 respondents indicated they would purchase an EHR in the next six to 12 months and 32 percent responded "no" to purchasing an EHR within the next six to 12 months.
- In response to the question, "Is the EHR integrated with the hospital systems admission system?" 18 percent said "yes," 57 percent indicated they did not know or said "no," and 19 percent did not respond.
- The major barriers to EHR adoption were lack of capital and finding an EHR that met the provider's needs.
- 30 percent stated they were using electronic prescribing and 60 percent stated that they were not.

2012

As 2010-2011 saw the rollout of various HITECH initiatives, NC Medicaid determined that another survey would be helpful in determining how the EHR landscape has changed. On December 12, 2012, a web-based survey was sent out to all Medicaid-enrolled providers via email. It should be noted that due to limited sample size (1,143 providers), these results are not overly generalizable.

The following is a summary of the survey results (note, some amalgamation of responses was made due to very similar but not identical responses):

- Of the Medicaid-enrolled providers who responded, 64 percent of the providers were aware of the NC Medicaid EHR Incentive Program.
- When asked, "Does your practice currently using an EHR/EMR?" of the 83 percent Medicaid-enrolled providers who responded, 55 percent currently used an EHR/EMR in their practice and 45 percent did not already use an EHR/EMR in their practices.
- In total, 431 participants responded to this question and identified specific EHRs being utilized in their practice. Of these products, the following had the highest percentage of use: 13 percent had a version of Allscripts, four percent had a version of eClinicalWorks, and four percent had a version of Epic.
- Two questions were targeted to providers who had not already adopted EHR/EMR technology:
  - Of the providers who have not yet adopted EHR/EMR technology, responded to the question "…do you plan on purchasing one in the next six to 12 months?" Of the 61 respondents, 19 percent answered 'Yes'; 28 percent answered 'No'; and, 53 percent had already adopted a certified EHR technology.
  - Of the 73 percent of providers who answered the question "what barriers to EHR adoption do you face?" the most common reason for not adopting the technology was financial barriers.
- Two questions were targeted to providers who had already adopted EHR/EMR technology:
  - Of the 40 percent providers with EHR/EMRs who responded to the question, "to what degree has (the EHR technology) affected workplace efficiencies?": **73 percent responded that the EHR positively affected their workplace efficiencies**; 18 percent indicated their workplace efficiencies have been negatively impacted by EHR/EMR technology; and, nine percent of respondents indicated their practice has not been negatively or positively affected by EHR/EMR technology.
  - Of the 40 percent of providers who have adopted EHR/EMR technology who responded to the question, "to what degree has (the EHR technology) affected the quality of patient care?": **62 percent responded that the EHR positively affected the quality of patient care**; seven percent indicated their quality of patient care has decreased since implementing EHR/EMR technology; and, 31 percent saw no difference in the quality of patient care.
- In response to the question, "What are your plans for participation in the EHR Incentive Program(s)?": of the 65 percent of participants who responded to this question, 21 percent of providers are already participating in the NC Medicaid EHR Incentive Program; 14 percent are already participating in the Medicare EHR Incentive Program; 27 percent plan to participate in the NC Medicaid EHR Incentive Program; 11 percent plan to participate in the Medicare EHR Incentive Program; and 26 percent of providers do not plan to participate in either EHR Incentive Program.
- The top barrier to EHR adoption reported was amount of capital needed to acquire and implement an EHR.

A.1.2 Eligibility for the NC Medicaid EHR Incentive Program

A.1.2.1 Eligible Professionals

A 2010 analysis estimated 3,098 "preliminarily qualified" EPs based on the number of Medicaid providers with an eligible provider type who had been paid by Medicaid for at least 1,512 claims (1,008 for pediatricians) in 2009. As 61 percent of 2010 survey respondents currently used or planned to purchase an EHR in 2010, this percentage applied to the 3,098 "preliminarily qualified" professionals resulted in a rough estimation of 1,889 possible EP participants in the Program's first year (2011).

The same claims analysis conducted in 2010 was repeated in December 2011 and yielded an estimate of 3,383 "preliminarily qualified" professionals, and again in 2012 and yielded an estimate of 4,478 "preliminarily qualified" professionals.

As of May 18, 2021, NC Medicaid EHR Incentive Program payments to EPs totaled over $216 million, including over $91 million in meaningful use payments. The number of EPs who have participated in the Program by successfully attesting and receiving payment at least once is 6,181. Of those, 3,790 are meaningful users.

A.1.2.2 Eligible Hospitals

To identify "potentially eligible" North Carolina hospitals, an analysis was conducted utilizing NC Medicaid annual cost reports. Acute care hospitals must meet Medicaid patient volume thresholds of 10 percent (children's hospitals are exempt from this requirement). North Carolina had 112 Medicaid-enrolled hospitals that qualify for incentive payments based on hospital category (e.g., acute care, children's, and critical access within the CCN ranges defined by CMS) and in 2010 through 2012, it was estimated that 92 qualify based on the required Medicaid volume threshold.

As of May 18, 2021, NC Medicaid EHR Incentive Program payments to hospitals totaled over $142 million, including over $85 million in meaningful use payments. There are 99 EHs who have received an incentive payment from the NC Medicaid EHR Incentive Program – 6 have received only one payment, 5 have received two payments, and 88 have received all three payments.

A.2 Broadband Survey

On June 21, 2016, the NC Department of Information Technology's Broadband Infrastructure Office (BroadbandIO) released the NC State Broadband Plan. The BroadbandIO surveyed 3,500 local leaders and gathered feedback from more than a dozen stakeholder listening sessions and discussions with nearly 80 subject matter experts. The two common themes that emerged from their research were active and engaged communities and their partnerships with private sector internet service providers are the biggest factors in bridging existing digital divides. Therefore, the plan's recommendations encourage communities to be active participants in the development process. The plan also looks at ways to enable new health care technologies and provide the necessary tools to public safety responders to ensure North Carolinians' safety.

The most recent update of the NC State Broadband Plan, released in 2017, included seven recommendations specific to broadband and telehealth:
1) Better leverage the Healthcare Connect Fund
2) Create telehealth best practices for healthcare providers
3) Broadband to all healthcare facilities
4) Healthcare providers market low-cost options for broadband in patients' homes
5) Remote monitoring pilots
6) Medical reimbursements for broadband service
7) Develop public-private partnerships to increase infiltration of telehealth services into the healthcare system

For more information, the full plan (2017 updated version) is available at https://www.ncbroadband.gov/media/20/open.

Broadband Survey Dashboards

The North Carolina Broadband Survey Dashboards are designed to present information on broadband availability and adoption that has been gathered from households and businesses across the state through the North Carolina Broadband Survey.

The dashboards are updated daily with new data and include several resources: a map with location-based results, a dashboard for visualizing survey results, information on methodology, field descriptions and other documentation. Data is organized at the county level and does not contain specific address points.

The dashboards were created collaboratively by the Broadband Infrastructure Office, the N.C. Center for Geographic Information and Analysis and the Friday Institute for Educational Innovation at North Carolina State University.

For more information, visit https://www.ncbroadband.gov/broadband-nc/broadband-survey/broadband-survey-dashboards.

The NC Broadband Map is an open-source, interactive GIS (Geographic Information System) map that is intended to display where broadband is available as well as to identify unserved and underserved areas of the state, by census block or street segment. The map outlines what types of broadband technologies – including DSL, cable, mobile wireless, fixed wireless and fiber – are available to households statewide and which companies are offering these services. Users can query information by plugging in a street address or selecting a specific technology type.

To use the NC Broadband Map (updated most recently with 2019 FCC-reported data), visit https://www.ncbroadband.gov/map/.

In February 2019, the BroadbandIO and NC Office of Rural Health (ORH), combined efforts to win a $98,273 grant from the Appalachian Regional Commission (ARC) POWER fund to investigate existing resources to implement telehealth infrastructure in 20 western counties in North Carolina. The two departments partnered with local and state organizations to conduct a 12-month study of opportunities, challenges and gaps for broadband and health care infrastructure in the ARC region to provide needed telehealth infrastructure. Based on the 2019 ARC grant broadband and telehealth study findings, BroadbandIO and ORH applied for and were awarded a two-year ARC POWER Implementation grant in November 2020. The ARC implementation grant has two major goals:

1. To ensure workers in North Carolina's coal-impacted communities have access to the healthcare they need to thrive and contribute to their community, work place and local economy, and
2. To increase broadband adoption, digital and health literacy, and computer ownership among workers in a subset of three target counties so these workers can continue to advance their technical skills and training, actively engage in their own wellness and their productivity in the workplace.

The ARC POWER Implementation grant is currently underway in 29 ARC counties in western North Carolina.

A.3 Federally Qualified Health Centers and HIT/HIE

The North Carolina Community Health Center Association (NCCHCA) was formed in 1978 by the leadership of community health centers, NCCHCA is comprised of membership from 42 health center grantees (including one migrant voucher program) and two Look-Alike organizations. NCCHCA is singularly focused on the success of

health centers. NCCHCA also seeks support from foundations, corporations, and other private entities to increase the access of primary healthcare to all North Carolinians. In addition, NCCHCA helps communities to create new health centers or expand existing ones.

NCCHCA is the Health Resources and Services Administration (HRSA) funded state **Primary Care Association (PCA)**. The non-profit, consumer-governed Federally Qualified Health Centers (FQHCs) we represent provide integrated medical, dental, pharmacy, behavioral health, and enabling services to nearly one-half million patients in North Carolina. FQHCs receive federal assistance to provide sliding-fee services to assure no one is denied access to care. NCCHCA represents FQHCs to state and federal officials and provides training and technical assistance on clinical, operational, financial, administrative, and governance issues.

NCCHCA is also a **HRSA Health Center Controlled Network (HCCN)** grantee. As an HCCN grantee, we support community health centers across NC working together to use HIT to improve operational and clinical practices. The HCCN is comprised of 36 participating health centers and is currently in the third three-year grant cycle. The HCCN provides its members with data analytics, quality improvement, and Health Information Exchange connectivity to improve cost, quality, and outcomes of care. Participants have the opportunity to work together on quality improvement and operational system redesign initiatives and engage in payment reform models through the Independent Practice Association (IPA) and Accountable Care Organization (ACO) initiatives.

NCCHCA is the sponsor and managing partner of **Carolina Medical Home Network (CMHN) - Independent Practice Association (CMHN-IPA)**, which is a network of 33 NC health centers striving towards clinical integration with the goal of leveraging size, scope and coordinated performance improvement in third-party payer negotiations. The IPA couples CMHN-ACO tested methods with business strategies to develop advantageous network-level contracts with payers.

Carolina Medical Home Network – Accountable Care Organization (CMHN-ACO) is a partnership between NCCHCA and 4 NC health centers that have entered into the Medicare Shared Savings Program (one-sided model). CMHN-ACO received funding from the Center for Medicaid and Medicare Services (CMS) for ACO Investment Model (AIM) to support care coordination efforts at ACO member health centers and network administrative services. NCCHCA launched a Data-Informed Outreach project in collaboration with CMHN that supports community health workers in health centers to augment care coordination efforts. CMHN-ACO serves as the pilot for identification of population health strategies to scale up to the larger CMHN network. For more information, visit http://www.cmhnaco.com/.

Additionally, NCCHCA has been an active stakeholder and advocate in the continued development of the state-designated HIE, NC HealthConnex, with a seat on the legislatively-appointed Advisory Board reserved for a representative of an FQHC. As of May 2020, all of the FQHCs operating in the State of NC have contracted with the HIE and 75 percent are live and participating in the exchange and notification services. **NCCHCA's MISSION** To promote and support patient-governed community health care organizations and the populations they serve.

NCCHCA's VISION
Every North Carolina community will have access to a patient-centered, patient-governed, culturally competent health care home that integrates high quality medical, pharmacy, dental, vision, behavioral health, and enabling services without regard to a person's ability to pay.

For more information, visit https://ncchca.site-ym.com/.

A.4 Veterans Administration and Indian Health Service EHR Program

Veterans Administration

In the early days of the HITECH Act, ONC requested that the North Carolina Healthcare Information & Communications Alliance, Inc. (NCHICA) implement the Nationwide Health Information Network (NwHIN) to serve as a compliant gateway for a mature Health Information Organization (HIO) in North Carolina. The Western North Carolina Health Network (WNCHN) served as the HIO and the Asheville Veterans' Affairs (VA) Medical Center served as the primary partner in this project. The Asheville VA Medical Center provides care to approximately 100,000 veterans from Western North Carolina, upstate South Carolina and northern Georgia, with many of those individuals treated at WNCHN facilities.

The project was completed in September 2011, and the Asheville VA Medical Center became an early participant in the NwHIN, now called the nationwide eHealth Exchange.

NC HIE had a series of discussions with VA and *VistA* representatives in 2013-2014 and concluded that the best path for collaboration going forward would be via each organization's connection to the nationwide eHealth Exchange. The NC HIEA maintains this plan to facilitate exchange between NC's VA facilities and other public and private healthcare institutions via the link to eHealth Exchange. The VA's HIE, VHIE, went live with NC HealthConnex to exchange patient records via the eHealth Exchange in April 2018. As of April 2021, the NC HealthConnex is live, exchanging data with the joint federal HIE that includes health information from the VA and the DoD over the eHealth Exchange.

Table 1 below lists the hospitals and clinics operated by the VA in North Carolina as of May 2021. VA facilities use various versions of the VA-standard EHR system, *VistA.*

VA Medical Center	
Asheville:	[Asheville VA Medical Center](#)
Durham:	[Durham VA Medical Center](#)
Fayetteville:	[Fayetteville VA Medical Center](#)
Salisbury:	[Salisbury - W.G. (Bill) Hefner VA Medical Center](#)
Outpatient Clinic	
Fayetteville:	[Fayetteville Dialysis Clinic](#)
Fayetteville:	[Fayetteville Health Care Center](#)
Fayetteville:	[Fayetteville Rehabilitation Clinic](#)
Greenville:	[Greenville Health Care Center](#)

Hickory:	[Hickory CBOC](#)
Raleigh:	[Blind Rehabilitation Outpatient Clinic](#)
Raleigh:	[Brier Creek Dialysis Clinic](#)
Community Based Outpatient Clinic	
Charlotte:	[Charlotte CBOC](#)
Charlotte:	[Charlotte Health Care Center](#)
Durham:	[Durham Clinic](#)
Durham:	[Hillandale Road Outpatient Clinics 1 & II](#)
Elizabeth City:	[Albemarle Primary OPC](#)
Franklin:	[Franklin CBOC](#)
Goldsboro:	[Goldsboro Community Based Outpatient Clinic](#)
Hamlet:	[Hamlet CBOC](#)
Jacksonville:	[Jacksonville CBOC](#)
Kernersville:	[Kernersville Health Care Center](#)
Morehead City:	[Morehead City CBOC](#)
Pembroke:	[Robeson County CBOC](#)
Raleigh:	[Raleigh CBOC](#)
Raleigh:	[Raleigh II CBOC](#)
Raleigh:	[Raleigh III CBOC](#)
Raleigh:	[Raleigh III Clinic](#)

Rutherfordton:	[Rutherford County CBOC](#)
Sanford:	[Sanford CBOC](#)
Supply:	[Brunswick County](#)
Wilmington:	[Wilmington HCC](#)
Vet Center	
Charlotte:	[Charlotte Vet Center](#)
Fayetteville:	[Fayetteville Vet Center](#)
Greensboro:	[Greensboro Vet Center](#)
Greenville:	[Greenville, NC Vet Center](#)
Jacksonville:	[Jacksonville Vet Center](#)
Raleigh:	[Raleigh Vet Center](#)
Spindale	[Spindale Outstation](#)
VISN	
Durham:	[VISN 6: VA Mid-Atlantic Health Care Network](#)

Table 1 - [Hospitals and Clinics Operated by the Veterans Administration](#)

The Indian Health Services, Tribal Health Services, and the Cherokee Indian Hospital Authority

The Cherokee Indian Hospital Authority (CIHA) serves more than 14,000 members, including 4,458 Medicaid/ Children's Health Insurance Program (CHIP) enrolled members. The Hospital provides over 18,000 yearly primary care provider visits and accommodates more than 22,000 ER visits per year. They implemented an EHR system—the Resource Patient Management System (RPMS) system—in 1986. The Indian Health Services (HIS) graphical user interface (GUI) was implemented in 2004. The GUI provides the capability to process both administrative and clinical data and provides the IHS Office of IT support, thereby lowering costs and enhancing functionality.

As part of the 2014 CEHRT standard, IHS created a personal health record (PHR) that will assist patients in accessing some of their medical information via a web browser at home or on a mobile device. By using the PHR, patients can view, download, and transmit demographic information, medications, lab results, problems, vital

signs, immunizations, and other visit-related information. For more information on the PHR, visit https://cherokeehospital.org/patients/patient-portal/.

Additionally, the CIHA's six facilities, including the hospital, went live with NC HealthConnex to exchange patient records with other participating health care providers statewide in June 2018.

For more information on CIHA, visit http://cherokeehospital.org/.

A.5 Stakeholder Involvement

The resources available through ARRA represent not only an unprecedented opportunity to help forge these unique elements into a truly cooperative and aligned system of care but support a substantial body of stakeholders that can drive North Carolina to the needed HIE tipping point. A wide variety of stakeholders may not be direct recipients of ARRA funding, yet they contribute a vast amount of effort and funding so that the state can achieve higher levels of HIT use and will improve the exchange of health information.

Table 2 below lists the major North Carolina activity for which funding was provided through the ARRA legislation, totaling over $200 million.

Grant Funding Opportunity	Grant Lead Agency	Amount of Grant
State HIE Cooperative Agreement	NC HIE	$12.9 Million, $1.7 Million, Supplemental Challenge Grant
Medicaid MU Planning	NC Medicaid	$2.29 Million
Medicaid EHR Incentive Program Administration and incentive payments	NC Medicaid	$104.2 Million
North Carolina Area Health Education Centers (AHEC)'s Regional Extension Center (REC)	NC AHEC Program at the University of North Carolina at Chapel Hill (UNC-CH), with assistance from the Carolinas Center for Medical Excellence (CCME), the North Carolina Medical Society (NCMS), and Community Care of North Carolina (CCNC)	$13.6 million
HIT Workforce Community College Consortia Program (non-degree programs)	Pitt Community College	$21 million
Health IT Curriculum Development	Duke University Center for Health Informatics (DCHI)	$1.8 million

Grant Funding Opportunity	Grant Lead Agency	Amount of Grant
University-Based Training Program (UBT)	Duke University Medical Center and University of North Carolina	$2.1 million
Broadband – BTOP Round 1	MCNC and North Carolina Research and Education Network (NCREN)	$28.2 million
Broadband – BTOP Round 2	MCNC, City of Charlotte, Olive Hill Community Economic Development, WinstonNet, and Yadkin Valley Telephone Membership Corporation	$115 million
Comparative Effectiveness Research: Mental Health Data Integration Project	N3CN, UNC Sheps Center, and DHHS	$991,332

Table 2 - ARRA Funding in North Carolina

A.5.1 State HIE Cooperative Agreement

The State HIE Cooperative Agreement, originally awarded to the NC Health and Wellness Trust Fund Commission, was transferred to a 501(c)(3) organization on December 1, 2010. The 501(c)(3) was more commonly referred to as the NC Health Information Exchange (NC HIE). The NC HIE has since gone through two governance transitions; most recently, on February 29, 2016, the NC HIE was transferred from the Community Care of North Carolina (CCNC) / North Carolina Community Care Networks (N3CN) structure to a new state agency, the North Carolina Health Information Exchange Authority (NC HIEA). More information on the NC HIEA's new HIE guidelines, services, and stakeholder agreements can be found in *Section A.6 Health Information Exchange* and *Section B.2 Advancing the Objectives of HIE*.

A.5.2 NC Area Health Education Centers (Regional Extension Center): Practice Support

The NC AHEC Program at the University of North Carolina at Chapel Hill (UNC-CH) was awarded a grant on February 8, 2010 to perform the function of the NC Regional Extension Center (REC). Since this time, the NCAHEC Practice Support program has continued to provide provider-centric services to enable transformed healthcare service delivery and patient-centered care through HIT in NC. Although funding for the program's HIT initiatives transitioned from the ONC HITECH funding on February 6, 2015 to the NC HIT IAPD, the scope and intensity of provider engagement in the EHR Incentive Program and HIE remained constant. The NC AHEC program has continued to build capacity in coaching practices through transformation to prepare for new pay-for-value payment models and stands ready to quickly disseminate technical assistance to its base of 818 primary care and subspecialty practices. Since July 1, 2019, through a contract with NC DIT, AHEC has provided trainings to 194 organizations on the features and benefits of NC HealthConnex to connected providers. Trainings were conducted live onsite, virtually, and by recorded module. Recorded modules include the following:

- **Module 1**: *NC HealthConnex Overview*
- **Module 2**: *Unpacking the Welcome Packet*
- **Module 3**: *PAA (Participant Account Administrator) Role and Responsibilities*

- **Module 4**: *Clinical Portal Overview*
- **Module 5**: *Direct Secure Messaging Within the NC HealthConnex Clinical Portal*
- **Module 6**: *Patient Education*
- **Module 7**: *NC*Notify*

Since July 1, 2020, AHEC has assisted primary care practices accepting Medicaid to prepare for transition to Medicaid Managed Care. In 2019, AHEC collaborated with the NC Office of Rural Health to assist behavioral health providers in adopting EHRs for which the provider could receive an incentive payment. In response to the pandemic, AHEC assisted practices across the state with rapid adoption of telehealth.

On the national front, NC AHEC completed an (AHRQ) R18 grant to support the use of data in enabling practices to improve cardiovascular health and is currently working with AHRQ to assist practices with improving assessment and follow up for unhealthy drinking. The NC AHEC Program has worked with Alliant Health, the North Carolina Medical Society Foundation (NCMSF), the North Carolina Academy of Family Physicians (NCAFP), Community Care of North Carolina (CCNC), North Carolina Pediatric Society (NCPS), North Carolina Nurses Association (NCNA), North Carolina Academy of Physician Assistants (NCAPA), North Carolina Community Health Center Association (NCCHCA), and the NC Institute for Public Health (IPH) to strengthen the quality and reach of services while minimizing duplication of efforts.

Table 3 below displays the number of practices and providers enrolled in each of the nine AHEC regions across the state as of March 2021.

NC AHEC Practice Support		
Region	**Practices**	**Providers**
Area L	19	95
Charlotte	97	294
Eastern	54	228
Greensboro	22	71
Mountain	57	332
Northwest	82	304
South East	73	284
Southern Regional	55	147
Wake	16	63
Total	475	1818

Table 3 - NC AHEC's Enrolled Practices/Providers

A.5.2.1 NC REC Technical Assistance Team

The NC AHEC REC staff provide direct, onsite and local support to primary care and specialty practices in their region. This support includes: assessing the practice; assisting in the selection of the most appropriate EHR system; guidance on system implementation; guidance on security and risk assessments; and guidance on system optimization through meeting Promoting Interoperability (PI) and CMS's Quality Payment Program MIPS program requirements.

The measurement of effectiveness and reach of the NC AHEC HIT efforts are included in the following program deliverables:

1. Number of practices who receive technical assistance and successfully attest for an incentive payment.

2. Number of eligible professionals (EPs) who receive technical assistance for an incentive payment.

As of March 2021, the number of providers who have successfully met MU since REC inception is 3,400.

NC AHEC is also in year five of a data analytics pilot to engage practices in optimizing the data reporting components of the MU and MIPS programs. Practices from across the state will be encouraged to use their QPP MIPS and other cost utilization reports to identify areas for further improvement. The data provided by CMS and from a practice's EHR and PM system is hard to interpret and make actionable. The purpose of this pilot is to analyze that data to make it understandable so the practice can use the information to improve cost and quality.

A.5.3 Pitt Community College

In March 2010, Pitt Community College was named one of five institutions across the country to lead a regional consortium of community colleges to train thousands of new HIT professionals. Pitt Community College morphed the Workforce Training Program into a Health Information Technology training program with curriculum that provides individuals with the knowledge and skills to process, analyze, abstract, compile, maintain, manage, and report health information. Since 2017, the HIT program is offered totally online with the exception of the professional practice experiences (PPE – also known as clinical practice), which are made available in the student's region through a joint effort facilitated by the student and the HIT faculty.

For more information, visit https://pittcc.edu/academics/academic-programs/health-sciences-division/health-information-technology/.

A.5.4 MCNC (formerly Microelectronics Center of North Carolina)

MCNC is a 501(c)(3) non-profit client-focused technology organization. Founded in 1980, MCNC owns and operates the North Carolina Research and Education Network (NCREN), one of America's longest-running regional research and education networks. With over 40 years of innovation, MCNC provides high-performance services for education, research, libraries, healthcare, public safety, and other community anchor institutions throughout North Carolina. NCREN is the fundamental broadband infrastructure for 850 of these institutions including all public K-20 education in North Carolina. As one of the nation's premier middle-mile fiber networks, MCNC leverages NCREN to customize Internet services and related applications for each client while supporting private service providers in bringing cost-efficient connectivity to rural and underserved communities in North Carolina.

MCNC provides network services in all 100 counties, with a footprint that meanders throughout the state and more than 4,400 miles of fiber infrastructure, giving MCNC the ability, flexibility and the agility to create individualized solutions and services for its wide-ranging community.

Its more than 850 endpoints help to deliver broadband connections, cybersecurity, and technology services to millions of students and educators, world-renowned research facilities, government and public safety agencies, non-profit health care sites and other community anchor institutions (CAIs) throughout North Carolina.

MCNC's key partnerships and contracts include:
- The University of North Carolina System Office
  - Providing Internet, DDoS Protection, Video Conferencing, and Streaming services to all 17 UNC System Institutions

- North Carolina Department of Information Technology and Department of Public Instruction
  - Providing Internet, DDoS Protection, Web Content Filtering, and, Network and Security Consulting service to all 115 Public School Districts, 170 Charter Schools (and growing)
- State of North Carolina Community College System
  - Providing Internet, DDoS Protection, DNS Security Filtering, Network and Security Consulting, Desktop and Multi-point Video Conferencing, and Streaming services to all 58 Community Colleges
- North Carolina Telehealth Network Association
  - Opt-In Health Care Connect Fund currently serving 307 health care facilities statewide; MCNC provides the network, Internet and DDos Protection and other services.
- North Carolina State Highway Patrol & Public Safety
  - Providing Network Connectivity, Internet, and DDoS Protection services to 21 "Command" Centers statewide

The advanced networking technologies and systems MCNC employs enable connected CAIs to communicate with their constituents more effectively to meet their specific organization's mission, vision, and goals.

Consequently, MCNC's backbone, NCREN, provides a strong network infrastructure for improving the delivery of health care to citizens by supporting the North Carolina Telehealth Network (NCTN).

In collaboration with the [North Carolina Telehealth Network Association](#) (NCTNA), MCNC operates the statewide North Carolina Telehealth Network (NCTN), which supplies the critical broadband infrastructure health care providers need to ably deliver health care services. This dedicated network for public and non-profit health care providers leverages the architectures of MCNC's network, NCREN, and NC DIT to utilize leading-edge broadband technologies and network services that scale to connect customer locations to a resilient fiber backbone.

Key applications running over NCTN include Health Information Exchanges, Electronic Health Records (especially for remote hosting / SaaS models through an Application Service Provider), tele-education, and videoconferencing. Telehealth applications include but are not limited to live medical imaging, echocardiograms, telepsychiatry, orthopedics, intensive care monitoring, CT scans, and storage and forwarding capabilities for MRI radiographs.

To help the state's medical professionals in the non-profit health care arena better serve their constituents through a digital experience with the use of broadband technologies, MCNC provides a fully managed suite of network and cybersecurity services including 24x7x365 client support. In collaboration with the NC DIT and other private telecom carriers, these services meet or exceed the requirements of the NCTN and help enable MCNC to play a key role in supporting North Carolina's health care broadband technologies transformation.

MCNC is well positioned to provide network infrastructure services to North Carolina's public safety community. MCNC's collaborative and transparent approach uniquely situate MCNC to both provide infrastructure and to initiate and participate in diverse conversations and innovations that will be necessary to successfully implement an efficient, powerful, and secure public safety network across the state.

With the expanding use of advanced technology for the delivery of health care and public safety, MCNC recognizes privacy and cyber threats are significant in these areas and must be addressed proactively. To that

end, MCNC has developed a cybersecurity portfolio that better protects clients from the damaging effects of cyber-attacks.

MCNC has purposefully built a number of internal solutions to strengthen the organization's overall cybersecurity posture. Through a formalized risk management program, these efforts will strengthen vulnerability management with stronger authentication, end-point protection, security monitoring, data encryption, security awareness, and education.

In 2012, MCNC achieved SOC 2 Type I certification. In 2018, MCNC achieved the industry-leading SOC Type II status – and has kept this level of certification since, including the most recent certification in early 2021. SOC 2 Type II level is much more comprehensive and designed for advanced IT service providers as systems are evaluated for a minimum of six months to a year. Organizations that undergo this independent review and achieve this level of certification must meet very stringent requirements that prove its entire system is designed to keep its customers' sensitive data secure.

Accountancy firm Assure Professional performed the rigorous audit of MCNC's organizational security controls and processes. The SOC 2 Type II standard not only defines what controls should be in place, but also verifies that MCNC is appropriately managing security risks and is a trusted partner serious about data protection and effective operations.

As modern health care depends more and more on robust, high-speed broadband connectivity for better access to diagnose, care, and research the next discovery of cures, MCNC will continue to offer solutions and enhancements that benefit the needs of the health care community and enrich all of the community it serves for years to come.

Corporate Background
Created by then Gov. James B. Hunt, Jr. and the N.C. General Assembly in 1980, MCNC is a private non-profit that builds, owns, and operates the North Carolina Research and Education Network (NCREN) and customizes network services and applications including critical security solutions for its clients.

For 40 years, a growing number of research, education, non-profit health care, and other community anchor institutions have connected to MCNC's network, NCREN, to utilize this leading-edge broadband highway. Today, the network, NCREN, serves the broadband infrastructure needs of more than 850 of these institutions including all K-20 public education in North Carolina. The expansion of the network and its capabilities allows MCNC to customize network, cybersecurity, and technology services and applications for each of these connectors in an unprecedented fashion as MCNC looks to further enable private-sector providers to bring cost-effective broadband infrastructure to rural and underserved areas of North Carolina. MCNC's business and partnering strategy gives North Carolina a competitive advantage in economic development and is driving the new interconnected economy in North Carolina.

For more information, visit https://www.mcnc.org/what-we-do/connecting-north-carolina.

A.5.5 NC Institute of Medicine

The North Carolina Institute of Medicine (NCIOM) is an independent, quasi-state agency that was chartered by the North Carolina General Assembly in 1983 to provide balanced, nonpartisan information on issues of relevance to the health of North Carolina's population.

The NCIOM convenes task forces, or working groups, of knowledgeable and interested individuals to study complex health issues facing the state to develop workable solutions to address these issues.

The NCIOM Task Force on Health Care Analytics was convened at the request of the Division of Health Benefits (DHB) at NC DHHS. The Task Force defined and prioritized specific quality improvement measures of health and health care to be used by DHB to drive improvement in population health in North Carolina. The measures encompass physical and behavioral health/ IDD and consider public health and social determinants.

The measures are organized according to the quadruple aim and utilize standardized measurement data, are readily definable and outcomes based, and leverage existing federal and state measures where practical. The task force built on the previous work performed by the NC Medicaid, NC Division of MH/DD/SAS, and others to define and prioritize the measures. It is anticipated that the measures will evolve based on experience and published evidence and will need to be reviewed and updated on a regular basis.

The task force met monthly December 2016 through May 2017. To view the final report, visit http://nciom.org/wp-content/uploads/2017/10/HCA-FINAL-REPORT-2.pdf.

A.5.6 Non-ARRA Funding – The North Carolina Children's Health Insurance Program Reauthorization Act Grant

In February 2010, CMS awarded 10 grants to states to establish and evaluate a national quality system for children's healthcare, which encompasses care provided through the Medicaid program and the Children's Health Insurance Program (CHIP). This grant was funded by the Children's Health Insurance Program Reauthorization Act of 2009 (CHIPRA). The demonstration grant program ran through 2015.

North Carolina, via NC Medicaid and ORH, was awarded $9.2 million to work on three of the five categories of the CHIPRA Quality Demonstration Grant; A, C and D. North Carolina worked with pediatric and family practices within CCNC to build on a strong public-private partnership that has documented successes in quality improvement, efficiency and cost-effectiveness of care for more than 14 years. ORH received this funding from October 1, 2010 through December 21, 2015.

A.5.7 NC Office of Rural Health (ORH)

The NC ORH supports equitable access to health in rural and underserved communities. To achieve its mission, ORH works collaboratively to provide funding, training, and technical assistance for high quality, innovative, accessible, cost effective services that support the maintenance and growth of the State's safety net and rural communities. Since its inception in 1973, ORH has opened 86 community-owned, non-profit Rural Health Centers (RHCs) across the state. As of June 2020, ORH supports:

- 17 state-designated RHCs sites
- 31 Critical Access and Small Rural Hospitals
- 13 Farmworker Health Program grantees, and
- More than 141 other non-profit primary care safety-net organizations with community health grant and/or medication assistance funding and CMS rural health clinics with technical assistance and/or funding
- In State Fiscal Year 2020 (SFY 2020) ORH also placed over 92 medical, psychiatric, and/or dental providers in communities throughout the state and
- Provided oversight for 61 Statewide Telepsychiatry Program (NC-STeP) sites

North Carolina Office of Rural Health
Service Points and Coverage Map
SFY 2020

Service Points Receiving ORH Support

State Designated Rural Health Center
(17 Sites Covering 46 Counties)

Placement Activities
(248 Activities Covering 57 Counties)

Medication Assistance Program Grantee
(103 Sites Covering 93 Counties)

Critical Access Hospital
(20 Sites Covering 19 Counties)

Community Health Grantee
(108 Grantees Covering 100 Counties)

Small Rural Hospital
(11 Sites Covering 10 Counties)

Farmworker Health Grantee
(13 Grantees Covering 63 Counties)

Telepsychiatry Site
(61 Sites Covering 45 Counties)

Rural County (70 Counties)

Urban County (30 Counties)

*Numbers inside of symbols indicate number of sites, grantees, or placements, based on symbol

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Data as of June 30, 2020

State and federal funding, along with the ORH HIT Program technical assistance, enable communities to provide health care services to uninsured and underinsured North Carolinians and agricultural workers. Twenty Critical Access Hospitals receive funding to encourage the development of innovative approaches to improve care while lowering costs. Additionally, qualifying patients may take advantage of drug companies' free and low-cost drug programs through ORH's statewide Medication Assistance Program.

The provision of cost-efficient health care is increasingly tied to the ability to share timely and complete information among health care providers. In 2015, the NC General Assembly (NC GA) voted to change the direction of the NC HIE and directed NC DIT to establish a new HIE network that would be operated by a new state agency called the NC HIEA. Healthcare providers that receive state funds for the provision of health care must sign a participation agreement with the NC HIEA to submit and access patient data. The NC GA provided an appropriation of state funds for the HIE totaling $8 million recurring and $4 million non-recurring in both State Fiscal Year (SFY) 2016 and SFY 2017.

NC Session Law 2017-57 requires hospitals, physicians, physician assistants, and nurse practitioners that have an EHR system and render services paid for with Medicaid or other State-funded health care funds be connected to the HIE and begin submitting demographic and clinical data by June 1, 2018. Most other providers of Medicaid and State-funded health care services must submit demographic and clinical data by June 1, 2019. In 2018 Session Law, changes were made to the HIE Act which requires Prepaid Health Plans (PHPs), as defined in S.L. 2015-245,

to connect to the HIE per their contracts with the NC DHB. The law also clarifies that PHPs are required to submit encounter and claims data by the commencement of the contract with NC DHB. Local Management Entities/Managed Care Organizations (LMEs/MCOs) are required to submit encounter and claims data by June 1, 2020. Dentists and ambulatory surgical centers are required to submit clinical and demographic data by June 1, 2021. Pharmacies are required to submit claims data pertaining to State services once per day by June 1, 2021, using pharmacy industry standardized formats. Due to the Covid-19 pandemic, many of the connection dates have been extended, and a hardship extension process is in place for health care providers that need more time to connect.

The statewide HIE, called NC HealthConnex, is a major component of data needed for whole person care and population health. It is critical that safety net providers establish a participation agreement with the NC HIEA and connect to the HIE to continue their eligibility for state funding and to follow the state mandate to connect. Safety net providers utilization of the HIE also aids in reducing health care costs by cutting down on duplicate tests and procedures that may have already been performed by another provider. NC Medicaid and the ORH HIT Team are working together with the NC HIEA to connect NC's safety net providers to NC HealthConnex. Increasingly, these efforts are focused on health care providers seeking to connect for the first time and providers that need EHR technology to get connected.

North Carolina has become a national leader in safety net HIE connectivity. Since SFY 2018, the ORH HIT Team has led several initiatives related to EHR adoption and HIE connectivity while initiating several funding opportunities which support connectivity.

The ORH HIT Program has the following Projects for SFY 2020:
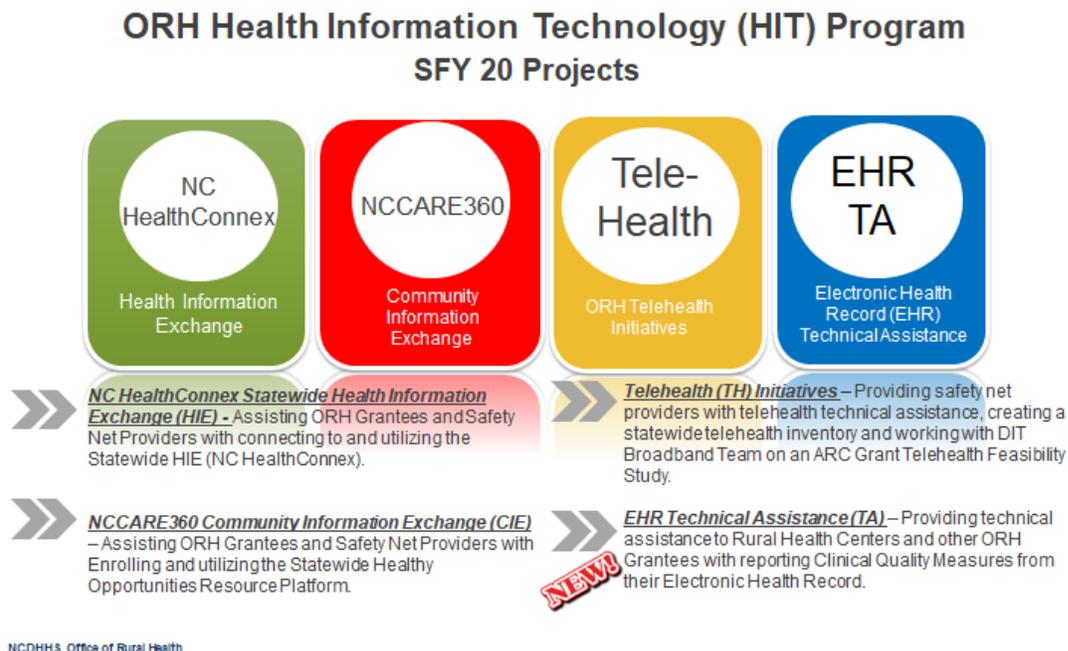
NC HealthConnex - In November 2016, ORH secured a commitment for two years of matching funding ($100,000) from The Duke Endowment to cover non-federal costs (90/10 federal/state match funds); however, in 2017 the NC GA approved recurring State match funds for the NC ORH HIT team. In February 2017, with assistance from the NC HIEA, ORH interviewed candidates for the Rural Health IT Program Manager position. In March 2017, ORH

worked with DHHS Human Resources Unit and the NC Office of State Budget Management to determine an equitable compensation package for the selected Rural HIT Program Manager candidate. The NC Office of State Human Resources (OSHR) reclassified the Rural Health IT Program Manager position to reflect skills and responsibilities which are different from the rest of the ORH management team. After the Rural HIT Program Manager reclassification, in August 2017, the Rural HIT Program Manager joined the ORH Rural HIT Team. In February 2018, the first Rural HIT Specialist was hired. In October and November 2018, The ORH HIT Team hired the other two Rural HIT Specialists to support the safety net and ORH grantees and partners with Health Information Technology needs and technical assistance with connecting to the statewide HIE called HealthConnex. In April 2019, ORH hired a Telehealth Specialist to focus on providing technical assistance to safety net sites interested in implementing telehealth solutions. Finally, the team recently created a new Health IT database administrator position to assist with the data needs for the ORH HIT Team. The HIT Database Administrator joined the team in November 2020 in a temporary role until permanent HIT team funding is secured.

- Overall, 99 percent of ORH grantee sites have an Electronic Health Record, 99100 percent of ORH grantee sites have a signed HIEA Participation Agreement and 70 88 percent have successfully connected to NC HealthConnex. The percentages of EHR adoption, Signed HIEA Participation Agreement and connectivity to NC HealthConnex by ORH grantee type can be seen in the figure below. Based on the high HIE connectivity metrics, the team is now focused on HIE value added service adoption as seen in the figure below.

- **CHW Data Repository** - In March 2020, as part of North Carolina's approved 1115 Medicaid Waiver to transform its current Medicaid delivery system ("Medicaid Transformation"), ORH supported a statewide Community Health Worker Initiative and partnered with a state university to create a data repository for Community Health Workers (CHWs) information. The goal of the data repository is to establish and assess the effectiveness of CHW core competency training and the CHWs role in improving the health outcomes of Medicaid beneficiaries.

- **NCCARE360** - The CHWs are primarily using the statewide coordinated care online network called NCCARE360, to refer patients for housing, linkage to primary care, employment, food insecurity, interpersonal violence and transportation. The ORH HIT team provides NCCARE360 technical assistance to CHW vendors and safety net providers

- **RHCs and HIT Projects** - ORH assists underserved rural communities to provide accessible primary medical services for all persons regardless of their ability to pay. To receive financial support, state designated Rural Health Centers (RHCs) must participate in a Medical Access Plan to provide health coverage to low-income (less than 200 percent of poverty), uninsured residents. The ORH HIT Team provides technical assistance to RHCs with Health IT systems and support with connecting to the NC HIE, NC HealthConnex. As of June 2019, 100 percent of the state designated RHCs have an EHR, 100 percent have a signed participation agreement with the HIEA, 79 percent are connected to NC HealthConnex, sending and retrieving patient data. The ORH HIT Team also provides technical assistance with enrolling providers in the statewide coordinated care platform for social determinants of health called NCCARE360, telehealth, and most recently Covid-19 vaccine case management.

- **CHGs and HIT Projects** - ORH's Community Health Grants improve access to health care services for NC's vulnerable (Medicare, Medicaid, underinsured and uninsured) residents through a Request for Application process, wherein non-profit primary care safety-net organizations such as Rural Health Centers, Community Health Centers, local non-profit health centers, free clinics, public health departments, and school-based health centers may apply for funding. The ORH HIT Team also provides Community Health grantees with Health IT technical assistance and getting connected to NC HealthConnex. As of June 2019, 100 percent of Community Health Grant sites have an Electronic Health Record, 99 percent have signed a participation agreement with the HIEA, and 71 percent are

connected to NC HealthConnex. The ORH HIT Team also provides technical assistance to community health grantees with enrolling in the statewide coordinated care platform for social determinants of health called NCCARE360, telehealth, and most recently Covid-19 vaccine case management.

Program Facts*

148
ORH grantees that are mandated to connect to NC HealthConnex

15%
ORH grantees enrolled in NC HealthConnex Notify Service

41%
ORH grantees enrolled in NC HealthConnex Diabetes Registry

88%
ORH grantees have successfully connected to NC HealthConnex

*Grantee reported measures were impacted by the COVID-19 Pandemic in Quarters 3 and 4

Overview:
The Health Information Technology (HIT) Team at the Office of Rural Health (ORH) strives to assist ORH grantees and safety net partners with using Health Information Technology to help improve patient care. The Health Information Technology Program works directly with the North Carolina Safety Net to assess needs and provide technical assistance throughout the state to improve the use of Electronic Health Records, Telehealth, NCCARE360, the first statewide coordinated care network and the use of NC HealthConnex, the state designated health information exchange (HIE).

Office of Rural Health Grantee Connection Status and Use of Value Added Services

22
ORH Grantees enrolled in NC Healthconnex Notify Service

61
ORH Grantees enrolled in NC HealthConnex Diabetes Registry

130
ORH Grantees connected to NC HealthConnex
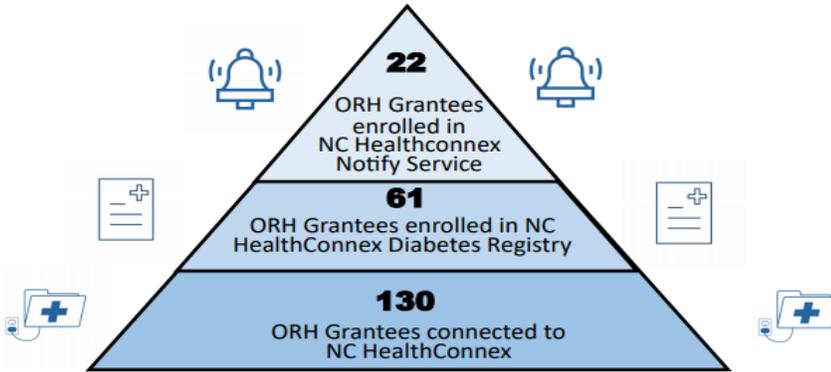
NC Rural Health Centers	NC Farmworker Health Program Sites	Critical Access Hospitals	NC Community Health Grants and Medication Assistance Sites
8% Subscribed to Notify	8% Subscribed to Notify	5% Subscribed to Notify	19% Subscribed to Notify
54% Enrolled in Diabetes Registry	33% Enrolled in Diabetes Registry	5% Enrolled in Diabetes Registry	48% Enrolled in Diabetes Registry
85% Connected to HIE	100% Connected to HIE	80% Connected to HIE	88% Connected to HIE

NCCARE360 Program Reach

60
Counties with grantees in process of connecting to NCCARE360

39
Counties with grantees Live in NCCARE360 platform
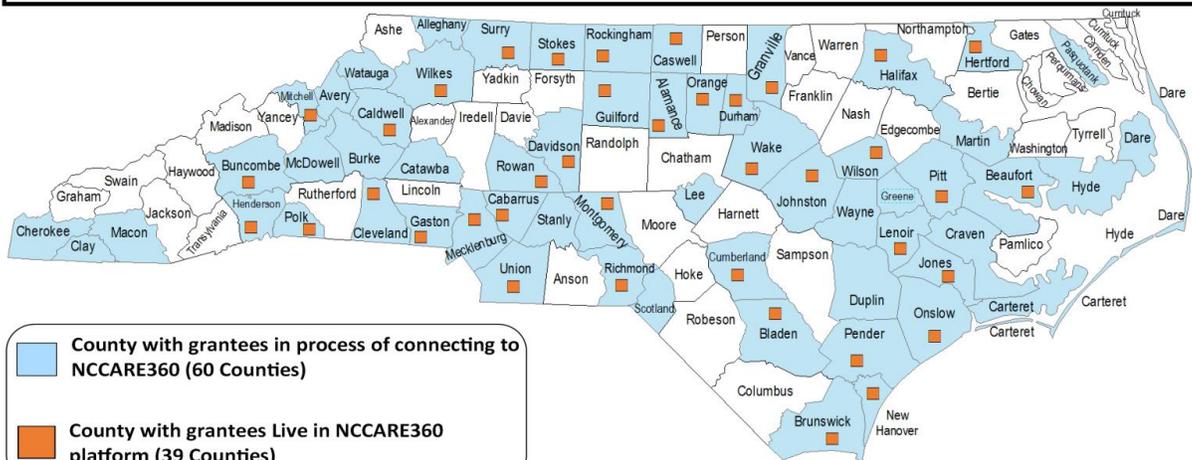
County with grantees in process of connecting to NCCARE360 (60 Counties)

County with grantees Live in NCCARE360 platform (39 Counties)

If you have further questions, please contact:
Health Information Technology Program
Phone: 919-527-6440
orh_hit@dhhs.nc.gov

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- **Telehealth** - Based on increased demand across the safety net for technical assistance with telehealth, ORH recently added a dedicated telehealth specialist in SFY 2019 to assist safety net providers with successfully implementing telehealth in a practice setting and to assist with an Appalachian Regional Commission one-year telehealth feasibility study and planning grant that was awarded in February 2019 to the NC State Broadband Infrastructure Office. Telehealth has become synonymous with health care during the COVID-19 pandemic, so the entire ORH HIT Team is providing telehealth technical assistance to safety net sites and other providers across the state to implement telehealth best practices.
- **EHR Technical Assistance** -
  - The ORH HIT Team also partnered with the NC HIEA, NC Area Health Education Centers (AHEC), and NC Medicaid to administer a Behavioral Health Electronic Health Record (EHR) Incentive Funding Program Grant for Behavioral Health (BH) and Intellectual and Developmental Disabilities (IDD) Providers. This funding program assisted certain behavioral health, mental health, and intellectual development and disability practices with purchasing Electronic Health Record (EHR) technology and establishing connectivity to the state-designated health information exchange, NC HealthConnex. This program awarded 181 BH/IDD organizations with approximately $1.96 million. The ORH HIT Team provided technical assistance to the 181 BH/IDD awarded organizations. Of the awarded Behavioral Health Organizations, 166 implemented an EHR and started the process of connecting to NC HealthConnex in SFY 19.
  - The ORH HIT Team also received a one-time $100,000 funding award from The Duke Endowment. This funding has been used to assist free and charitable clinics with connecting to NC HealthConnex and enabling clinics with EHR reporting for quality improvement and population health management. A total of 48 free and charitable clinics received technical assistance through this funding in SFY 19, and 100 percent of the sites are now in the process of connecting to NC HealthConnex.

ORH HIT-related Funding

In addition to funds approved through the FFY 2019-2020 IAPD, ORH also serves as a pass-through entity to fund a telehealth program called N.C. Statewide Telepsychiatry Program (NC-STeP). NC-STeP is funded through state appropriations and The Duke Endowment and was developed in response to **Session Law 2013-360** directing NCDHHS and ORH to "oversee and monitor establishment and administration of a statewide telepsychiatry program." NC-STeP allows referring hospital sites to utilize real-time interactive audio and video technology, telepsychiatry, for psychiatrists to provide timely psychiatric assessment and rapid initiation of treatment for patients experiencing an acute mental health or substance abuse crisis. The vision of NC-STeP is to assure that if an individual experiencing an acute behavioral health crisis enters an emergency department of a hospital anywhere in the state of North Carolina, s/he receives timely specialized psychiatric treatment through this program.

A.5.8 Other Stakeholder Activities

Academic medical centers, such as Duke University Health System, Vidant Health, University of North Carolina Health System, Wake Forest University Health Sciences, and other major hospital systems such as Atrium Health (formerly Carolinas Healthcare System), Mission Health Systems, Moses H. Cone Memorial Hospital, and WakeMed Health have invested in improving the capabilities of their integrated delivery networks (IDNs). They

have created or are enhancing the medical coordination and quality monitoring functionality of their IDN systems' environments. This includes more data sharing, integration and communications capabilities of the main hospital systems with EHR capabilities of affiliated and non-affiliated medical practices within their respective medical trading areas. In many cases this communication uses a peer-to-peer communication methodology.

A.5.8.1 North Carolina Healthcare Association (NCHA)

Public Health Syndromic Surveillance

The North Carolina Hospital Emergency Surveillance System (NCHESS) is a state-mandated program begun in 2004 as a public-private partnership between NCHA and the NC Division of Public Health. The mandate requires hospitals with 24/7 emergency departments (ED) to submit 23 data elements at least twice per day for syndromic surveillance purposes. The mandatory program is sometimes referred to as NCHESS-EDDI (Emergency Department Data Initiative) and there are currently 125 EDs participating in this portion of the program that account for approximately 4.7 million ED visits per year in North Carolina.

In addition to the mandatory NCHESS-EDDI program, NCHESS operates a voluntary program called NCHESS-IMC (Investigative Monitoring capability) that provides NCDPH epidemiologists with the capability for real-time surveillance of ED and inpatients for advanced public health surveillance. In addition to the 23 ED data elements, NCHESS-IMC also surveils Admit-Discharge-Transfer (ADT), vitals, labs, and microbiology data for inpatient, observation, and ED beds.

The NCHESS platform was certified to meet Promoting Interoperability Syndromic Surveillance requirements in 2017 to enable real-time, whole-hospital surveillance for all hospitals at no additional cost to the state. The primary benefits for participating in the NCHESS+ program for hospitals, NCDPH, and communities includes:
- Reduces burden on hospital staff during public health investigations by reducing call-backs and the need for chart abstractions and record review by hospital staff
- The only pathway for hospitals to meet the Promoting Interoperability Syndromic Surveillance objective
- Implementation of NCHESS+ at very little cost to hospitals, and no cost to the state
- More timely and effective public health intervention through early event detection and enhanced surveillance capabilities

The NCHESS+ system dramatically decreases the amount of time spent by hospital staff for each public health investigation, reducing hospital staff time from 30-60 minutes per episode to five minutes or less (and often no time at all). The NCHESS+ system also enables hospitals to voluntarily participate in NCHA-sponsored initiatives that promote better and more efficient care.

NCHESS is the designated pathway for eligible hospitals to meet the Promoting Interoperability Syndromic Surveillance objective as part of the [Medicare and Medicaid EHR Incentive Programs](#) and provides hospital-wide syndromic surveillance using 2015 Edition Promoting Interoperability technology certified for 170.315 (f)(2) public health surveillance by the Drummond Group. The name of the certified product is "CareEvolution, Inc HIEBus," and the CHPL product number is 15.04.04.1200.HIEB.15.00.1.171127.

For more information, visit http://epi.publichealth.nc.gov/cd/meaningful_use/syndromic.html.

North Carolina Healthcare Foundation's Carolina's Health Innovation Institute (CHI2) - AccessHealth NC; Hospital@Home, and Equity Data Analysis & Improvement

AccessHealth:

AccessHealth NC consists of 18 community-based networks of care across the state providing access to coordinated primary and specialty healthcare services for the low-income, uninsured. Networks, funded in part by The Duke Endowment, are composed of a broad range of healthcare providers and other health-related resources working in collaboration to leverage resources and align services. These provider networks provide medical homes and ensure timely, affordable, high-quality healthcare services for underserved North Carolinians, ensuring that these patients get the right care in the right place and at the right time. Network partners include hospitals, free clinics, certified rural health clinics, community health centers, physicians, medication providers, behavioral health providers, local health departments and many others. AccessHealth networks have been operating across NC for a number of years and have been branded locally by their community. The NC Healthcare Foundation provides technical assistance and collaborative learning opportunities to 18 networks across NC. An additional 12 networks are supported by the South Carolina Hospital Association in SC. Via patient matching done by NCHA staff; data programs maintained by NCHA are used to identify care trends across care settings.

About Hospital@Home

Home hospital programs have been operating in small numbers throughout the country for years. In November 2020, the Centers for Medicare and Medicaid (CMS) approved the Acute Hospital Care at Home Waiver. When authorized, a hospital can care for acutely ill patients at home as a substitute for traditional hospital care and be paid at the same rate as a hospital DRG. For a decade prior to the waiver, but highly accelerated in the past months since the Waiver's announcement, many hospitals have attempted or desired to launch home hospital programs. CHI2 is supporting hospitals in North Carolina by investigating models for data elements available for advancing hospital at home models pioneered under COVID-19 regulatory relief. This is one of several examples where CHI2 is used as a lab for innovative practices and new models of care as we adjust to a post-pandemic healthcare environment.

Equity Data Analysis & Improvement

NCHA released a statement in 2020 identifying racism as a public health crisis. Our Board has charged our membership and staff to initiate efforts to begin to address this important issue. NCHA has organized our efforts around data, education and innovation. Within the data realm, NCHA is collecting information on how hospitals in North Carolina collect race, ethnicity and language (REAL) data, the processes used to quality check that data for accuracy and completeness, how the data is stratified, and analysis used in strategic discussions; how it is used to address gaps in care, developing strategy, and clinical care innovations and improvements. NCHA intends to present to NC hospitals the result of our analysis to help standardize and improve the data collection process as well as spread innovative practices through pilot programs aimed at improving and standardizing data collection and improving the patient experience.

NCHA has also engaged in wide discussions with national and state partners to advance the conversation and make change in North Carolina.

Hospital Data and Health IT Collaboration

NCHA collaborates on additional hospital data- and health IT-related projects with a wide range of stakeholders every year. The point of these collaborations is to enable efficient use of existing technologies and develop new opportunities to improve the quality of patient care and lower the overall cost of care. By combining consumer and social determinate data with existing claims and clinical data, we can enhance predictive analytics and risk adjustment capabilities for work on pressing issues such as cancer research, opioid crisis management, behavioral

health and substance abuse care coordination, enhanced motor vehicle crash reporting improvements, trauma registry, and controlled substance reporting.

A.5.8.2 North Carolina Healthcare Information and Communications Alliance, Inc.

The North Carolina Healthcare Information and Communications Alliance, Inc. (NCHICA) was established by Executive Order #54 of the Governor of the State of North Carolina in 1994. A 501(c)(3) nonprofit corporation, NCHICA's mission until its closure in 2020 was to accelerate the transformation of the US healthcare system through the effective use of information technology, informatics, and analytics.

A.5.8.3 NC Emergency Medical Services

The North Carolina Office of Emergency Medical Services (NC OEMS) is the state regulatory agency for Emergency Medical Services. Emergency Medical Services functions at the local level through 100 county-based EMS systems and Cherokee Tribal EMS. These 101 EMS systems coordinate the service and care provided by the 460 EMS agencies and 40,000 EMS professionals functioning in NC. More than 1,900,000 EMS events occur in NC each year.

NC EMS regulations require an electronic patient care report to be completed on each EMS patient contact. This Pre-Hospital Medical Information System (PreMIS) is part of the larger NC EMS Data System, Continuum, which is operated by ESO Solutions. EMS agencies are required by 10A NCAC 13P to complete an electronic patient care report and submit it into the system within 24 hours of the event. EMS agencies can meet this electronic data submission requirement by using the free PreMIS Web-based data entry tool or through a commercial EMS data system which has been certified as a National EMS Information System (NEMSIS) Gold-Compliant vendor. The PreMIS system is based on the National EMS Data System standard adopted by all 56 US states and territories.

The NC EMS Data System has been exploring how EMS patient care reports could be provided to hospitals electronically, in an automated fashion, in exchange for more timely hospital outcome information. Partnership with NC Detect has allowed the NC OEMS to look into EMS patient outcome data from some limited hospitals, to which NC OEMS hopes to expand in the future. NCOEMS continues to maintain and enhance all data systems pertaining to medical record collection and regulatory data. These data systems are all integrated under one application, Continuum, which is utilized by all EMS agencies and personnel.

The NC OEMS has been active in the use of EMS prehospital data to assist with response to the opiate crisis currently in NC. Various other state agencies utilize EMS data to help track patients and locations where efforts must be strategically targeted to best combat this growing problem. In addition to the opioid items, expansion of Community Paramedic programs in NC has grown significantly across the state. These programs seek to provide patients alternative treatment options, linking the right patient, with the right care, at a lower overall cost to the healthcare system, all while maintaining the highest level of patient satisfaction. EMS data is also being utilized to assist in the response to the COVID-19 event, working in conjunction with Public Health to look at surveillance data. Prehospital EMS data continues to prove quite valuable in various events across the state.

For more information on NC OEMS, visit https://www.ncems.org/.

A.5.8.4 State-operated Healthcare Facilities

The Division of State Operated Healthcare Facilities (DSOHF) oversees and manages 14 state-operated healthcare facilities that treat adults and children with mental illness, developmental disabilities, substance use disorders, and neuro-medical needs.

All of the DSOHF facilities have significant interaction with local medical providers and facilities. Additionally, with the exception of the Neuro-Medical Treatment Centers, the DSOHF facilities also have extensive interaction community providers including MCOs, and IDD or behavioral health services. The ability to share information

within legal bounds, including 42 CFR for the Alcohol and Drug Abuse Treatment Centers, is important to continuity of care for the people we serve.

Currently, the only DSOHF facility that has an EHR is Central Regional Hospital, which has installed VistA from the VA system and made the necessary modifications for it to work within our current system. Central Regional Hospital is live and sending CCDs to NC HealthConnex.

A.5.8.5 State Chief Information Officer

James A. Weaver is state chief information officer (SCIO) and secretary for the NC Department of Information Technology. The SCIO has two primary areas of responsibility for information technology within the state. The first area is the establishment of statewide policy and technical direction. The second is to oversee the delivery of technology services for state agencies and other subscribers.

As a policy leader, the SCIO has participated in the statewide meetings of the Health Technology Consortium and its predecessor, the Governor's Task Force on Health and Information Technology. The SCIO also provided staff to act as subject matter experts for both groups. NC DIT remains engaged in the HIT planning and policy establishment processes for the state of North Carolina.

In addition to the policy role, the SCIO also has an operational role. NC DIT provides both mainframe and server-based hosting for state agencies and local governments; operates two large data centers, one in Raleigh and one in Forest City, NC; and provides application development services and a statewide voice and data network.

Since 2016, OSC and NC DIT have had direct oversight over the new NC HIEA, creating opportunities for furthering synergies between statewide health information exchange and other state data systems.

For more information on NC DIT, visit https://it.nc.gov/.

A.6 Health Information Exchange

A.6.1 NC HIE/NC HealthConnex

Historical Background:

Coordinated planning for statewide HIE in North Carolina began in early 2009, when the North Carolina HIT Strategic Planning Task Force (HIT Task Force) was established to forge a new vision of how health and healthcare can be improved by enhancing the use of health IT.

On behalf of Governor Bev Perdue, the Director of the Office of Economic Recovery and Investment (OERI) charged the HIT Task Force to engage stakeholders to develop a set of strategic guidelines by which North Carolina could apply for, and most effectively use, resources made available through ARRA. The HIT Task Force was composed of 17 members; however, more than 65 subject matter experts, staff, and members of the public were invited to participate in the seven open meetings that were held from April through June 2009.

At that time, North Carolina's state government examined the mechanisms and legal issues associated with assuring that the state retains appropriate oversight authority with respect to the statewide HIE. While essential to maintain the integrity of the multi-stakeholder collaborative process in setting policy for the statewide HIE, it is also the case that the state has a non-delegable role as the steward of State assets and the protector of the public interest that must be preserved. As a result, specific provisions in the NC HIE's original Articles of Incorporation and bylaws may not be altered, amended, or appealed without the governor's prior approval.

As noted above, the state of North Carolina has participated in the decision-making process around the statewide HIE network since its inception. Originally, with the NC HIE organization as an independent non-profit, former

DHHS Secretary Lanier Cansler acted as Chair of the NC HIE Board. Additionally, the North Carolina State HIT Coordinator, SCIO, and North Carolina's Medicaid Director acted as ex-officio members of the NC HIE Board. From early 2013 until early 2016, under CCNC leadership, the NC HIE Board of Directors was dissolved and replaced by five members of CCNC's Board of Directors, who represented physicians, hospital organizations, pharmacy and long-term care -interests, and, by virtue of the CCNC organization, the interests of Medicaid and the state-insured population. Since early 2016, under the NC HIEA, state leaders from both health and human services and information technology agencies, as well as representatives of provider organizations, sit on the legislatively-appointed NC HIEA Advisory Board to provide input into the NC HIEA's direction and operations.

The state also plays a significant role in supporting the coordination of HIE efforts. In June 2010, NC DHHS Secretary Cansler established the North Carolina Office of Health Information Technology (OHIT). OHIT coordinates HIT efforts across state government and other key stakeholders across the state and ensures consistency with federal policy and initiatives.

Finally, through its provision, payment, and monitoring of health care and population health, North Carolina state government collects and distributes a wide range of administrative and clinical health information. Accordingly, state agencies have worked with the statewide HIE, through its different governance structures, to develop cost-effective strategies to share resources and make their systems available through the statewide HIE network.

Current State:

The North Carolina General Assembly, the Department of Health and Human Services, and the North Carolina Health Information Exchange Authority (NC HIEA) are working to enhance medical decision-making and coordination of care, increase health system efficiencies and control costs, and improve quality and outcomes through the provision of secure, standards-based, state-level health information exchange with a statewide HIE Network, now known as NC HealthConnex.

Use of NC HealthConnex allows providers to view their patients' longitudinal health record in near real-time, consolidates data reporting requirements across the state to ease administrative burden and create efficiencies by eliminating duplicative data integrations, and provides participants with analytic insights for high risk patient populations. In addition to providing a bidirectional document exchange, NC HealthConnex offers value-added services that include a clinical notification service based on ADTs and CCDs, specialized registries for population health/public health and Meaningful Use, and a robust data quality program. NC HealthConnex is bidirectionally integrated with the NC Immunization Registry for improved delivery of immunization reporting through EHRs and receives automated daily lab feeds from several NC hospital lab systems to satisfy NC DPH and Meaningful Use requirements. As of May 2021, the NC HIEA is integrated with the NC Controlled Substance Reporting System (the State's Prescription Drug Monitoring Program system) via an application programming interface (API) to allow for single sign-on via NC HealthConnex to enable HIE participating providers to meet the statutory requirements of the STOP Act (NCSL 2017-74) and combat the opioid epidemic in North Carolina.

Milestones Since Inception:

The series of milestones noted in the timeline below show the progress of HIE from 2009 to 2019, spanning organization of stakeholders and development of the initial strategic and operational plans, to the operational and growing HIE network of 2019.

June 24, 2009: The HIT Task Force released Improving Health and Healthcare in North Carolina by leveraging federal health IT stimulus funds that outlined recommendations around the critical components of a successful health IT infrastructure and operations for a statewide HIE.

July 16, 2009: Governor Perdue signed Executive Order 19, charging the North Carolina Health and Wellness Trust Fund (HWTF) Commission with the responsibility for coordinating North Carolina's HIT efforts and creating the

North Carolina HIT Collaborative to make recommendations to the Commission regarding the development of the "NC HIE Action Plan."

September 11, 2009: HWTF submitted a Letter of Intent to seek Cooperative Agreement funds on behalf of North Carolina.

October 16, 2009: HWTF submitted Cooperative Agreement Application and "NC HIE Strategic Plan."

December 9, 2009: NC HIT Collaborative Privacy Workgroup released Briefing Paper: Developing a Statewide Consent Policy for Electronic HIE in North Carolina which addressed issues and making recommendations for next steps.

February 12, 2010: HWTF received Notice of Grant Award from ONC to fund HIE planning and implementation activities through 2014 and notification of approval of North Carolina State HIE Strategic Plan Version 1.

April 2010: A public-private partnership model to govern statewide HIE in North Carolina was recommended and approved; the NC HIE not-for-profit organization is incorporated.

May 14, 2010: The first board meeting of the new nonprofit, public-private partnership governance entity for NC HIE is held. The NC HIE Board of Directors is comprised of 21 CEO-level executives plus ex officio members from the state. The Board is co-chaired by NC DHHS Secretary Lanier Cansler and past CEO and Chairman of Glaxo, Inc., former CEO of Massachusetts General Hospital and healthcare advocate, Dr. Charlie Sanders.

Late May 2010: The NC HIE appointed multi-stakeholder Workgroups (Finance Workgroup, Legal and Policy Workgroup, Clinical and Technical Operations Workgroup, and Governance Workgroup) and drafts Workgroup Charters.

June 2010: NC HIE Workgroups began developing consensus-based recommendations to inform the Statewide HIE Operational Plan and to update the Statewide HIE Strategic Plan.

August 31, 2010: The NC HIE and HWTF submitted an updated Statewide HIE Strategic Plan and Operational Plan to ONC.

November 29, 2010: ONC approved North Carolina's Statewide HIE Strategic Plan and Operational Plan.

December 1, 2010: ONC transferred the Cooperative Agreement from HWTF to NC HIE.

December 22, 2010: Governor Perdue issued an Executive Order appointing the NC HIE as the State Designated Entity. Management and oversight of the State HIE Cooperative Agreement was transferred from HWTF to NC HIE. The process began within ONC to transfer the Cooperative Agreement to the NC HIE.

December 2010: HWTF in partnership with NC HIE and North Carolina Community Care Network submitted a completed application for the Challenge Grant.

January 27, 2011: ONC awarded HWTF a $1.7 million Challenge Grant to deploy medication management services.

First Quarter 2011: The NC HIE workgroups continued to meet focusing on the following: The Governance Workgroup's focus shifted to their primary tasks in this phase: 1) who will participate in the Statewide HIE; 2) rules and policies for participation; and 3) enforcement and oversight. The Finance Workgroup began focusing on developing the work plan for the ongoing sustainability effort. The Clinical and Technical Operations Workgroup began their efforts by focusing on these tasks: 1) refining the requirements for core and value-added services; 2) providing input on request for proposals; and 3) helping facilitate deployment and integration of HIE services into the health system. The Legal and Policy Workgroup focused on drafting consensus legislation that would facilitate an opt-out consent model for the exchange of patient information. April 1, 2011: ONC transferred the Cooperative Agreement to the NC HIE effective December 1, 2010.

April 25, 2011: The NC HIE released the request for proposal (RFP) for the technology service vendor to partner with the NC HIE in providing the technical services to execute the plan developed by the consensus of the wide array of healthcare interests in North Carolina. Over 30 vendors completed Letters of Interest with 17 vendor or vendor teams submitting formal proposals.

June 27, 2011: Senate Bill 375 – Facilitate Statewide Health Information Exchange passed both the House and Senate. It was signed into law by the Governor on June 27, 2011. The bill is designed to facilitate and regulate the disclosure of protected health information through the voluntary, NC Health Information Exchange (NCHIE) network. http://www.ncga.state.nc.us/Sessions/2011/Bills/Senate/PDF/S375v0.pdf

July 27, 2011: The NC HIE filed its application for tax exempt status.

August 2, 2011: After the highly structured review of the technology service proposals, the NC HIE and the Capgemini/Orion Health consortium executed a Master Development Services Agreement and related Statement of Work. NC HIE and the Capgemini consortium are working together to deploy the HIE infrastructure and on-board participants first quarter 2012.

August 9, 2011: ONC transferred the Challenge Grant to the NC HIE.

September 28, 2011: Blue Cross and Blue Shield of North Carolina (BCBSNC), in collaboration with the North Carolina Health Information Exchange (NC HIE) and Allscripts, launched the North Carolina Program to Advance Technology for Health (NC PATH)—a program created to place North Carolina at the forefront of healthcare reform. NC PATH will equip physicians with Allscripts EHR software and support and connect healthcare providers across the state through NC HIE. Designed to meet the needs of both physicians and patients, NC PATH will move North Carolina into a new era of quality healthcare. The NC HIE will manage the program administration and facilitation as well as support all members of the healthcare community in North Carolina regardless of their EHR technology. BCBSNC is donating the cost for the implementation of an Allscripts EHR as follows: For in-network providers, BCBSNC will cover 85 percent of the software cost, support and maintenance costs and the NC HIE connectivity and membership fee for a period of five years. The provider is responsible for the remaining 15 percent. For free clinics, BCBSNC will cover 100 percent of the software cost, support and maintenance costs and NC HIE connectivity and membership fee costs for a period of five years.

March 1, 2012: NC HIE network goes live and connects a dozen independent primary care providers through the NC PATH partnership.

March 16, 2012: N3CN becomes the first Qualified Organization (QO) and will serve as an organizing entity to connect providers and hospitals with NC HIE.

March 31, 2012: North Carolina Community Health Center Association announces plans to connect safety net providers to NC HIE.

May 1, 2012: Solstas Labs and NC HIE partner to provide labs through NC HIE.

May 3, 2012: NC HIE received 501(c)(3) status.

July 30, 2012: NC HIE launches Direct Secure Messaging.

August 31, 2012: NC HIE completes NwHIN conformance testing.

September 7, 2012: LabCorp and NC HIE partner to provide labs through NC HIE.

October 8, 2012: NC HIE board of directors approved a merger proposal from N3CN.

December 10, 2012: N3CN board of directors approved the merger with NC HIE.

December 12, 2012: Halifax Regional Medical Center is the first hospital to go live on the NC HIE network.

February 1, 2013: The merger of CCNC and NC HIE is finalized. NC HIE becomes a subsidiary of CCNC and appoints Michael Jongkind of CCNC as interim CEO. A new board of directors composed of existing CCNC board members is established. 2013-2014: Few records on milestones while under CCNC governance were transferred to the NC HIEA. However, during 2013-2014, the NC HIE went from zero to 30+ hospitals contracted to participate by October 2014, including the UNC Health Care System, which accounted for eight hospitals and over 600 ambulatory facilities. In summer 2014, the first hospitals went live with NC HIE's HISP/Direct Secure Messaging service, integrated directly into their Epic and Meditech EHR systems.

April 2015: NC DHHS performed an assessment of the state of the HIE under CCNC, and due to concerns about sustainability, recommended the HIE be brought under state governance.

September 2015: The North Carolina Health Information Exchange Authority (NC HIEA) was created in Session Law 2015-241 s. 12A.4 and 12A.5 in September 2015 to oversee and administer North Carolina's HIE. The legislation also mandates connection/participation/data contribution by health care providers in North Carolina that receive Medicaid and other state funds for provision of health care services.

February 2016: The NC HIE was transferred from the Community Care of North Carolina (CCNC) / North Carolina Community Care Networks (N3CN) structure to the new state agency, the North Carolina Health Information Exchange Authority (NC HIEA).

March 2016: The first participant contracts were executed with the NC HIEA, and integration/re-connection work began for legacy and new participants.

September 2016: The NC HIEA rebranded the State-Designated HIE network from NC HIE to NC HealthConnex.

September 26, 2016: The NC HIEA Advisory Board, comprised of health care and state government leaders appointed by the NC General Assembly, convened for the first time.

October 2016: The NC HealthConnex statewide provider directory is launched, and contains 5,000+ provider direct secure messaging addresses among other data such as specialty, address, phone/fax, etc.

November 22, 2016: The NC HIEA Behavioral Health Working Group has their inaugural meeting to discuss the challenges and opportunities of this community connecting to NC HealthConnex.

December 2016: At the recommendation of the NC HIEA Advisory Board, the NC HIEA adopted a scalable data standard that is based upon Meaningful Use Data Elements, the Continuity of Care Document (CCD), and Consolidated Clinical Document Architecture (CCDA). The NC HIEA also hosted the inaugural Disease Registry Working Group meeting.

January 2017: At the recommendation of the NC HIEA Advisory Board, the NC HIEA resolved not to charge a fee for connection and submission of data to comply with the law and developed a second Participation Agreement to allow for submission-only participation with NC HealthConnex. This agreement allows a Participant to be in compliance with the connection and reporting legislative mandate but does not allow the Participant to query the HIE or utilize its value-added features.

March 2017: The NC HIEA issued the 2016 NC HIEA Annual Report, noting that 835 unique facilities were connected to NC HealthConnex, and the HIE network contained patient data on 3.5 million unique patients—over one-third of the state population (as of December 31, 2016).

April 2017: The NC HIEA begins a pilot program with three behavioral health practices – RHA Services, Alexander Youth Network, and Monarch to develop a connection strategy for behavioral health/IDD practices as well as behavioral health data target. An added benefit of the pilot is to better understand what data elements are

appropriate for collection from behavioral health providers, what information is relevant for BH/DD providers to receive from a patient's clinical record, and what types of information physical health care providers would like to have access to from behavioral health/IDD providers.

May 2017: A provider directory update goes out to all participants, containing 11,000+ Direct addresses of NC health care providers.

June 2017: Session Law 2015-241 s. 12A.5 is amended to push out mandated dates for required connection/participation/data contribution by health care providers in North Carolina that receive Medicaid and other state funds for provision of health care services. Three major health care systems (Duke, Novant, and Carolinas Healthcare, now Atrium) and Coastal Connect, a regional HIE, sign agreements to begin onboarding to NC HealthConnex.

July 2017: NC Medicaid and HIEA receive approval for an advanced planning document to accelerate onboarding to NC HealthConnex in an amount not to exceed $45,146,310 at 90 percent federal financial participation ($40,631,679 federal share) for federal fiscal years 2017-2019. The federal funding will supplement staffing costs, provide training and education resource funds, and invest significant funds in integration costs.

September 2017: The NC HIEA holds its inaugural Dental Working Group meeting in partnership with the North Carolina Dental Society to work with dental practices and their EHR vendor partners to formulate a connection strategy for dentists.

October 2017: The NC HIEA hosts a virtual EHR Vendor Day with over 45 EHR vendor participants, NC DHHS Division of Medicaid, and CMS representation to ensure that all EHR vendors servicing the state of North Carolina are aware of the HIE Act's requirements and the key considerations that are necessary for connection and the benefits of participation.

Additionally, Section 11A.5.(h) of S.L. 2017-57 required the NC DHHS, the NC Department of Information Technology (DIT), and the Division in the Department of State Treasurer that manages the State Health Plan for Teachers and State Employees (SHP) to conduct a joint study of the feasibility and appropriateness of requiring providers and entities other than hospitals, licensed physicians, physicians assistants, and nurse practitioners to submit demographic and clinical data through the HIE.[1] Additionally, the study must address the feasibility and appropriateness of requiring entities other than prepaid health plans (PHPs) and local management entities or managed care organizations (LME/MCOs) to submit encounter and/or claims data through the HIE by the current statutory deadline of June 1, 2019.[2] The study kicked off in October with key representatives of each agency.

December 2017: The NC HIEA releases milestones for connectivity with over 1,200 facilities connected, over 400 additional facilities in onboarding, and an increase in unique patient records to 4.25 million. Mission Health in western North Carolina and its regional HIE go live as well as the connection to Georgia's HIE, GaHIN, via the eHealth Exchange.

Additionally, NC HealthConnex experiences a 75% increase in the number of CCDs exchanged per month during 2017 and is working to build connectivity with over 60 different electronic health record vendors. The Behavioral Health pilot winds down and additional behavioral health practices begin to onboard to NC HealthConnex.

March 2018: The listing of secure email addresses grows to over 19,000 for the provider directory. The NC Diabetes Specialized Public Health Registry, developed in partnership with the Division of Public Health, opens to

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[1] See N.C.S.L. 2017-57 Section 11A.5.(h). See also N.C.S.L. 2017-57 Section 11A.5.(b).

[2] Id.

support registration for Meaningful Use and will be available by June 1 to DPH for population health purposes. The NC HealthConnex Diabetes Registry supports attestation for Meaningful Use Stage 3 and Modified Stage 2 for eligible hospitals, eligible critical access hospitals, and eligible professionals as well as Medicare Quality Payment Program Advancing Care Information for eligible clinicians.

Additionally, the NC HIEA holds its first Use Case Workgroup to facilitate use case ideation among a diverse group of health care industry stakeholders.

May 2018: The N.C. Department of Health and Human Services Office of Rural Health (ORH) and NC Medicaid partners with the NC HIEA to launch a program that will assist behavioral health, mental health, and intellectual development and disability practices who participate in Medicaid with purchasing EHR technology and establishing connectivity to NC HealthConnex. Over 260 practices apply during the May application period.

Two resources are hired by the NC HIEA to support onboarding Medicaid practices to the North Carolina Immunization Registry through their technical integration with NC HealthConnex.

NC HealthConnex goes live with the Veterans Administration HIE, VHIE, via the eHealth Exchange.

June 2018: First legislative date for connectivity passes with over 2,500 facilities connected (including 83 of 119 hospitals) and over 3,000 facilities in the onboarding queue. The types of providers connecting include over 1,400 primary care practices, all 39 Federally Qualified Health Centers, over 400 behavioral health/IDD practices, all 96 county health departments, and over 1,600 specialists.

The number of unique patient IDs grows to 5.17M and the number of EHRs engaged increases to 150 with over 40 now live.

Current information available for exchange includes patient demographic data, encounters, procedures, medications and allergies, immunizations, diagnosis, lab results, pathology results, and radiology results via ADTs and HL7 messaging as well as CCDs.

Additionally, the NC HIEA completes a pilot program for its clinical notification service and begins plans to roll out to full participants in the third quarter of 2018 at no cost to its participating health care providers.

The HIE Feasibility Study is completed with plans to submit to the NC Joint Legislative Oversight Committees on Health and Human Services and Information Technology in early July.

Finally, because ensuring high-level data quality is foundational to building a mature and reliable HIE, the NC HIEA develops a robust data quality program to evaluate participants' data quality while establishing a connection to NC HealthConnex. In addition, the data quality program will also identify data anomalies that may occur after the NC HealthConnex process is complete. Evaluating NC HealthConnex data on a routine basis will further ensure that NC HealthConnex serves as a gold standard for health information of patients serviced by North Carolina providers. The data quality program is scheduled to begin in July with a representative sample of NC HealthConnex participants focused on volume and frequency with accuracy of the data provided being added later in 2018.

September 2018: NC*Notify, the clinical event notification service powered by NC HealthConnex, officially launches, providing event notifications to enrolled participants of their patients' care outside of their organizational walls or EHR.

In preparation for Hurricane Florence, the NC HIEA works with neighboring state leadership and the national eHealth Exchange to connect to five intra- and interstate HIEs to assist with continuity of care for those displaced by the storm and seeking care outside of their communities. Within three days, NC HealthConnex stands up connections with Coastal Connect HIE (Wilmington, NC), ETHIN (East Tennessee), GRAChiE (Augusta, Ga.), MedVirginia (Richmond, Va.), and SCHIEX (South Carolina).

October 2018: NC DIT and NC DHHS provide an interim report to the NC General Assembly on plans to connect North Carolina corrections facilities—including prisons, jails, juvenile detention centers, and associated rehabilitative centers—to NC HealthConnex to facilitate improved continuity of care for inmates.

December 2018: The number of health care facilities connected to NC HealthConnex grows to more than 4,500, including 97 hospitals, and representing over 6.3 million unique patients.

The NC HIEA announces an upgrade of its core HIE infrastructure to the InterSystems HealthShare platform, planned for spring 2019. Standout benefits of this new platform include enhanced data mapping and reporting, and improved NC HealthConnex Clinical Portal and consent capabilities.

March 2019: A focus on recruiting behavioral health and long-term care providers to better facilitate electronic transitions of care across the Medicaid provider community has resulted in 1,777 Behavioral Health facilities and 444 Skilled Nursing and Long-Term Care facilities live or in the process of onboarding to NC HealthConnex. The total number of connected facilities is more than 4,600,

April 2019: The NC HIEA publishes Roadmap 2021, a strategic guide for the next three years that highlights key focus areas to support improving the health and well-being of North Carolinians. Roadmap 2021 details five strategic areas for 2019-2021, an array of initiatives embedded in each one, and how the NC HIEA will measure progress along the way.

Migration to the new HIE platform is complete and includes immediate benefits for participants like an improved NC HealthConnex Clinical Portal and self-reporting tools for integrated Direct Secure Messaging users. This large-scale effort included a rebuild of 134 interfaces and backload of all data from March 2016.

NC*Notify version 2.0 launches, offering enrolled participants more information and delivery options. Additional fields available on the result files include primary diagnosis, chief complaint, and visit number. The service also begins accepting subscription files and sending results via Direct Secure Messaging (DSM). Forty-four Participant organizations have enrolled as of May 15, 2019, representing monitoring of more than 650,000 patients.

Work continues on integration of the NC Controlled Substances Reporting System (CSRS) with NC HealthConnex, planned for June 2019. The first phase of the integration will allow HIE participants to access patient reports in the CSRS via the NC HealthConnex Clinical Portal, preventing sign-on to another disparate system in the clinical workflow to comply with the STOP Act (NCSL 2017-74) and combat the opioid epidemic in North Carolina. *This work was paused until 2020.*

October 2019: The HIEA delivered a report jointly authored by the Department of Health and Human Services, the Department of Information Technology's Government Data Analytics Center, and the Department of Public Safety on participation of state prisons, county jails and juvenile facilities in NC HealthConnex (SL 2018-76).

December 2019: The HIEA team reports that over 2,000 Participation Agreements were executed in 2019 and that over 1,000 health care facilities are live in production, bringing total facilities live as of December 31, to 5,256. Patient records at year end surpass 9 Million.

Also, in December, two key intra-state connections are completed. The first being the Department of Defense Medical Information System (DMIX) via the eHealth Exchange trusted framework. The HIEA now has active connections to the Veterans Administration HIE (VHIE), and five additional neighboring state HIEs including etHIN (Eastern Tennessee Health Information Network), GaHIN (Georgia's state-designated HIE) GRAChiE (Augusta, GA), MedVirginia (HIE serving the Commonwealth of Virginia), and SCHIEx (South Carolina's statewide HIE). These connections allow for patient data from these health information organizations (HIOs) to be queried

from within the NC HealthConnex clinical portal, and vice versa, when North Carolina patients seek care outside their communities due to travel, natural disasters, or other reasons. The second key connection is the nationwide network called Patient Centered Data Home (PCDH), a cost-effective, scalable method of exchanging patient data with 45 health information exchanges (HIEs). Based on triggering episode alerts, which notify providers a care event has occurred outside of the patient's "home" HIE and confirms the availability and the specific location of the clinical data, enabling providers to initiate additional data exchanges to access real-time information across state and regional lines and the care continuum.

Onboarding and maturation of the NC*Notify event notification service continues as well. As of December 1, 2019, the service is monitoring 1.4M patients and generating over 100,000 alerts monthly.

With the support of federal financial participation funding through CMS, the HIEA launched enhanced participant training program with NC Area Health Education Centers (NC AHEC) on use of NC HealthConnex and its features within a provider's established workflow, including how to leverage NC HealthConnex for meeting quality program requirements for Medicaid and Medicare.

May 2020:

The NC HIEA completes an upgrade to its HealthShare platform that will enable the Fast Healthcare Interoperability Resources (FHIR) standard to be utilized as an additional means to exchange health care information with health care providers and health plans.

The NC*Notify service completes an upgrade to V3 enabling near, real time notifications to be shared via HL7. Another version, V3+, is scheduled to go live in the latter part of the summer and will include enhancements to the service's functionality and capacity, including additional data formats and delivery methods and inclusion of more HIE data and relevant health data from other state systems.

Additional initiatives to leverage HIE data for disease-specific community health and research efforts are also underway. These include:
1. The Lincoln Project—a research initiative to better understand the medical, social and environmental determinants of Out of Hospital Premature Natural Death in Eastern North Carolina, in order to better design, implement and evaluate successful intervention programs;
2. Provision of data to the University of North Carolina and the NC Community Health Center Association for use in addressing colorectal cancer patient care and screening activities in community health centers; and,
3. Provision of clinical measure data to inform effective disease management by care teams participating with the statewide Heart Health Now Program, supported through a grant through the Agency for Healthcare Research and Quality.

June 2020:

New legislation NCSL 2020-80 (HB1023) passed in June 2020 provided additional funding via the federal CARES Act to enable NC HealthConnex to support the COVID-19 response by building bidirectional data exchanges and patient matching services between NC HealthConnex and the State's public health agencies.

– **CARES Act Deliverables to Support the State's COVID-19 Public Health Response**

NC DETECT (statewide disease surveillance) - The NC HIEA and the NC DPH teams partnered to enhance disease tracking and surveillance via the NC Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT) to better monitor the ongoing impact of COVID-19 in North Carolina.

COVID-19 Lab Result Routing via NC*Notify – The NC HIEA has enhanced its NC*Notify event notification service to allow for distribution of COVID-19 lab results to participating health care providers for patient care. The lab result routing includes Positive results reported to DHHS electronically by all reference labs.

Long Term Care Risk Analysis (pilot program) - A risk model originally developed by SAS Institute for the Centers for Medicaid and Medicaid Services (CMS) was tuned to county level inputs. Assists in containment of COVID-19 cases and prioritizing public health interventions. Report included key outputs from the model:

o Composite risk score for each long-term care facility (Skilled nursing); Probability of having breakout vs. not having
o Uses several public and NC specific data sets
- County-level disease data
- NC DHHS outbreak data
- Regulatory data from CMS
- CDC data for COVID and PPE

Automate reporting to the Covid Vaccine Management System (CVMS) – In late 2020, the NC HIEA began work with DHHS and vendor partners to build out automated reporting to the State's vaccine management system to reduce the burden on the health care community of dual entry of vaccines administered into the electronic health record (EHR) and the CVMS database. Since go-live in mid-February, over 550,000 vaccine records have been processed via these integrations.

Additional 2020 Accomplishments:

– **Data Connections**
  o 6,800-plus health care facilities live submitting data, including 120 hospitals
  o 5,000-plus health care facilities in onboarding
  o 120 million-plus continuity of care documents (CCDs) exchanged – 700k messages flowing daily
  o 11 million-plus unique patient records
  o 60,000-plus providers with contributed records
  o 80+ electronic health record vendors live
  o 22 border and interstate HIEs connected + the joint federal HIE (Veterans Administration and the Department of Defense)
– Continued to enhance the **NC*Notify event notification service** based on Admission, Discharge and Transfer (ADT) messages to assist NC HealthConnex participating providers in knowing where their patients touch the health care system outside of their organization's walls. In 2020 the service added real-time alerting and a user interface for participants to manage the alerts generated for their patients as well as COVID lab results. As of March 31, 2021, the service is monitoring over three million patients and generating over one million alerts monthly.
– Developed **online training program** in partnership with the NC Area Health Education Centers (NC AHEC) on use of NC HealthConnex and its features within a provider's established workflow, including how to leverage NC HealthConnex for meeting quality program requirements for Medicaid and

Medicare. In 2020, 91 onsite trainings and 167 virtual trainings were completed across the state. In one year, the partnership enabled the build out of a library virtual training modules for health care providers on various NC HealthConnex services.

- Completed a **data quality roadmap** to support data initiatives across the state and help providers improve the quality and integrity of the data submitted to NC HealthConnex from electronic health records along with a detailed data target and onboarding packet.

CSRS Integration to NC HealthConnex - Per the Strengthen Opioid Misuse Prevention (STOP) Act of 2017 (NCSL 2017-74), health care providers in North Carolina who prescribe controlled substances must access a patient report from the CSRS to verify a patient's prescription-fill history of controlled substances prior to writing prescriptions for targeted controlled substances. The STOP Act also required an integration between the state's prescription drug monitoring program, called the Controlled Substance Monitoring System (CSRS), and the HIE, NC HealthConnex. The NC HIEA partnered with the N.C. Department of Health and Human Services Division of Mental Health to build a single sign-on leveraging an Application Programming Interface (API) from the NC HealthConnex clinical portal to the state's prescription-drug monitoring program, Controlled Substances Reporting System. This integration allows the end user already accessing the longitudinal NC HealthConnex clinical portal to view the CSRS report, along with the risk scores, without leaving the HIE portal.

April 2021: Conditions of Participation (CoP) for Hospital Electronic Notifications

The Centers for Medicare and Medicaid Services (CMS) requires that all hospitals meet its conditions of participation for electronic notifications. Hospitals must ensure that they make reasonable efforts to send electronic notifications to primary care providers, skilled nursing facilities and other health care facilities at the request of either the provider or patient.

NC*Notify, the state-designated health information exchange's subscription-based notification service, offers the ability to meet the requirements of this rule. To meet the CoP's rule language, hospitals may need to add a few data elements to their admit, discharge and transfer feeds. These additions are needed to include the defined information required for notifications and for NC*Notify to accurately route notifications to the proper providers.

- See technical details on CoP requirements for ADT fields.
- See checklist for CoP compliance.

May 2021: MIPS & Bi-Directional Measure

The NC HIEA is collaborating with AHEC to educate NC HealthConnex participants about this newly-added measure (December 2020) to the Promoting Interoperability program. Work underway includes establishing training materials, building technical capability (for those who may not currently have it) and workflows to support participant engagement in bi-directional exchange via NC HealthConnex for all patients seen by the eligible clinician and for any patient record stored or maintained in their EHR. A TeleTown Hall webinar is scheduled for late May 2021.

A "Connected Participants" data table and corresponding map, as shown below, are available on the NC HIEA website.
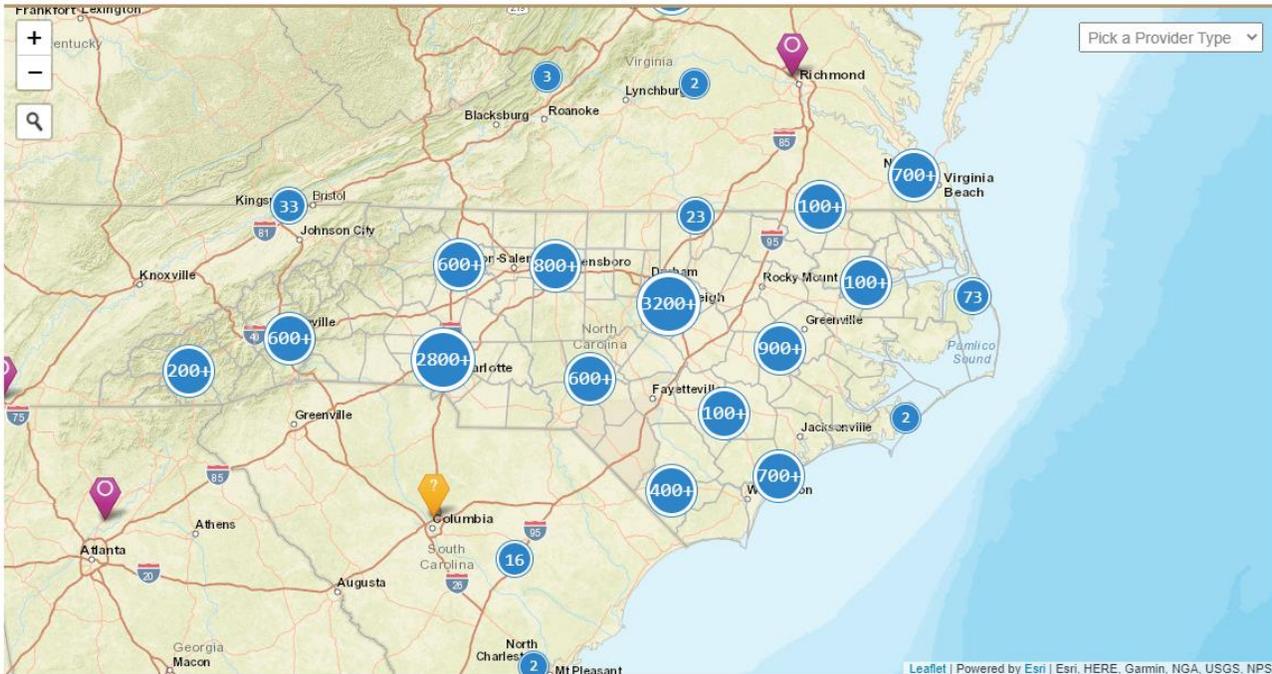
A.6.2 Other HIE Initiatives in North Carolina

Coastal Connect Health Information Exchange (CCHIE)

CCHIE was established in 2009 by provider stakeholders: Dosher Memorial, New Hanover Regional Medical Center, Pender Memorial, Southeastern Health, and Wilmington Health. In 2017, Onslow Memorial joined CCHIE as a stakeholder hospital. The HIE technology (Health Catalyst, formerly Medicity) was deployed in 2011, creating the secure data sharing network for unaffiliated providers in southeastern North Carolina. The exchange supports patient-centric care transition between providers, reduces redundant testing, realizes efficiencies in workflow and improves patient outcomes. CCHIE is governed by a multidisciplinary board composed of representatives from stakeholder hospitals, community practices, the state Medicaid management entity, and a community representative. CCHIE's sustainability model is supported by its founding stakeholders as well as ambulatory provider participation fees.

Over 2.1 million patient encounters are indexed on the HIE's Community Health Record tool which allows HIE participants query-retrieve access to care documents from over 301 data-contributing sites, which represent acute, ambulatory, diagnostic, public health, and post-acute facilities. Data shared include lab results, pathology results, radiology results, discharge summaries and other departmental/transcription-like reports, encounter information, demographics and CCD's. CCHIE's initial footprint of 11 counties has expanded across the state and to South Carolina through HIE to HIE connections and eHealth Exchange connection with Vidant Health, Duke Health, UNC Health Care, NC HealthConnex, DaVita Dialysis Centers, SCHIEx (South Carolina HIE), Mission Health and Atrium Health. For patients indexed on CCHIE, care summaries can be queried-retrieved from these data

connections for the improvement of care transition. Other services provided by CCHIE are real-time ADT encounter notifications, results delivery, and order-results.

CCHIE Data Consumers

CCHIE Data Contributors
and Data Connections
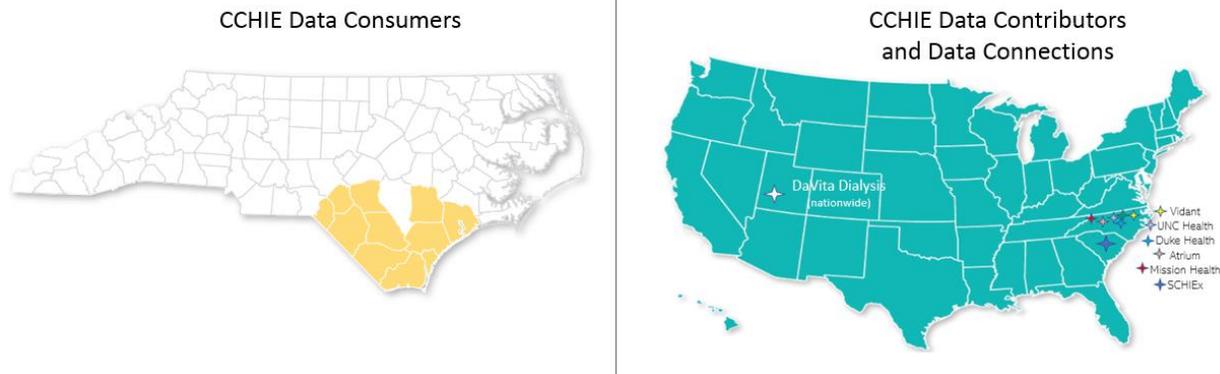
CCHIE participants have confirmed their value to accessing to patient information at the point of care as improving the experience for both patients and clinicians. For more information, please visit www.coastalconnect.org.

Mission Health Connect

History

For almost a decade (2006 – 2014), Mission Health System participated in WNC Data Link. WNC Data Link was a pioneer in the Health Information Network / Exchange arena with a primary focus upon regional connectivity and population health. In 2014 with the growing regulatory demands related to Meaningful Use WNC Data Link chose to sunset and Mission Health Connect was established. In February 2019, Mission Health System became the NC Division (NCDV) of HealthCare Corporation of America (HCA).

Drawing from over a decade of interoperability experience, Mission Health Connect serves as the Regional HIE for western North Carolina. Regional HIE designation allows external participating entities the option to automatically be in compliance with state law connection requirements to NC HealthConnex, unless they prefer to directly connect to the state. Striving to improve the overall health and wellbeing of the regional and state-wide population, Mission Health Connect allows health care information to be electronically shared bi-directionally between different facility and provider medical record systems - while maintaining privacy, security and accuracy of shared protected health information (PHI).

Current State

Mission Health Connect contains over 1.4 million unique patients from within the expansive network of the HCA NCDV, formerly known as Mission Health System and other contributing participants. The HCA NCDV is comprised of 6 hospitals and 120 ambulatory practices that service the far western 18 counties of North Carolina. Directly integrated external connections to other health systems/HIE connections now extends to 59 of the total 100 counties in NC. These connections include access to other networks with the state know as Atrium Health CareConnect, Adventist Health System (Park Ridge Health), and Coastal Connect HIE. The reach of Mission Health Connect integrated with NC HealthConnex, as well as being an eHealth Exchange participant. The eHealth Exchange participation provides current connections with UNC Healthcare and the national integrations of the Veterans Administration and DaVita Dialysis. Mission Health Connect has expanded connectivity on a national level with CommonWell.

For more information, please visit https://MissionHealth.org/HIE

Atrium Health CareConnect

Atrium Health CareConnect is a health information exchange (HIE) that provides a secure method to share patient information between providers at participating facilities. CareConnect provides two methods of providing information to outside organizations (those other than Atrium Health):

    1) CareConnect's HIE web-based portal
    2) bi-directional exchanges set up between Atrium Health and other interested organizations

CareConnect has been in existence since 2011. Today, the portal is used and accessed by over 275 non-Atrium partner organizations. CareConnect is also connected to 30 external organizations where those organizations can access information stored in our HIE's repository including Atrium Health clinical and demographic information. A list of partner connections and users' organizations on our website: https://www.atriumhealthcareconnect.org/-/media/carolinas-care-connect/participatingpartners.pdf

A.7 MMIS and Current HIT/HIE Relations with MITA Assessment

NCTracks and a new reporting and analytics solution include a data warehouse, decision support, business intelligence and fraud and abuse detection functionality. In 2010, it was stated in the original SMHP that part of the challenge for the HIT/HIE Project would be the ability to make modifications to NCTracks to support the HIT/HIE environment. DHHS is also coordinating its efforts with the planned MITA transition which will result from the implementation of NCTracks.

A.7.1 Coordination of HIT Plan with MITA Transition Plans

DHHS' goal is to coordinate its HIT Plan efforts with the MITA transition plans for the Medicaid Enterprise Solution (MES) Procurement Project. DHHS recognizes the synergistic connection between the HIT Plan and the MITA "to be" assessment, which will consider the state's goals for HIT when determining the future vision for the Medicaid Enterprise Systems.

The current status of MITA is to provide a better understanding of the role it is expected to play in the broader national dialogue regarding HIT and HIE. The comprehensive report of the MITA 3.0 State Self- Assessment will be submitted to CMS on April 9, 2021.

A.8 Medicaid, HIE, REC and Health and Human Services HIT Coordination

Per the SL 2009-0451 of the NC General Assembly, NC DHHS, in conjunction with the SCIO and the NC Office of Economic Recovery and Investment, shall coordinate HIT policies and programs within North Carolina. The Department's goal in coordinating state HIT policies and programs shall be to avoid duplication of efforts and to ensure that each state agency and other public entity, as well as the private entity undertaking HIT activities associated with ARRA, leverage its greatest expertise and technical capabilities in a manner that supports state and national goals. This law also directs that NC DHHS shall establish and direct a HIT management structure that is efficient and transparent and that is compatible with the ONC governance mechanism.

Prior to this session bill, the Secretary of the NC DHHS formed the state HIT Steering Committee (previously HIT workgroup) referenced above, to coordinate the department's work around HIT/E. This included coordination among the several key ARRA funding programs, the State Medicaid HIT Plan, Section 3201 Funding, the HIE, Section 3013 Funding and the REC, Section 3012 Funding.

In response to SL 2009-0451, DHHS created the Office of Health Information Technology (OHIT). Positions included the OHIT director, a privacy and security officer, a technical director, administrative assistant, and a full-time program manager. The OHIT is responsible for monitoring and coordinating activities of all other state agencies and non-governmental organizations engaged with HIT and HIE activities, either of a planning, research or operational nature. From May 2013 until April 2014, the OHIT was 100 percent vacant. A new director served as the only OHIT employee from April 2014 through July 2016, then the OHIT was vacant until a new Director of Health Information Technology was hired in July 2017. The Deputy Chief Technology Officer is the OHIT director and also directs the Cloud Center of Innovation, Catalyst Group, Enterprise Architecture, the Division of State Operated Healthcare Facilities (DSOHF), and the Division of Mental Health, Developmental Disabilities and Substance Abuse (DMH) and works closely with the NC HIEA, state hospitals, and other partners to align IT activities to deliver even higher efficiencies and standards of service.

A.9 NC Medicaid's HIT relationship with the NC AHEC

The NC AHEC Program previously served as the NC REC and has supported over 7,000 primary care and sub-specialty providers in their pursuit of meaningful use of an electronic health record system. This exceeds the program's original goal of 3,465 providers set at the start of the program. By deploying highly skilled staff through their nine regional centers, NC AHEC can support primary care and specialty care physicians with robust practice assessments, workflow redesign, selection and implementation and the appropriate use of EHRs to achieve MU and promote interoperability of the technology and improve health outcomes throughout the state.

NC AHEC has expanded its consulting workforce of EHR-experienced professionals to serve the nine regions of the state defined in its original grant application to the Office of the National Coordinator for HIT. The continuation of these services will better enable NC AHEC to help practices implement technology and/or use their previously existing technology, thereby, meeting the federal standards of Promoting Interoperability. The NC AHEC program has continued to build capacity in coaching practices through transformation to prepare for new pay-for-value payment models and stands ready to quickly disseminate technical assistance to its base of 475 primary care and subspecialty practices.

NC AHEC maintains an in-house database to track and monitor the progress of the providers associated with the services it provides. This database allows for the assignment of caseloads to the on-site technical staff, monitoring of deliverables for contracts and an overall database of providers and their progress in their pursuit of the incentive program.

NC Medicaid and NC AHEC collaborate to share information. Regularly scheduled meetings between NC Medicaid and NC AHEC are planned to leverage outreach and educational opportunities. NC Medicaid and NC AHEC share information on EP and EH enrollment statistics and trends, risks and issues, health information exchange, and training and outreach schedules.

A.10 Current Innovations – Affecting the Future Direction of EHRs

NC Medicaid is actively participating in the statewide effort to support the utilization of CEHRT through its work with NC AHEC, its relationship with the NC HIEA, and by leveraging physician participation in the CCNC medical home model.

A.10.1 Community Care of North Carolina Program & North Carolina Community Care Networks, Inc. (N3CN)

Community Care of North Carolina is described in the State Plan of North Carolina as the enhanced Primary Care Case Management program for the State to manage Medicaid, Health Choice, and targeted populations.

North Carolina Community Care Networks, Inc. (N3CN) is the private non-profit organization through which the State contracts to oversee the CCNC Program which includes ensuring the Community Care of North Carolina affiliated providers meet program goals and performance measures.

N3CN ensures there is a sufficient panel of primary care providers to serve enrolled populations with initiatives agreed upon by DHB and N3CN. N3CN establishes uniform processes to carry out these initiatives.

N3CN uses its Data Platform to carry out some of the requirements outlined in State Plan and Contract#37761, between DHB and N3CN.

The Data Platform has healthcare claims data provided by Medicaid, as well as health information about program participants obtained directly from healthcare providers and care managers and/ or the primary care medical record. Additional data sources include: Surescripts pharmacy data pharmacy management system vendors such as PioneerRx, Genoa, and QS/1, among others, laboratory results from LabCorp and Solstas, and three-times daily hospital admission/discharge/transfer data from over 100 NC hospitals. Information is accessed by the Care Managers, Practice Support staff, and providers to identify patients in need of care coordination; to facilitate disease management, population management, and pharmacy management initiatives; to enable communication of key health information across settings of care; to monitor cost and utilization outcomes; and to monitor quality of care and provide performance feedback at the patient, practice, and network level.

Informatics Center Functions and Front-End Applications:

CCNC VirtualHealth (VH)- HELIOS Platform:

The CCNC VirtualHealth (VH)- HELIOS Platform enables care management staff and support to document and view the Medicaid recipient records throughout members' continuum of care, while receiving care management services. VH provides a standardized framework for the care management workflow and documentation, while incorporating tools for member assessments, goal setting, and health coaching. VH enables users to view members' progress through the care continuum and various episodes of care. VH platform includes three portals – Care Management (CM), Provider and Administrative portals.

The VH application is populated by data feeds sourced from CCNC's data warehouse. This allows for greater flexibility and the opportunity to exchange information across CCNC's applications, (such as analytic dashboards), while populating key risk stratification and claims information, such as prescription fills. Care management tools are incorporated into the VH system, such as health risk screenings, program-level, comprehensive needs assessments, medication management, care plans, and secure messaging to allow care managers to communicate member health information securely to providers involved in the members' care. Automation of referrals and program-specific tasking are leveraged to ensure evidence-based standards and key program components are met. Complex care management services also offer health coaching and integration of patient education tools (Healthwise). A mobile app (for care management staff to use on home visits or when internet connectivity is limited) is currently being piloted. As of April 2021, approximately 1,200 care management staff members use this care management platform statewide.

CCNC VH Provider Portal:

The VH Provider Portal was created to improve the care provided to the members served. It is intended to give clinicians a more comprehensive view of their members' medical/care management history and to foster better care coordination between members' care team participants.
Through the Provider Portal, members of the care team may view member information including but not limited to:
- Visit history (including inpatient, emergency department, and office visits),

- Medication list including those prescribed by other providers,
- Other providers or care management staff members of the members' care team,
- Comprehensive needs assessments, care plans, and medication reviews,
- Information on how to make a referral to the CCNC care management team, and
- Secure messaging to CCNC team including care managers and pharmacists.

As of April 2021, approximately 1,000 providers use this provider portal platform statewide.

Analytics and Reporting

CareImpact, CCNC's analytics and reporting platform utilizes Tableau software to convey data through web-based dashboards that enable filtering and trending, as well as drilling down to patient-level data. CareImpact conveys important information to CCNC staff and primary care medical homes for ensuring appropriate identification and care of the Medicaid population, including:

- Population health data via monthly member demographics, conditions, costs and utilization (Inpatient and ED usage)
- Risk Stratification layered with historic performance to assess Impactability, the likelihood of a care manager's intervention impacting the individual member and their health outcomes. The impact models actually assess the average 6-month savings likely to be yielded through care management for each member. By prioritizing outreach based on a member's impactability, care managers can apply its limited resources to the patients it can impact most.
  - Transitional Care Priority identifies those admissions with the highest likelihood of impact for care managers to engage, accompanied with Outpatient Follow Up recommendations and an assessment of how highly to prioritize a home visit
  - Priority identifies those patients not yet in the hospital who are struggling with their conditions and likely to be impacted by a care management intervention
- Operational dashboards that focus on the quality of the care management services delivered to patients by CCNC care managers in the communities. These dashboards are updated daily using VirtualHealth Helios data and allow for analysis of the entire care management process and identification of areas for opportunity and efficiency.
- Performance on cost, utilization and quality measures, as well as patient-level care gaps to enable improvement in measure performance and overall primary care delivery. These metrics, which are available at the practice, county, region and statewide level, are based on Medicaid claims and updated quarterly. Care gaps are updated weekly when CCNC receives claims.
- Key behavioral health statistics including medication fills by medication type, last fill dates and utilization by certain diagnoses.
- This data also feeds into a Member dashboard that network leaders can utilize to study demographic characteristics, prevalence of chronic medical and mental health conditions, spending by category of service, and rates of hospital, ED, and other service use trends in their network and counties compared to that of others. This aids in program planning and resource allocation; identification of outlier patterns (such as unusually high rates of personal care services); and tracking of local utilization patterns over time.
- Through the joint efforts of CCNC, Inc. NC DHHS, and the NC Hospital Association, NCCCN receives daily notification of Medicaid population inpatient and ED visits from 111 NC hospitals. This three-times daily notification allows immediate identification of patients with high Transitional Care Impactability, ensuring care management support as they transition from hospital to home, including pharmacist review of medications and follow-up in the primary care medical home.

- N3CN works in partnership with the NC Divisions of Medical Assistance and Public Health to support and operate the Pregnancy Medical Home (PMH) program, aimed at improving the quality of maternity care, improving maternal and infant outcomes, and reducing health care costs. The Pregnancy Medical Home program includes most of maternity care providers across North Carolina, more than 350 practices and 1,600 individual providers. As PMH participants, prenatal care providers are supported to increase access to care and improve outcomes for the pregnant Medicaid population. The primary focus of the PMH model is on preterm birth prevention. A separate reporting suite supports this initiative, providing patient lists with demographics, risk factors from their Risk Screenings in CMIS, pregnancy metrics (such as delivery age and weight) and services rendered.
- Obstetric Care Management Reporting - in support of our Obstetric Care Management program, a separate reporting suite is available to Local Health Departments and Networks to care for women on Medicaid through their pregnancies and delivery. Recently the Maternal-Infant Impactability Score was developed to better target pregnant women for intervention to reduce low birth weight deliveries.

Reporting of Care Quality Indicators

N3CN reports performance on a subset of cost, utilization and quality measures to DHB on an annual basis in the N3CN Annual Quality Report. This report displays demographic data on the enrolled Medicaid population, tracks measure performance over time and speaks to targeted quality improvement initiatives across the state to impact quality of care. Measures span programs across chronic diseases, prevention in pediatric population and key outcomes of the Pregnancy Medical Home program.

In addition, N3CN reports a quarterly performance dashboard to DHB which reports on key care management process and outcomes measures for the PCCM, pediatric and pregnancy programs.

Monitoring of Risk Adjusted Key Performance Indicators: Clinical Risk Group (CRG)-risk adjusted analytics are applied to improve the accuracy of monitoring cost and utilization metrics over time, and to improve efficiencies in identifying patients most appropriate for care management services. 3M-developed methodologies are used to identify potentially preventable hospital admissions, readmissions, ED use, and ancillary services, to more accurately identify patients and areas where costs and utilization are higher than expected, accounting for patient acuity. This allows risk-adjusted comparisons of cost and utilization performance across Networks and Practices to facilitate development of techniques to impact unnecessary costs and measure impact of changes in care management approaches. Tracking of key metrics provides stakeholders with assurance that efforts are aligned toward the overarching goals of cost savings and quality improvement, and that all networks are held accountable for the overall performance of the program.

A.11 State Law and Regulatory Changes to Support HIT Activities in NC

A close review of North Carolina state statutes that affect healthcare providers' disclosure of patient information found several laws that were outdated, ambiguous, and out of alignment with the federal HIPAA Privacy Rule. To harmonize NC state laws with HIPAA and to facilitate the use of secure electronic exchange of patient information in a manner consistent with HIPAA, the 2011 General Assembly enacted two bills, SB 375 and SB 607. SB 375 establishes the "North Carolina Health Information Exchange Act," which is codified in Article 29A of Chapter 90 of the NC General Statutes. The Act regulates the use of the voluntary statewide HIE Network in a manner

consistent with HIPAA Privacy and Security Rule. SB 607 made conforming changes to specific sections of existing North Carolina law that were identified as barriers to MU of electronic HIE.

In 2015, the NC General Assembly passed NC Session Law 2015-241 Section 12A.5, as amended by NC Session Law 2015-264, directing the formation of a new state agency to assume governance of the statewide HIE, and stipulating oversight mechanisms and a connectivity and data-sharing mandate for all providers that receive Medicaid and other state funds for the provision of health care services. The laws direct the newly formed NC HIEA to establish, administer and provide ongoing support for the statewide HIE network, now called NC HealthConnex. The laws also call for the implementation of a health information exchange analytics data warehouse to be used by HIE stakeholders for the purpose of "leverage[ing] historical and prescriptive data for the purpose of reducing healthcare costs and improving quality and access to care." Importantly, the laws mandate connection to and data sharing with NC HealthConnex by Medicaid-funded facilities statewide by specified dates in 2018 and provide state funds to assist these facilities with the costs of onboarding. This new state governance structure and funding represent enormous opportunity for the state's Medicaid providers to meet their Meaningful Use obligations and use shared patient data to inform care decisions for better quality of care in 2016 and beyond.

Also of note, two other 2015 laws direct the collaboration of other state payers and systems with the statewide HIE network. NC Session Law 2015-241 Section 12.F.16.(f)(1) stipulates that the state's Controlled Substances Reporting System be integrated with the statewide HIE network (as well as achieve interstate connectivity and meet the federal standard of data security protocols) in order to assist with the stated goals: "to improve performance, establish user access controls, establish data security protocols, and ensure availability of data for advanced analytics."

NC Session Law 2015-245, regarding transformation of Medicaid and Health Choice programs in North Carolina, 1) directs all health plans serving Medicaid patients under the new structure to connect to the statewide HIE network, and 2) requires utilization of the statewide HIE network to perform certain functions currently performed by N3CN's Informatics Center in coordination with the new delivery system. NC Session Law 2017-57 clarified and amended the connection mandates of NC Session Law 2015-245 in June 2017, and provider connection deadlines were further amended by NC Session Law 2018-41 to require dentists and ambulatory surgical centers to submit demographic and clinical data by June 1, 2021, and pharmacies to submit claims data by June 1, 2021. NC Session Law 2019-23 delays the June 1, 2019, deadline until June 1, 2020. Additionally, licensed physicians whose primary area of practice is psychiatry now have until June 1, 2021, to connect. Further, SL 2019-23 now exempts the following provider types from the mandatory requirement to connect and send data to NC HealthConnex:

- Community-based, long-term services and supports providers, including personal care services, private duty nursing, home health and hospice care providers.
- Intellectual and developmental disability services and supports providers, such as day supports and supported living providers.
- Community Alternatives Program waiver services (including CAP/DA, CAP/C and Innovations) providers.
- Eye and vision services providers.
- Speech, language, and hearing services providers.
- Occupational and physical therapy providers.
- Durable medical equipment providers.
- Nonemergency medical transportation service providers.
- Ambulance (emergency medical transportation service) providers.
- Local education agencies and school-based health providers.

In response to the global COVID-19 pandemic, North Carolina policymakers passed a bipartisan relief package in May 2020 to provide assistance to families, schools, hospitals and small businesses. NCSL 2020-3 also extends the June 1, 2020, deadline for connecting to NC HealthConnex to October 2021 to allow health care providers hard hit by COVID-19 additional time to establish connectivity.

A.12 HIT Activities Crossing State Borders

North Carolina borders four states: Virginia, Tennessee, Georgia, and South Carolina. It shares significant medical trading areas on the borders of Virginia and South Carolina. As North Carolina develops its health data exchange policies and technical services, has planned alignment opportunities with neighboring states driven by:

- Data exchanges that naturally flow across state borders;
- Opportunities for shared HIE infrastructure design and development;
- Cross-border provider Medicaid incentive determinations; and,
- Approaches to provider adoption of EHRs.

North Carolina partners with other states around HIT/HIE, including:

- In April 2010, the states of Tennessee and Alabama formed the Southeast Regional HIT-HIE Collaboration ("SERCH") to serve as a forum for discussion among bordering states. Along with Alabama and North Carolina, participating states include Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, South Carolina, Tennessee, and Virginia. Through SERCH, representatives from each state's Medicaid agency, state HIT offices, and RECs participated in weekly conference calls to discuss topics which the group determines to be of critical importance for advancing HIE and HIT. In September 2012, SERCH issued a report to ONC to improve the sharing of electronic health records among health information exchanges during disasters.
- In June 2010, North Carolina participated in a multi-state collaborative (Alabama, California, Colorado, Georgia, Maine, Missouri, New York, North Carolina, South Carolina, and Tennessee) that developed and released an RFI from vendors regarding enterprise medication management services.
- Through NCHICA, North Carolina participated in a Health Information Security and Privacy Collaborative and NHIN/eHealthExchange activities.
- NC Medicaid participates in several e-communities of practice, including several related to administration of the EHR Incentive Program.
- North Carolina has an exchange agreement with all 50 states for exchanging death certificates and exchange agreements for cancer incidence data with 24 states, including our border states of Virginia, Tennessee and South Carolina.
- DHHS shares its SMHP and provider guidance related to administration of the EHR Incentive Program with other states upon request and via the NC Medicaid EHR Incentive Program website.
- NC Medicaid works with bordering states to resolve data issues related to administration of the EHR Incentive Program stemming from providers that practice in multiple states.
- The NC HIEA is a member of the Strategic Health Information Exchange Collaborative (SHIEC)— served as a member of its Marketing and Communications Committee in 2017, active in 2018, and serve as co-chair of the Payer Committee since 2019.
- NC HealthConnex built emergency connections to neighboring state and regional HIEs to improve access to patient records during Hurricane Florence. In addition to existing connections with GaHIN (Atlanta) and VA HIE (Veterans Administration), NC HealthConnex opened the gateway for bidirectional query and exchange of patient records via the national eHealth Exchange Network, part of the Sequoia Project, to

Coastal Connect HIE (Wilmington, NC), ETHIN (East Tennessee), GRAChiE (Augusta, Ga.), MedVirginia (Richmond, Va.), and SCHIEX (South Carolina).

- In late 2019, NC HealthConnex went live with an eHealth Exchange connection to the Department of Defense. North Carolina is a high priority connection for the DoD given the large number of military and veteran personnel in the state. Participants of NC HealthConnex provided over $4M in health care services to Military Health Service beneficiaries in FY 2018. The DoD military treatments facility sites most impacted by onboarding NC HealthConnex with the DMIX are FT BRAGG, CAMP LEJEUNE, NHC CHERRY POINT, AF-C-4th MEDGRP-SJ & PORTSMOUTH. The DoD reports they will be able to increase the amount of military health service beneficiary health care information that will be available for sharing by more than 50%. The DMIX system enables integrated health data sharing among the Military Health System (MHS) GENESIS system, legacy DoD systems, VA systems, other federal agencies, and private-sector health providers.
- Additionally, building on the proactive monitoring of patient activity in the emergency department (ED) or in-patient settings, NC HealthConnex went live at the end of 2019 with a nationwide network called Patient Centered Data Home (PCDH). PCDH is a cost-effective, scalable method of exchanging patient data among health information exchanges (HIEs). It's based on triggering episode alerts, which notify providers a care event has occurred outside of the patient's "home" HIE and confirms the availability and the specific location of the clinical data, enabling providers to initiate additional data exchanges to access real-time information across state and regional lines and the care continuum. To date there are 45 HIEs across the country participating in the SHIEC PCDH network.

The NC OHIT director serves as a main point of collaboration between North Carolina and its neighboring states.

A.13 Interoperability Status of the State Immunization Registry & Public Health Surveillance Reporting Database

The North Carolina Immunization Registry (NCIR) is a secure, web-based clinical tool which is the official source for North Carolina immunization information. Immunization providers may access all recorded immunizations in the NCIR, regardless of where the immunizations were given. According to CDC, by two years of age, over 20 percent of the children in the U.S. typically have seen more than one healthcare provider, resulting in scattered paper medical records. Immunization Registries help providers and families by consolidating immunization information into one reliable source.

Access to the NCIR via the North Carolina Identity Management (NCID) system is limited to North Carolina Immunization Program medical providers and other program affiliates. Access to the immunization information contained within the NCIR is meant for health care providers in the prevention and control of vaccine-preventable diseases and is not intended for general public use. The NCIR stores immunization records that are client-specific and created by the client's health care provider, and NC Vital Records live births data.

The primary purposes of the NCIR are:

- Provides consolidated immunization records at the point of clinical care for use by a vaccination provider in determining appropriate client vaccinations.
- Provides insight on population health; aggregate data on vaccinations is used in surveillance and program operations, and in guiding public health action with the overall goals of improving vaccination rates and reducing vaccine-preventable disease.

- To give patients, parents, health care providers, schools and childcare facilities timely access to complete, accurate and relevant immunization data;
- To assist in the evaluation of a child's immunization status and identify children who need (or are past due for) immunizations;
- To assist communities in assessing their immunization coverage and identifying areas of under-immunization; and
- To fulfill federal and state immunization reporting needs.

In February 2016, NC DPH began accepting the electronic submission of data for the NCIR. Eligible Hospitals (EHs) and Eligible Professionals (EPs) register their intent individually using the National Provider Identifier. EHs and EPs complete a short survey that captures information about the technical capability of their electronic health records to exchange immunization information with the NCIR. Upon successful completion of registration providers receive an auto-generated response e-mail confirming registration and subsequently an onboarding invitation from Immunization Registry.

The NCIR is utilizing direct connections with provider organizations or the NC Health Information Exchange Authority (NC HIEA) to connect to the NCIR. All of the data exchange methods use web services to connect to the NCIR, and a provider can connect to the NCIR using any of the methods.

Bi-directional	
Purpose	The NCIR can transfer data to EHRs and EHRs can transfer data to the NCIR. Transfers can occur in real time
Direction of Transfer	Vaccination update: NCIR to EHR History/Recommendations: EHR to NCIR
File Formats	HL7 2.5.1, Release 1.5
Transaction Types	Updates: HL7 2.5.1, Release 1.5 VXU/ACK Queries: HL7 2.5.1, Release 1.5 QBP/RSP
Transport Protocol	Webservices
Currently in Use?	Yes

Figure 2 - NCIR Transfer of Data

For more information, visit https://www.immunize.nc.gov/providers/ncirpromotinginteroperability.htm.

Within DPH, several public health surveillance databases are utilized to meet disease management, containment and reporting requirements. These systems and their supporting systems are described below.

Electronic Laboratory Reporting (ELR):

ELR sent to the Division of Public Health is sent to one of two systems: (1) the NC Electronic Disease Surveillance System (NC EDSS), or (2) the NC Lead Surveillance System (NC LEAD).

NC EDSS provides communicable disease surveillance, case follow-up and contract tracing, and disease outbreak management for public health epidemiologists and disease investigation specialists to receive, manage, process and analyze electronic data from public health entities and laboratories. Services include support for legally required reporting of communicable diseases to the health department by clinicians and laboratories, including electronic laboratory reporting; case investigation and follow-up; and communicable disease outbreak management.

NC LEAD allows public health officials to receive, manage, process, and analyze data for cases of suspected childhood lead exposure. ELR results indicating lead exposure are imported directly into NC LEAD, enabling immediate exchange of information between clinics, labs, and local health departments, as well as data analysis for the identification, tracking, and reporting of childhood lead exposure.

The current interface statuses of NC EDSS and NC LEAD are:

- From State Laboratory for Public Health – functioning ELR to NC EDSS and NC LEAD
- NC EDSS and NC LEAD to CDC – functioning – NC EDSS transitioning to HL7 messaging over next several years
- From hospital laboratories - NC EDSS is receiving functioning ELR for mandatory reporting from 47 facilities including four major multi-facility health systems in the state. DPH is partnering with the North Carolina Health Information Exchange Authority to use its health information exchange, now known as NC HealthConnex, to provide a message relay service for hospital laboratories to transmit ELR to DPH
- From National Commercial Laboratories – DPH is receiving functioning ELR for by law reporting only, from LabCorp, for NC EDSS and NC LEAD. DPH is receiving functioning ELR for NC LEAD from Mayo Medical Laboratories and is in the process of developing ELR for NC EDSS from Mayo as well. DPH is also in the testing phase with Quest for implementing an ELR feed to NC EDSS and NC LEAD
- From providers, local health departments, and NC HealthConnex – DPH is analyzing feasibility of receiving electronic case reports (eCR) of reportable communicable diseases from health information systems into NC EDSS, which would replace paper-based reporting
- NC EDSS from VR deaths and OCME- not planned or funded

Meaningful Use Stage 3 – 2015 Edition CEHRT: NC DPH can accept Electronic Laboratory Reports from eligible hospitals, according to the HL7 2.5.1 standards required to meet the 2015 Edition Certified Electronic Health Record Technology (CEHRT) definition.

Please note: NC DPH is capable of and is accepting electronic Syndromic Surveillance data from eligible hospitals, via the NC Hospital Association, but is not requesting and will not receive electronic syndromic surveillance from eligible professionals.

NC Disease Event Tracking and Epidemiologic Collection Tool - The NC Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT) addresses the need for early event detection and timely public health surveillance in NC using a variety of secondary data sources like emergency departments, poison control centers, pre-hospital medical information and NC College of Veterinary Medicine.

For more information, visit https://ncdetect.org/.

StarLIMS: State Laboratory Information System for State Laboratory testing. For more information, visit https://www.informatics.abbott/us/en/industries/public-health. This is the Primary software application used for Health Information Exchange by the State Laboratory. There are several other software applications developed in house for example: Clinical Environmental Laboratory Reporting (CELR), Billing tools, Purchasing of supplies, and more. We also communicate with business partners along with State and Federal entities using variable formats that need improvement due to the ever-changing information technology environment. The biggest problem for the State Laboratory is the need for Electronic Ordering solutions. We are ahead for Electronic Reporting due to StarLIMS and our IT support.

- Electronic Health Record (EHR) - The lab LIMS resources NEED to be integrated with current technology in Healthcare Informatics. We have isolated ourselves by not separating out the electronic data into common segments that are fully described by the Federal Government through Medicare:

  - Encounter data, Provider data, Patient data; Guarantor (responsible party/kin) data, Insurance (Payor) data, Services requested data, Results (return responses of services) data, Billing data, Supplemental data for the EHR.

- Electronic Order entry/requisitions – Deficiency can be corrected with integration of compatible HIE application. Combine this application with our current solutions will improve Health Information Exchange on Electronic Order entry. The quality improvements are significant with a reduction of clerical errors in ordering, sample integrity for better results, patient care allowing for demographic related references, timeliness of reporting and provider follow up care. Having accurate data for billing and Public Health surveillance and care is also a benefit matching lab test results to the patient or event which can be Clinical and Environmental.

- StarLIMS – Is responsible for Laboratory internal processes, Clinical and Environmental testing electronic work flow start (order) to finish (report).

- Surveillance – the NCSLPH works with Newborn babies, Public Health Programs both Clinical and Environmental, and Federal Partners for Post results analysis and follow up. HIE is vital to perform a more efficient process of sharing data with each of these partners and more. There are some tools available however they will require time to build, test/verify Validation and money necessary to finish.
  - This would be a very important tool for Post testing report tracking and follow up surveillance of outbreaks or by individual patient and/or groups of patients.
  - StarLIMS is now capable of Linking Clinical and Environmental samples under an Event manager for lab testing. Electronic transfer of this data would very useful. Development of this is required.

Health Information System (HIS): The HIS replaced the functionality of the Health Services Information System (HSIS) that was operational from 1983 to 2010. The HIS provides an automated means of capturing, monitoring, reporting, and billing services provided in, CDSAs, the North Carolina State Laboratory for Public Health and Environmental Lead Investigations by state staff in the Environmental Health Section. The HIS allows for the submission of claims to Medicaid and the reporting of all services delivered. Local health departments now use their own electronic health records systems to collect clinical services data and bill Medicaid, and selected data elements are submitted monthly to the Division of Public Health through batch text files.

Vital Records: Examples of Vital Records are births, deaths, fetal deaths, and changes to records such as adoptions and legitimations. In January 2010, North Carolina implemented a statewide web-based, electronic birth registration system (EBRS), which was expanded to collect fetal death data. Plans are under development for a web-based, Electronic Death Registrations System (EDRS). The CDC's National Center for Health Statistics and the

National Association of Public Health Statistics and Information Systems are developing standards in anticipation of potential, future meaningful use criteria that would include reporting of the medical portion of the birth certification through CEHRT. Because vital records serve both as a legal registration and public health function, separate interfaces or systems must be maintained for these distinct functions. The State Center for Health Statistics is a member of NAPHSIS and is providing feedback on standards as they are developed and the timing of integration of Vital Records with the statewide HIE will be revisited after other critical public health systems are integrated and based on readiness of Vital Records electronic systems and national standards development. For more information, visit https://schs.dph.ncdhhs.gov/data/vital.cfm#.

Central Cancer Registry (CCR) - The Central Cancer Registry (CCR) is the statewide, mandated cancer surveillance system. Statute requires that all health care providers that diagnose or treat cancer (i.e., hospitals, physician offices, radiation oncology centers and laboratories) report cases to the CCR. About 80 percent of the cancer cases reported are from larger facilities, which are approved by the American College of Surgeon's Commission on Cancer, through electronic submissions from the hospital's Tumor Registry using a nationally defined standard. The remaining 20 percent of the cases are reported from freestanding diagnostic, physicians and treatment facilities. NC DPH can accept electronic submission of Cancer Diagnosis and Treatment information to the CCR (for eligible professionals with Certified EHR only) according to the standards required to meet the 2015 Edition CEHRT definition for MU Stage 3. Registrations for MU Stage 3 started on January 1, 2017. Eligible providers using certified EHR vendors must register for the cancer measure and then follow up by sending cancer reports for testing and validation. For more information, visit https://schs.dph.ncdhhs.gov/units/ccr/.

NC DPH deployed the MU Registration Portal where eligible hospitals and providers can register their intent to submit data to the state systems and which tracks these providers through their active engagement with public health.

In 2017, the State Laboratory for Public Health initiated a project to support bi-directional exchange between eligible hospitals and providers where these providers will submit their test orders directly from their EHRs to the state laboratory and receive their test results back from the state laboratory directly into their EHRs.

Per guidance in State Medicaid Director Letter #16-003 pertaining to available HITECH funding for interoperability and HIE architecture, connecting public health systems to HIEs, and assisting EPs and EHs with meeting specific PI objectives, on May 21, 2019, North Carolina received approval for federal financial participation to assist with the design, development and implementation of the NC HealthConnex-NC SLPH interface and subsequent onboarding of Medicaid providers to the new service. Specifically, this new HIE feature will allow EPs and EHs to leverage their existing NC HealthConnex interface to help meet PI Objective 4 Measure 2, Computerized Order Entry of ordered labs.

Additionally, NCDPH has plans to work with the NCHIEA to build out specialized registries. Future possible special registries include asthma and cardiovascular. The NC Diabetes Specialized Public Health Registry, developed by NCHIEA in partnership with NCDPH has been available for population health purposes since June 1, 2018. Full participants of NC HealthConnex are eligible to participate in the registry by signing the NC HealthConnex Diabetes Registry Form. Data submitted to NC HealthConnex will be included in the Diabetes Registry, as appropriate. No additional data submission from participants is required. The NC HealthConnex Diabetes Registry supports attestation for Meaningful Use Stage for eligible hospitals, eligible critical access hospitals, and eligible professionals as well as Medicare Quality Payment Program Advancing Care Information for eligible clinicians.

DPH HIT-related Funding

PPHF: Capacity Building Assistance for Infrastructure Enhancements to Meet Interoperability Requirements

DPH received $753,484 for this project. The purpose of this award is to assist immunization awardees improve the efficiency, effectiveness, and/or quality of immunization data practices by strengthening the immunization information technology infrastructure, and to enhance or sustain awardees' capacity to support and extend interoperability between their Immunization Information Systems (IIS) and Electronic Health Record (EHR) systems. This funding is specifically targeted to improving IIS ability to interoperate with Electronic Health Record (EHR) systems, enabling or improving the ability of immunization providers to submit data to, and to receive records and clinical decision support from IIS. The performance period was 09/01/2011 to 08/31/2013. This award allowed a one-year no cost extension which we used. Therefore, the funds extended into 2014.

Electronic Case Reporting (eCR)

The NC DPH Communicable Disease Branch has received a grant from the Council of State and Territorial Epidemiologists (CSTE), funded by the Centers for Disease Control and Prevention (CDC), to hire a business analyst/project manager for one year (July 2017 – June 2018). This analyst will to develop relationships with stakeholders across the state especially NC HealthConnex and will assess the feasibility about what NC DPH will require to accept electronic case reports into NC EDSS. During Spring 2017, staff from the Communicable Disease Branch have begun attending workshops and meetings about HIE clinical notifications, sponsored by the North Carolina Healthcare Information and Communications Alliance, Inc. (NCHICA) and NC HealthConnex, with the ideal outcome of receiving eCR from member hospitals via NC HealthConnex. The analyst will produce an electronic case reporting (eCR) implementation plan specific to North Carolina that will reflect all of the data gathered from the first year's activities, according to the best practices described in CSTE's eCR toolkit. This implementation plan will serve as the primary resource for North Carolina's eCR implementations. If funding is renewed for a second year, NC DPH will immediately begin eCR implementation with NC HealthConnex to the extent possible with the available staff. Currently the business analyst and an additional programmer are working on a pilot eCR project with two counties and two hospital providers to submit eCR data and review in the NCEDSS system. This pilot project is expected to inform the process going forward for onboarding additional counties and providers into sending and reviewing eCR data in NC EDSS. Additional funds for this work were applied for in the ELC grant. If funded, this project will continue to onboard additional counties and providers into submitting eCR reports.

Epidemiology and Laboratory Capacity (ELC) grant from CDC

The purpose of this grant is to protect the public health and safety of the American people by enhancing the capacity of public health agencies to effectively detect, respond to, prevent and control known and emerging (or re-emerging) infectious diseases. This is accomplished by providing financial and technical resources to (1) strengthen epidemiologic capacity; (2) enhance laboratory capacity; (3) improve information systems; and (4) enhance collaboration among epidemiology, laboratory, and information systems components of public health departments. Project C is specifically devoted to supporting Health Information Systems Capacity.

ELC Project C funds received by DPH
- o 8/1/13-7/31/14: $375,548
- o 8/1/14-7/31/15: $457,667
- o 8/1/15-7/31/16: $500,918
- o 8/1/16-7/31/17: $478,65
- o 8/1/17-7/31/18: $461,398

B. North Carolina's "To Be" HIT Landscape Vision

NC DHHS is committed to the meaningful use of CEHRT to improve the quality, safety, efficiency and effectiveness of healthcare. In this section, the "To-Be" landscape for HIT is addressed with an outline of a five-year vision for major HIT activities.

B.1 Five Year Vision

North Carolina Medicaid's vision for HIT aligns with the broad vision for HIT and HIE including the NC HIEA, the state-designated entity responsible for coordinating and executing a strategy for enabling statewide HIE in North Carolina. The NC HIEA is leveraging state-level oversight and multi-agency and stakeholder leadership to continue to work toward the original vision and mission as outlined in the original NC HIE Operational Plan, whereby the statewide HIE network will provide:

> *A secure, sustainable technology infrastructure to support the real-time exchange of health information to improve medical decision-making and the coordination of care to improve health outcomes and control healthcare costs for all residents of North Carolina.*

B.2 Advancing the Objectives of HIE

A critical component of latter-stage Meaningful Use and improving health outcomes is meaningful patient data exchange. Collecting data in one's EHR is the groundwork for a healthcare provider's ability to easily access patient data across the continuum of care and communicate efficiently with a patient's other providers to ensure an optimal care and follow-up plan. This section discusses leveraging statewide health information exchange infrastructure and a shared trust framework to support Medicaid providers, and all other providers statewide, in their pursuit of this goal.

B.2.1. Statewide HIE Governance and Organizational Approach

North Carolina's statewide HIE has gone through two major governance transitions, from its origin as a private-public partnership to part of the 501(c)3 that manages the state's Medicaid patients to a network now governed by its own state agency, the North Carolina Health Information Exchange Authority (NC HIEA). Of note, the NC HIEA is part of the NC Department of Information Technology's Government Data Analytics Center (NC DIT-GDAC) and leverages an existing public-private partnership between the GDAC and SAS Institute for provision of technology and analytic services. This section provides brief summary information of the HIE's earlier phases, and details recent milestones and the current state and future plans for connecting the state's health care data.

2010-2012: a public-private partnership

To ensure health information would be exchanged in an accurate, secure, and timely manner, the initial NC HIE organization led an effort to create a high-value HIE network and set of shared HIE services that built upon, enhanced and amplified existing capabilities and investments in HIT. Key components of North Carolina's statewide HIE landscape as of 2010 included:

- *State of North Carolina*: North Carolina state government, including NC Medicaid, NC DPH, and the OHIT to coordinate state agencies' HIT and HIE design, development and deployment efforts.

- *NC HIE*: Representing a wide range of stakeholders in a public-private partnership, NC HIE supported an open and transparent, collaborative process to develop the legal, policy and technical infrastructure to accelerate the use of HIE services.

- ***Statewide Policy Guidance***: Provision of common and consistent technical, privacy, security, and legal frameworks for participants of HIE and to ensure the secure, interoperable exchange of data.

- ***Qualified Organizations (optional)***: The original entities designated by NC HIE to contract with health care providers and other entities on NC HIE's behalf to facilitate participation in the HIE Network. (Note, this model is no longer applicable as of 2016 under state governance.)

- ***End User***: A provider or other authorized user that accessed NC HIE services.
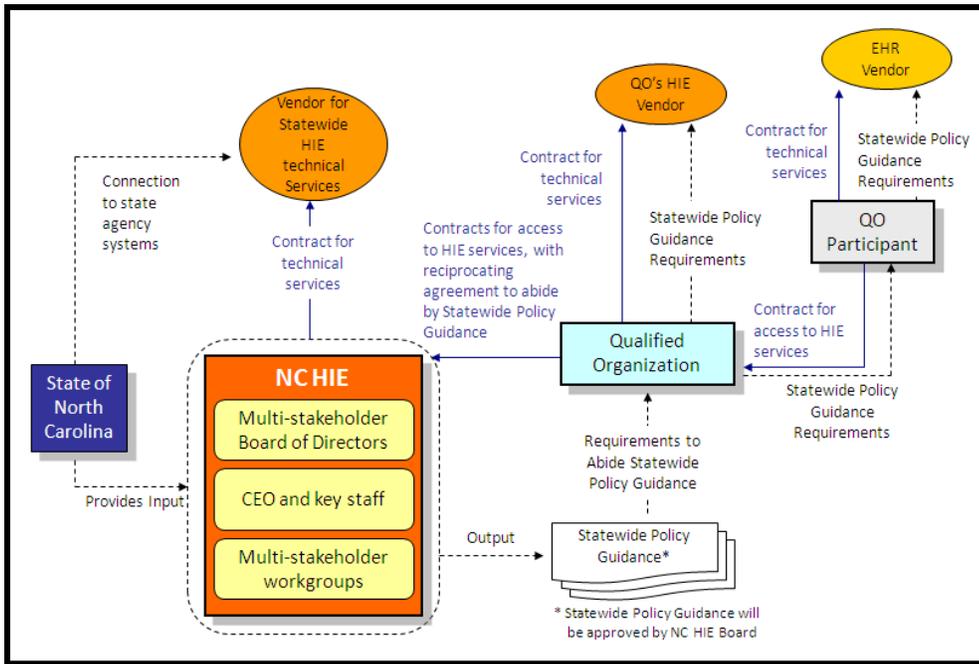
Figure 3 - Key entities and relationships in North Carolina's initial Statewide HIE Approach, 2010

While participation in the statewide HIE was (and is) voluntary, participants had to sign a contract or participation agreement with the NC HIE, binding it to compliance with the statewide HIE's participation agreement and NC HIE privacy and security policies. A process and policies were also established to ensure ongoing oversight of participating entities to ensure compliance with NC HIE's privacy and security framework. If a participating provider was identified as non-compliant with the statewide HIE's requirements as described in its contract, the entities' access to the HIE Network may have been terminated. Accountability and transparency were, and are, central to ensuring the success of statewide HIE and encouraging provider participation.

2013–2015: a 501(c)3 subsidiary of Medicaid's care management arm

During this time, North Carolina Community Care Networks (N3CN) governed NC HIE. N3CN and NC HIE shared a mission to impact care at critical moments through intelligent data use within the health care system. Under N3CN governance, NC HIE operations focused on leveraging the existing HIE infrastructure to first support North Carolina Medicaid and safety net providers, improving the health of the state's most vulnerable populations. NC HIE and N3CN aimed to work with organizations and local communities that had a need for health information exchange within their communities to collaborate rather than compete with existing community or provider HIE efforts.

In September 2015, concerns about sustainability of statewide HIE led the NC General Assembly to pass NC Session Law 2015-241 Section 12A.5, as amended by NC Session Law 2015-264, NC Session Law 2017-57 and NC Session Law 2018-41, which created a new state agency called The North Carolina Health Information Exchange

Authority (NC HIEA) to oversee and administer North Carolina's HIE and set forth requirements for Medicaid providers to connect to and share patient data with the statewide HIE Network.

2016 and Beyond: state oversight and administration

On February 29, 2016, the NC HIE transitioned from the North Carolina Community Care Networks (N3CN) structure to a new state agency, the NC HIEA. The vision for statewide HIE under its new governance structure is not so different from the original vision developed for the NC HIE by a broad group of stakeholders statewide in 2010. The NC HIEA aims to provide the secure infrastructure to facilitate sharing of patient data to improve care coordination and quality of care, resulting in better health outcomes statewide. The strategy under new governance also has much in common with the strategy under N3CN—to focus first on connecting the state-insured, Medicaid, and other vulnerable populations. What distinguishes the NC HIEA and its strategy from the HIE's previous incarnations is a legislated mandate for data sharing by all provider facilities that receive Medicaid or other state funds for the provision of health services and state funding for operational ramp up, making the connection and initial service available at no cost to its participants. The state's plan is to gradually transition the operational HIE network to be 100% receipt-supported, and leverage robust, meaningful analytics to inform better care.

Throughout much of 2016, the NC HIEA's approach was two-pronged: 1) work to maintain uninterrupted service and optimize the user experience for current HIE participants, while continuing to build and test in-progress value-added features (such as public health interfaces); and 2) establish new guidelines, agreements, workgroups, and an Advisory Board of key stakeholders and provider representatives to inform its long-term strategy. The NC HIEA also rebranded the statewide HIE network from NC HIE to NC HealthConnex and developed a comprehensive communication plan to build provider and stakeholder trust in the new governing organization. To deliver expediently on these short-term goals, the NC HIEA leveraged existing relationships and contractual mechanisms within its parent agency, the NC Department of Information Technology (NC DIT), to partner with SAS Institute for technology services and support, and Eckel and Vaughan for its strategic communications.

The initial NC HIEA and SAS approach to building a robust HIE to serve NC is as follows:

- Emphasize bi-directional *conversations* and documents that are conformant to IHE ([Integrating the Healthcare Enterprise](#)) standards, and maximize the use of Consolidated Clinical Document Architecture (CCDA)/Continuity of Care Documents (CCD) wherever possible;
- Minimize impact on existing provider workflows by encouraging direct integration to participant EHRs as the *primary approach* for integrating participants into NC HealthConnex;
- Focus on value and thoughtful outreach to participants, showing them how NC HealthConnex can deliver value to their business operations and help them solve health care problems;
- Increase output and quality of the onboarding process for participants by focusing on achieving economies of scale and meaningful data. Leverage multi-tenant connections (where one connection equates to multiple providers, connection to other HIEs, etc.) and target outreach to large health systems in geographic regions with high volume of Medicaid patients;
- Work with the existing HIE technology provider to improve existing workflow, offer new value-added features, and tune the existing components of NC HealthConnex to perform at their utmost potential; and,
- Build the foundation for long-term sustainability by designing and prototyping analytics to support Medicaid reform that can provide direct visibility into population health across various cohorts of the state-funded patient population.

The figure below is an update to the figure above and depicts the relationships between state agencies, IT vendors and health care providers that make up the statewide HIE approach under the NC HIEA as of 2019.
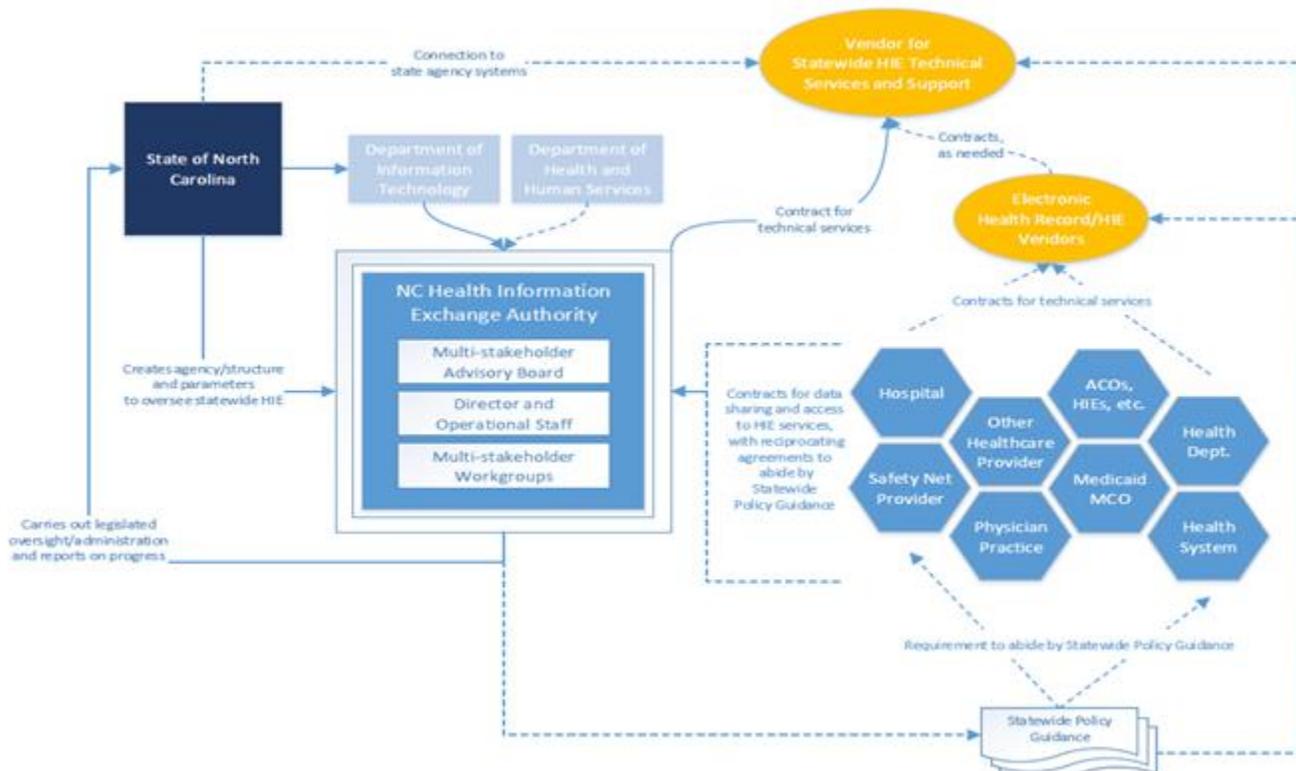

Figure 4 - Key entities and relationships in North Carolina's Statewide HIE Approach, 2017

While the initial organizational focus under the NC HIEA is on Medicaid provider onboarding, the NC HIEA coordinates tightly with NC DHHS and NC DIT, and is engaged with various leadership initiatives around health care reform in North Carolina, including representation on the North Carolina Institute of Medicine's Task Forces on Health Care Analytics, All-Payers Claims Database, and most recently, Serious Illness.

B.2.2 Statewide HIE Technical Approach

North Carolina's statewide HIE technical infrastructure framework has consisted of three categories of services: core, value-added, and support.

Core Services

Core Services support connectivity and data transport between multiple entities and systems. The goal is to provide a lightweight and flexible infrastructure and serve as gateway to access Value-Added Features. Core Services create a foundation to exchange health information across organizational boundaries, such that two entities can:

- Identify and locate each other in a manner they both trust;
- Reconcile the identity of the individual patient to whom the information pertains;
- Exchange information in a secure manner that supports both authorization decisions and the appropriate logging of transactions; and,
- Measure and monitor the system for reliability, performance and service levels.

NC HealthConnex core HIE services consist of the following components.

1. *Security Services*: Multiple functional processes that ensure only authorized users access system or service resources. Processes adhere to state and federal privacy and security standards. Access begins with a secure Web interface that conforms to security design standards. A consistent audit trail is established across components.
   - Provider Directory: Includes services for locating providers by facility location and unique identifier.
   - Facilities Index: Index of facilities that are connected and submit data to NC HealthConnex.
2. *DIRECT Secure Message Routing*: Enables participating providers to securely exchange key clinical information between their EHR systems (e.g., accept and route continuity of care documents (CCDs) between connected providers).
3. *Identity Management and Authentication*: Authentication is frequently handled through digital certificates that prove to the HIE that the systems are trusted sources.
4. *Transaction Logging*: Maintains a transaction log that can facilitate audit activities. The transaction log will track the origination and destination of an information transaction and verify that the transaction was completed.
5. *Consent Management*: Facilitates consent policies and patient preferences. NC HealthConnex supports the state's Opt-Out consent model. NC HealthConnex does not accept specially-protected data according to state and federal law (e.g. 42 C.F.R Part 2).
6. *Transformation Service*: Capability to provide transformation for certain data elements to comply with the NC HealthConnex data target standard (e.g., race, language, gender), and parse and validate various document formats (e.g., C-CDA).
7. *Enterprise Master Patient Index/Record Locator Service*: The service provides two capabilities:
   - Enables requesting a list of a patient's clinical documents, either via a demographic attribute query or a direct index lookup.
   - Enables requesting one or more of the documents listed from a query be transferred to the requester's system.
8. *eHealth Exchange (formerly known as NwHIN Exchange)*: Provides for a single, universal implementation of the eHealth Exchange gateway available as a service for authorized users and entities.
9. *NC HealthConnex Clinical Portal:* Provides for a consolidated, longitudinal, statewide view of a patient record, available to authorized users and entities.

In addition to these infrastructural components, NC HIE's initial deployment of core services included: (1) normalization of laboratory results; (2) transmission of CCD among participating entities; and (3) deployment of services in support of secure messaging using the Direct implementation specification.

Value-Added Services/Features

Accessible via core services, NC HealthConnex value-added features (formerly called services) serve as the tools and applications that allow end users the functionality to improve safety, efficiency, quality, and effectiveness of care. In developing its initial RFP for HIE services in 2010, the former NC HIE conducted a thorough and rigorous assessment of candidate value-added services across the dimensions of cost, feasibility, value to stakeholder groups, applicability to Meaningful Use, and appropriateness of delivery at the state level.

Based on the results of this 2010 assessment, NC HIE identified and prioritized the following value-added services/features (updated to reflect current status as of 2019 in NC HealthConnex):

- NC Immunization Registry – bidirectional interface live and available as of January 2017

- State Lab Reporting – a connection to the State Lab of Public Health is on the 2019-2021 roadmap for NC HealthConnex; daily electronic reporting of reportable labs from hospitals to the NC DPH is live for eleven hospitals as of May 15, 2019, with two additional hospitals actively onboarding
- Communicable Disease Reporting to the NC Division of Public Health – project on hold as of May 2017 per NC DPH readiness
- Medication Management module through CCNC's Pharmacy Home module – module enhanced at CCNC but not transferred to the NC HIEA in 2016
- Lab orders and results – As of October 2020, LabCorp is live and sending data to the HIEA. As of August 2020, Quest is live and sending data to the HIEA (These two companies share the NC lab market with the State Lab of Public Health and hospital laboratories)

The following additional value-added features to address market demands and support Meaningful Use are in production or development as of May 15, 2020:

- State-level Disease Registries – the NC Diabetes Registry, a collaboration between NC DPH and the NC HIEA, is the first in the series, and was completed in June 2018. Planning for additional registries in partnership with NCDPH is underway.
- Clinical Event Notifications– the NC HIEA launched the NC*Notify clinical event notifications in September 2018; released Version 2.0 in April 2019, enabling additional clinical information inputs and delivery methods; released Version 3.0 in May 2020, enabling real-time HL7 notifications; released V3+ in summer 2020 providing additional data sources and a web-based application integrated into the clinical portal for care management. In spring of 2021, the NC HIEA released V4 and V4+ providing access to COVID-19 lab result alerts, allowing providers to react to positive cases in a timelier manner. In addition to COVID-19 notifications, additional alerts available include: High Utilizer Alert, Dental Alert, Care Team Change Alert, Diabetes Diagnosis Alert, and a Chronic Care Management Alert.
- Integration with the Controlled Substances Reporting System (CSRS) – requirement per NC Session Law 2015-241 Section 12.F.16.(f)(1); initial phase enables SSO access to the CSRS via the NC HealthConnex Clinical Portal. In September 2020, the NC HIEA began onboarding participants to this service.

Supporting Services

Supporting services include the functions needed to maintain the technical operations and include:

- *Systems Environments*: Ability to maintain appropriate environments for development, testing, training, and production.
- *Hosting Services*: Technical infrastructure and services needed to run, maintain, and support service delivery.
- *Training*: Training of end users and administrators within NC HealthConnex.
- *Help Desk*: Operations support and maintenance.

The technical framework of NC HealthConnex has changed little since the inception of the statewide HIE network in 2012. The figure below depicts the NC HealthConnex architecture and data flow with participating entities as of May 15, 2019.
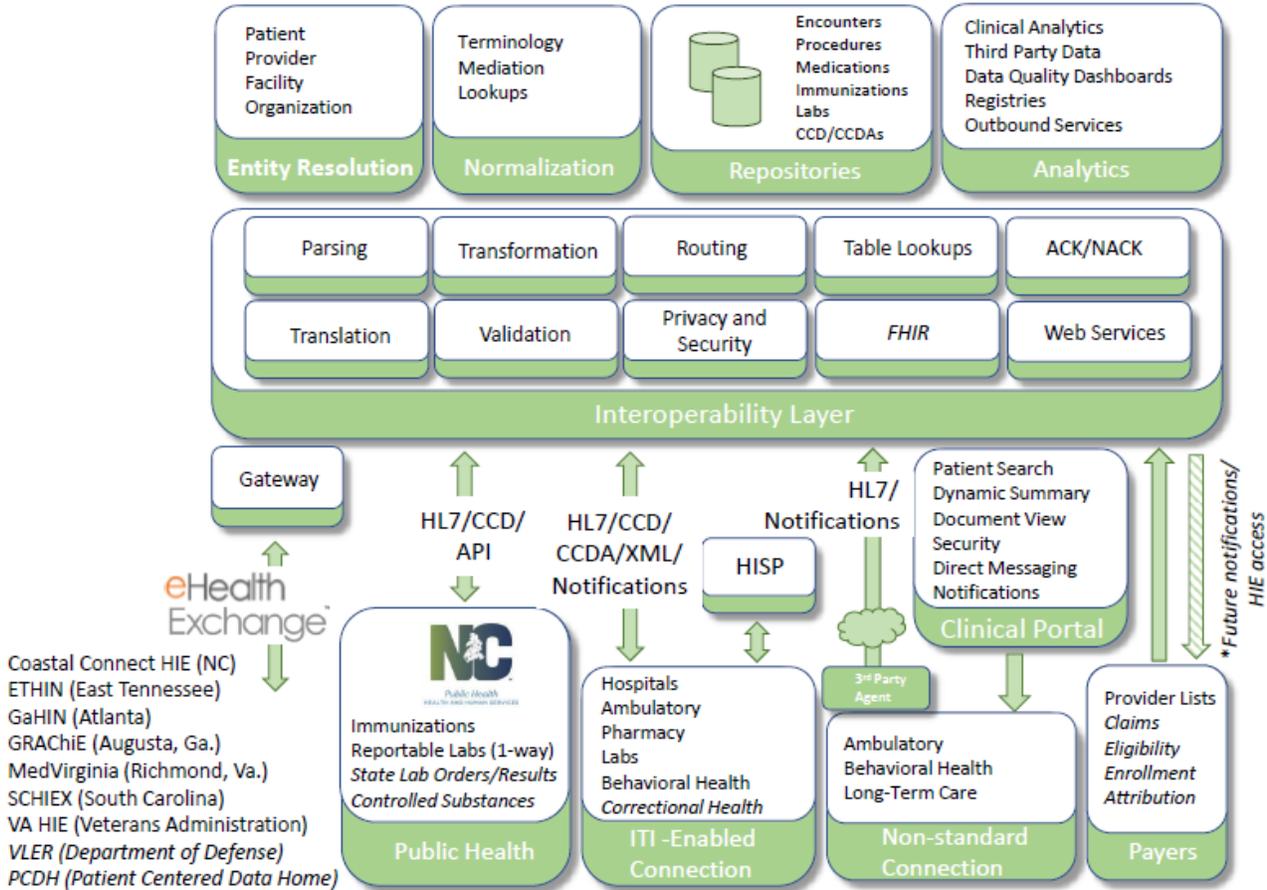
Figure 5 - Illustration of NC HealthConnex data architecture and relationships with other entities

B.2.3 Strategy for Statewide HIE under the NC Health Information Exchange Authority

Since its inception, the statewide HIE network encountered many barriers to connecting the key players in the healthcare community, including high integration costs, coordinating with the upgrade or adoption of each organization's own EHR system, and the constraints on internal resources that these projects create. In addition, health systems in North Carolina have continued to increase in number, size and scope so that an increasing percentage of care delivery is now being delivered through these systems. These challenges have required the HIE's different governance structures to consider alternative approaches and reassess strategies for accelerating statewide adoption of HIE. The map below illustrates key health systems and health information exchange organizations at play in North Carolina as of 2019.
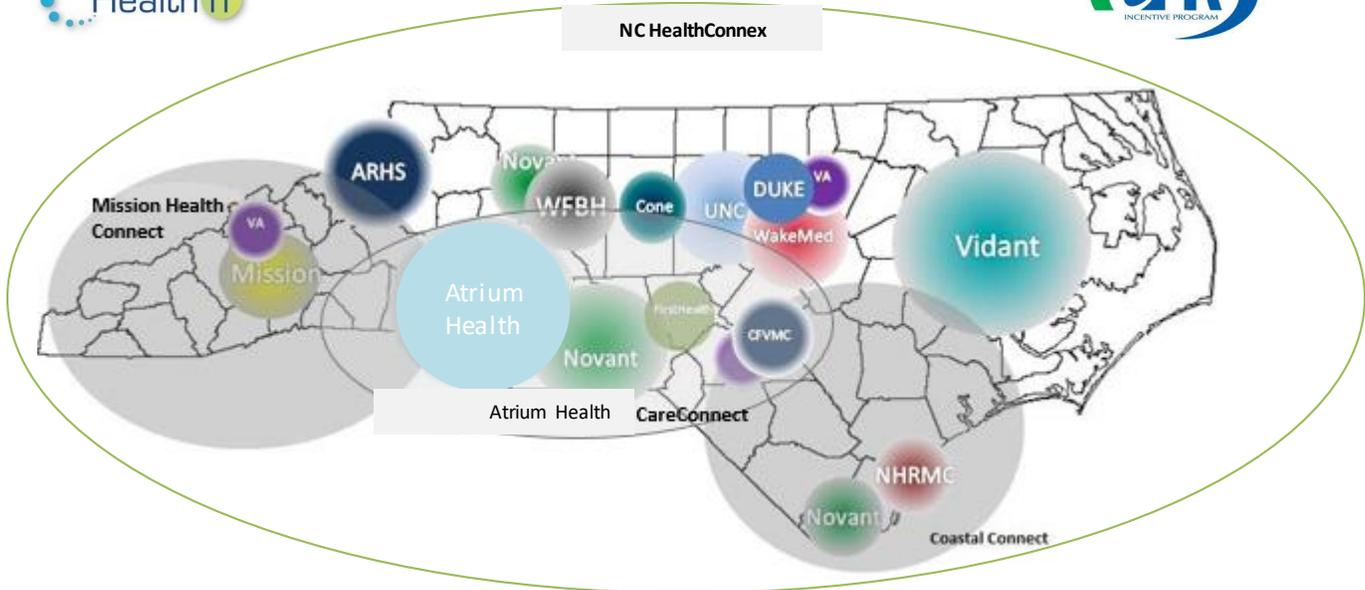
Figure 6 - Key Health Systems and Health Information Organizations in NC

As noted in *Section B.2.1. Statewide HIE Governance and Organizational Approach*, the near-term strategy for the statewide HIE network, now called NC HealthConnex, is similar to the approach while under N3CN governance in 2013-2015 in that the main focus remains connecting providers that serve state-insured populations, though the main driver and differentiating advantage for 2016 forward was the 2015 state law requiring participation in NC HealthConnex by all NC health care providers receiving Medicaid or other state funds for provision of services by dates in 2018-2021 (see NC Session Law 2015-241 Section 12A.5, as amended by NC Session Law 2015-264, NC Session Law 2017-57 and NC Session Law 2018-41). The aggressive deadlines set forth in the law and in subsequent amendments are finally moving the needle with provider engagement and the NC health care market and demanding the NC HIEA's attention be placed on provider onboarding efforts, which made the short-term strategy limited and clear.

2017-2018 saw enormous progress in onboarding efforts, with nearly all organizations represented in the map above successfully onboarded to the HIE and sharing data. The NC HIEA will remain focused on onboarding smaller provider organizations and independent providers serving the state-insured population during 2019-2021, while simultaneously optimizing existing HIE features and completing the build of value-added features, including but not limited to:

- Enhancing clinical notifications delivery, including improvements to the NC*Notify service like inclusion of additional clinical data, delivery methods, and eventually "smart notifications" that leverage clinical intelligence to pull relevant data depending on the patient and event;
- Completing subsequent disease registries together with the NC DPH;
- Completing the integration effort with the NC Controlled Substances Reporting System to enable HIE participants to seamlessly access patient reports via their HIE connection;
- Continuing to onboard hospitals to the Electronic Lab Reporting functionality to NC DPH; and
- Continuing an accelerated, coordinated NC Immunization Registry onboarding effort with NC DPH and their list of registered providers.

The NC HIEA completed a three-year strategy document in April 2019, which is now available for download on its website: NC HIEA Roadmap 2021. This document includes five strategic focus areas for 2019-2021 with embedded initiatives under each. Among them, continued onboarding efforts; optimization of analytic capabilities for NC

DHHS/NC Medicaid, as well as for health care providers and other payers; and appropriate HIE access for payers, patients, disaster response workers and other populations with a HIPAA-compliant need to view patient history.

2019-2021 – Continued Onboarding Efforts and Driving Value Through Statewide Interoperability and Analytics

Over the next three years, the NC HIEA will continue to place its main focus on integrating the state's remaining providers of health care services for which Medicaid, State Health Plan, or other state funds are received. These connections represent over 90 percent of the state's health care providers and are expected to cover nearly all of the state's ten million lives. In instances where the Participant is willing, the NC HIEA will accept Participation Agreements from organizations serving patients not included in the state-insured population, though these integrations may be scheduled for later implementation.

The figure below represents the major organizations/facilities/provider groups that the NC HIEA has been targeting for integration through 2021, in addition to pharmacies, laboratories, and other providers subject to connect under state law. A green check-mark indicates that the organization is live with NC HealthConnex; a blue asterisk indicates that onboarding is partially completed and/or currently underway.
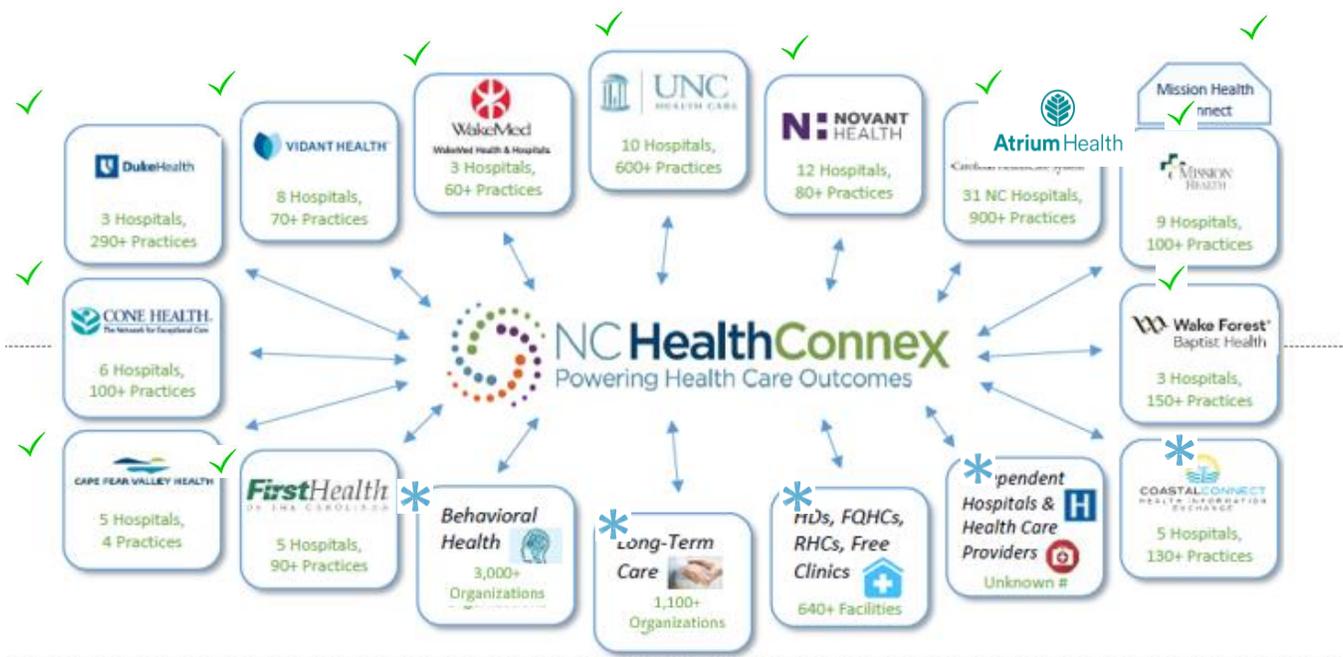
Figure 7 - Statewide Connection Status for NC HealthConnex, 2019

Note: The NC HIEA calculated the number of hospitals and practices in each system based on information from each organization's website, and/or as received from the entity directly.

Because all provider types that receive state funds of any kind for provision of health care services are required by law to participate with NC HealthConnex by dates through 2021, the NC HIEA's strategy must be to simultaneously onboard hospitals, primary care providers, health departments, rural health organizations and clinics, specialists, behavioral health providers, substance abuse treatment providers, long-term care providers, skilled nursing facilities, home health providers, correctional health providers, pharmacies, laboratories, emergency medical service providers, public health providers, and other types of providers that fall under the state mandate, together, as efficiently and expeditiously as possible.

Having ADT and CCD information available through NC HealthConnex represents many immediate benefits to participating providers, particularly as the participant base and data repository grow. These benefits include:

- Increase efficiency and decision-making by enabling access to more complete patient information at the point of care;
- Prevent unnecessary hospital readmissions by enabling electronic care transitions and continuity of care after discharge;
- Ease physician workflow requirements with automated reporting to NCIR;
- Reduce adverse drug events resulting from drug interactions and allergies by providing improved access to medication and allergy history;
- Support Meaningful Use requirements;
- Create efficiencies related to sophisticated decision support;
- Communicate directly with other providers through secure messaging;
- Help to provide a patient-centered medical practice environment;
- Provide improved care coordination among different providers;
- Provide quicker access to patient clinical results resulting in decreased duplicate medical testing;
- Result in more efficient patient care by providing a wider range of access to patient histories; and
- Enable more comprehensive care management for chronic disease populations.

The NC HIEA anticipates onboarding the majority of the state's health care providers by 2021, but expects onboarding efforts to continue for many years, as those who have been slow to adopt technology do so, and the health care and EHR markets continue to mature. However, after the initial surge of onboarding in 2017-2018, the NC HIEA has shifted some focus and resources toward efforts to enable HIE access for other critical groups—such as correctional health services, disaster response teams, and emergency medical services; connect other state and nationwide patient data systems; and driving value for health care providers, the state, and other health care payers through analytics of available statewide health care data.

One of the benefits of leveraging the existing NC Government Data Analytics Center (GDAC)-SAS Institute partnership for NC HealthConnex is the knowledge and experience SAS brings to bear in advanced analytics for business administration. Under the aforementioned law, the NC HIEA is directed to build an HIE data analytics warehouse that will support Medicaid and State Health Plan administration and may also support additional analytic use cases for providers and payers.

The NC HIEA Roadmap 2021 envisions connected health care communications across North Carolina's many entities and patient data systems, which ultimately serve the patient and the state, as depicted in the figure below.
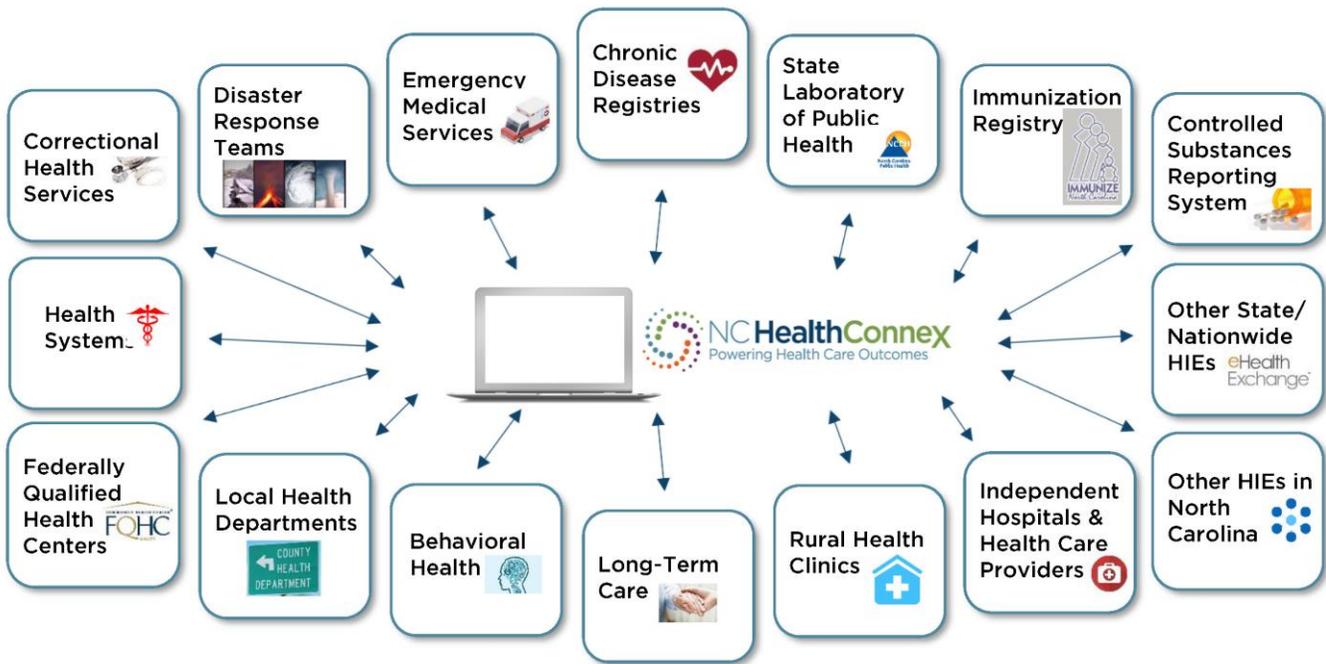
Figure 8 - Vision 2021 for Health Care Communications With NC HealthConnex

While currently supported entirely by state-appropriated and federal HITECH funds, and being built as a figurative "public utility" for health care providers, patients and payers in North Carolina, the HIE is also planning for future sustainability.

B.2.4 Risks and Mitigation Strategies

In early versions of this SMHP (2010-2016), this section has focused mainly on the risks involved in failing to complete HIE core services development, and the possibility of misalignment of the HIE's core services with current/future Meaningful Use criteria. NC HealthConnex core services development is complete, and its core offering is very much aligned with several Meaningful Use objectives per *Section B.2.6 Link to Meaningful Use Strategy*.

Risks and mitigation strategies for the challenges before the NC HIEA from 2019-2021 are as follows in the table below.

Description of Risk	Probability	Impact	Prevention/Mitigation Strategy
Medicaid providers do not sign Participation Agreements early enough ahead of connection deadlines to achieve timely integration	Moderate	High	The NC HIEA performs statewide outreach through provider and advocacy organizations and will increase these efforts jointly with NC Medicaid to educate Medicaid providers on the connection requirement and its legal prerequisite, signing the DURSA-based NC HIEA Participant Agreement. The NC HIEA holds regular "How to Connect" calls/WebEx to explain and answer questions on the Participation Agreement and the anticipated connection timeline and has educated key stakeholders and REC practice support personnel in these areas.
Insufficient technical capacity to onboard all signed Participants subject to connect by dates in 2018-2021 as specified by state law	Moderate	High	In preparation for continued accelerated Medicaid provider onboarding in 2019-2021, the HIE's technical vendor, SAS Institute, continues to grow the size of its internal team and broaden its network of experienced integration subcontractors, whose resources may be incrementally added to scale up integration efforts as demand (i.e., the signed participant base) increases. The NC HIEA has also recommended additional adjustments to the law as currently written to provide more time for certain provider types to connect and make connection voluntary for others where the cost and effort would exceed the value of the data they collect (e.g., hospice service providers). These changes were codified in law in June 2019, NCSL 2019-23, also known as NC House Bill 70.

Description of Risk	Probability	Impact	Prevention/Mitigation Strategy
Time and resource constraints (and competition with other initiatives) of other state agencies or nationwide systems to connect their patient data systems to NC HealthConnex	Moderate	Moderate	Part of the NC HIEA's strategy for 2019-2021 is to expand its available patient data and HIE features to include that from other state systems like the NC DPH's NC Immunization Registry, NC Controlled Substances Reporting System, and NC State Laboratory of Public Health; and other nationwide systems like the US Department of Defense and nationwide Patient Centered Data Home.
			The NC DPH is tasked with preparedness efforts to keep the state population safe from disease outbreaks, and other such duties that can take precedence over its projects for data integration with NC HealthConnex. Nationwide systems likewise have competing priorities to connection with NC HealthConnex.
			NC DPH and NC HIEA leadership will hold regular touchpoints to track initiatives and barriers or constraints to meeting project timelines. In addition, the NC HIEA has dedicated a staff to each initiative, to lead careful planning and vetting of activities and project plans with all relevant stakeholders and co-manage initiatives with regular project touchpoints.

Description of Risk	Probability	Impact	Prevention/Mitigation Strategy
Time and resource constraints (and competition with other initiatives) of the Participant and/or EHR vendor	High	Moderate	The NC HIEA performs statewide outreach through provider and advocacy organizations, and will increase these efforts jointly with NC Medicaid, to make clear: 1) the connection deadlines set forth in NC Session Law 2015-241 Section 12A.5, as amended by NC Session Law 2015-264, NC Session Law 2017-57 and NC Session Law 2018-41, and 2) the process to connect, including time and resource requirements of the Participant and EHR vendor. Once a Participant signs, the technical kick-off packet and call/WebEx set forth Participant and vendor expectations and timelines for connection to NC HealthConnex and provide a forum for all parties to commit to a project timeline for integration. The NC HIEA also works directly to engage and educate EHR vendors on the requirement and steps required to connect on behalf of their Medicaid-serving provider clients and encourages and facilitates joint communication efforts to providers through EHR vendors. After each vendor completes the initial integration process, the NC HIEA and SAS leverage those vendor relationships to expedite subsequent Participant integrations.
HIE sustainability if state appropriations for HIE operational support do not continue past 2021	Low	Low	The NC HIEA is exploring sustainability paths apart from or in addition to state funding, including fees for health plan Participants (payers), fees for use of analytics or value-added features, and education of NC lawmakers on the value of a statewide HIE network as a publicly-funded utility.

Table 4 - HIE Risk Analysis

As noted in previous SMHP versions, NC Medicaid will manage risk through direct engagement with the NC HIEA and through rigorous oversight and monitoring activities. NC Medicaid's contract with the NC HIEA for the Medicaid onboarding effort described in the NC HIE I-APD Version 1.0 includes a detailed statement of work with funding tied to quarterly implementation milestones. The NC HIEA provides quarterly updates on the number of Participants who have access to core HIE services and progress toward the goals and objectives stated in the NC

HIE I-APD to NC Medicaid and CMS. In addition, the NC HIEA has begun more detailed monthly reporting across the NC Medicaid Information Systems enterprise and to CMS as of May 2019.

B.2.5 Annual Benchmarks and Performance Goals

For 2019-2021, the NC HIEA's goals for NC HealthConnex are still largely related to onboarding providers that receive state funds for the provision of health care services, at the direction of the NC General Assembly per NC Session Law 2015-241 Section 12A.5, as amended by NC Session Law 2015-264, NC Session Law 2017-57 and NC Session Law 2018-41. However, additional goals have been added in this Version 4.4 of the SMHP to reflect additional focus areas as described in NC HIEA Roadmap 2021. These include improved utilization of the HIE and its features (namely, NC*Notify clinical event notifications), improvement of the quality of data within the HIE (% of HIE Participants compliant with the NC HIEA's minimum data target), and provider satisfaction with NC HealthConnex. These are as follow in the table below. These goals and benchmarks will be updated annually through 2021.

Performance Goal	Metric	2016 Baseline	2018 Goal	2018 Actual	2019 Goal	2019 Actual	2020 Goal	2020 Actual	2021 Goal	2021 Actual
Expand connectivity to NC HealthConnex core services	Total # of facilities	835	5,000	4,502	7,500	6,290	8,500	8,116	10,000	
	Total # of hospitals	22	110	97	120	113	125	126	130	
	Total # of health departments	23	85 (all)	63	85 (all)	72	85 (all)	85 (all)	85 (all)	
Expand patient and provider base within NC HealthConnex	Total # of unique providers with contributed patient records in NC HealthConnex	19,744 (April 2017 actual)	TBD	41,568	65,000	TBD*	70,000	35,868 Medicaid Only	75,000	
	Total # of unique patients in NC HealthConnex	3.5 million	8 million	6 million	10 million	9.4 million	10 million*	13 million	10 million*	
Improve utilization of NC HealthConnex and its features	Average monthly queries to NC HealthConnex	N/A	N/A	300,000+	450,000	450,000	675,000	701,000	1,012,500	
	Utilization of NC*Notify clinical event notifications, measured by patient lives monitored	N/A	N/A	250,000 patients	1 million patients	1.5 million patients	2.5 million patients	3.4 million patients	5 million patients	

| Improve NC HealthConnex data quality | % of HIE Participants compliant with the NC HIEA's minimum data target | N/A | N/A | 78% | 82% | 81% | 86% | 85% | 90% | |
| Provider satisfaction with NC HealthConnex | % of participants satisfied or very satisfied with NC HealthConnex (overall) and NC*Notify | N/A | N/A | 77% | 80% | 79% | 85% | A provider satisfaction survey was not conducted due to COVID-19 impacts. | 90% | |

The state's population hovers around 10 million, so while the total # of unique patients will grow slowly thereafter due to movement in the population, the goal has not been set higher than 10 million.

The HIEA is upgrading its analytic environment and does not have an updated contributed provider report.

Table 5 - Annual Benchmarks and Performance Goals for the Statewide HIE, 2019-2021

B.2.6 Link to Meaningful Use Strategy

In October 2010, NC HIE's Clinical and Technical Operations Workgroup evaluated the ability for NC HIE and the private market to support providers' ability to meet current and anticipated requirements of meaningful use. The table below shows this initial crosswalk and whether the HIE achieved each MU-related goal.

MU Stage 1 Objectives		MU Set	Role of NC HIE/NC HealthConnex's Core Services	NC HIE/NC HealthConnex Met Goal?
Eligible Professionals	**Eligible Hospitals**	**Core/Menu**		
Generate and transmit **permissible prescriptions electronically (eRx)**	*Not applicable*	Core	Not applicable; functionality addressed via EHR. HIE services not sponsored or hosted by NC HIE.	n/a
Incorporate **clinical lab-test** results into EHR as structured data	Incorporate **clinical lab-test** results into EHR as structured data	Menu	HIE's deployment of core services will include laboratory normalization functions that will facilitate the interoperable exchange of clinical lab-test results.	Yes. Normalization delivered initially through core services. NC HIEA working to secure contracts with, the NC State Lab of Public Health. Quest and LabCorp feeds are live for

MU Stage 1 Objectives		MU Set	Role of NC HIE/NC HealthConnex's Core Services	NC HIE/NC HealthConnex Met Goal?
Eligible Professionals	**Eligible Hospitals**	**Core/Menu**		
				the Medicaid population.
Report ambulatory quality measures to CMS or the states	**Report hospital quality measures** to CMS or the states	Core	To be addressed by service provisioned by N3CN.	Now under state governance, there are no immediate plans as of 2019 for NC HealthConnex to support e-CQM reporting for the Promoting Interoperability Programs. The NC HIEA delivered data extracts to the Division of Health Benefits for Diabetes, Hypertension, and BMI. We have initiated a pilot effort with Office of Rural Health, focusing on 2 Rural health centers and 2 measures. COVID vaccine related activities have sidelined these efforts temporarily.
Capability to exchange **key clinical information** (for example, problem list, medication list, allergies, diagnostic test results), among providers of care and patient authorized entities electronically	Capability to exchange key clinical information (for example, discharge summary, procedures, problem list, medication list,	Core	Core Services will enable authorized users on the statewide HIE network to search for, transmit, and receive summary care records.	Yes. Delivered through the deployment of core services.

MU Stage 1 Objectives		MU Set	Role of NC HIE/NC HealthConnex's Core Services	NC HIE/NC HealthConnex Met Goal?
Eligible Professionals	Eligible Hospitals	Core/Menu		
	allergies, diagnostic test results), among providers of care and patient authorized entities electronically			
The EP, EH or CAH who transitions their patient to another setting of care or provider of care or refers their patient to another provider of care should **provide summary of care record for each transition of care or referral**	The EP, EH or CAH who transitions their patient to another setting of care or provider of care or refers their patient to another provider of care should **provide summary of care record for each transition of care or referral**	Menu	Core Services will enable authorized users on the statewide HIE network to search for, transmit, and receive summary care records.	Yes. Delivered through the deployment of core services.
Capability to **submit electronic data to immunization registries or Immunization Information Systems** and actual submission in accordance with applicable law and practice	Capability to **submit electronic data to immunization registries or Immunization Information Systems** and actual submission in accordance with applicable law and practice	Menu	As a value-added feature, to be the conduit for a bidirectional interface between health care providers and the NC Immunization Registry (NCIR) that would enable automated vaccine reporting from the provider EHR, as well as support query of the NCIR for vaccination history and recommendations.	Yes. Live bi-directional interface with NCIR delivered as a value-added feature of NC HealthConnex, subject to provider onboarding by NC DPH Immunization Branch and the NC HIEA.

MU Stage 1 Objectives		MU Set	Role of NC HIE/NC HealthConnex's Core Services	NC HIE/NC HealthConnex Met Goal?
Eligible Professionals	Eligible Hospitals	Core/Menu		
Not applicable	Capability to submit electronic data on **reportable (as required by state or local law) lab results** to public health agencies and actual submission in accordance with applicable law and practice	Menu	As a value-added feature, to be the conduit for a unidirectional, automated daily batch reporting interface from HIE Participant hospitals to NC DPH.	Yes. Live unidirectional interface with NC DPH supports eleven hospitals as of May 15, 2019, with two more hospitals actively onboarding for daily reporting.
Capability to **submit electronic syndromic surveillance data** to public health agencies and actual submission in accordance with applicable law and practice	Capability to **submit electronic syndromic surveillance data** to public health agencies and actual submission in accordance with applicable law and practice	Menu	To be addressed as a value-added service/feature of the HIE.	No. Public health leadership decided to delay electronic submission to NC EDSS by eligible professionals until after the NCIR, SLPH, and Vital Records systems were fully integrated with the statewide HIE network.

Table 6 - Core HIE Services and Stage 1 Meaningful Use Criteria

NC HealthConnex can support several of the Stage 3 Meaningful Use measures and objectives in use from 2019 forward. A crosswalk of these measures and NC HealthConnex functionality (including some future functionality) is shown in the table below.

Stage 3 MU Objective	Stage 3 MU Measure(s)	Supporting NC HealthConnex Functionality
	EP Measures: An Eligible Professional (EP), through a combination of meeting the thresholds and exclusions (or both), must satisfy all three measures for this objective: Measure 1 – More than 60 percent of medication orders created by the EP during the Promoting	• **State Laboratory of Public Health Orders and Results:** This new capability will allow Medicaid providers to use CPOE within their EHR to order laboratory tests from the State Laboratory of Public Health. This new functionality will contribute to Measure 2 for

	Interoperability (PI) reporting period are recorded using computerized provider order entry.
	Measure 2 – More than 60 percent of laboratory orders created by the EP during the PI reporting period are recorded using computerized provider order entry.
	Measure 3 – More than 60 percent of diagnostic imaging orders created by the EP during the PI reporting period are recorded using computerized provider order entry.
	EH Measures: An Eligible Hospital/Critical Access Hospital (CAH) must meet the thresholds for all three measures.
	    Measure 1 – More than 60 percent of medication orders created by the authorized providers of the eligible hospital or CAH inpatient or emergency department (POS 21 or 23) during the Promoting Interoperability (PI) reporting period are recorded using computerized provider order entry.
	    Measure 2 – More than 60 percent of laboratory orders created by the authorized providers of the eligible hospital or CAH inpatient or emergency department (POS 21 or 23) during the PI reporting period are recorded using computerized provider order entry.
	    Measure 3 – More than 60 percent of diagnostic imaging orders created by the authorized providers of the eligible hospital or CAH inpatient or emergency department (POS 21 or 23) during the PI reporting period are recorded using computerized provider order entry.
		participating Medicaid providers, and will help to convert some of the two million labs now annually requested via paper and portal to an electronic process, seamlessly integrated within the provider's EHR.

	Measures (identical for EP/EH): Providers must attest to all three measures and must meet the threshold for at least two measures to meet the objective.
	    Measure 1 – For more than 50 percent of transitions of care and referrals, the EP/EH/CAH that transitions or refers their patient to another setting of care or provider of care: (1) Creates a summary of care record using CEHRT; and (2) Electronically exchanges the summary of care record.
	    Measure 2 – For more than 40 percent of transitions or referrals received and patient encounters in which the provider has never encountered the patient, the EP/EH/CAH incorporates into the patient's EHR an electronic summary of care document.
	• **Measure 3** – For more than 80 percent of transitions or referrals received and patient encounters in which the provider has never before encountered the patient, the EP/EH/CAH performs a clinical information reconciliation. The provider must implement clinical information reconciliation for the following three clinical information sets: (1) Medication. Review of the patient's medication, including the name, dosage, frequency, and route of each medication. (2) Medication allergy. Review
		• Direct Secure Messaging available to all NC HealthConnex participants through the NC HealthConnex Clinical Portal or visually integrated within a provider's EHR. The NC HealthConnex HISP is DirectTrust accredited and maintains compliance with all ONC/DirectTrust requirements.
		• Provider Directory with 24,000+ provider addresses available through NC HealthConnex Clinical Portal and sent to NC HealthConnex participants directly for use within their EHRs (updated quarterly).
		• Query-based retrieval of patient records within NC HealthConnex by providers at the point of care. New capability in 2019-2020 for EHR-integrated users to access a consolidated CCD which will contain the most current, consolidated information for Measure 3.
		• Backend reporting on message delivery notifications for MU/PI reporting verification/audit logging.
		• Note: non-eligible provider types connected to NC HealthConnex will augment the electronically available referral/trading partners for EPs/EHs/CAHs.

	of the patient's known medication allergies. (3) Current Problem list. Review of the patient's current and active diagnoses.	
	Measures (1-5 identical for EP/EH): **Measure 1** – Immunization Registry Reporting: The EP/EH/CAH is in active engagement with a PHA to submit immunization data and receive immunization forecasts and histories from the public health immunization registry/immunization information system (IIS). **Measure 2** – Syndromic Surveillance Reporting: The EP/EH/CAH is in active engagement with a PHA to submit syndromic surveillance data from an urgent care setting. **Measure 3** – Electronic Case Reporting: The EP/EH/CAH is in active engagement with a PHA to submit case reporting of reportable conditions. **Measure 4** – Public Health Registry Reporting: The EP/EH/CAH is in active engagement with a PHA to submit data to public health registries. **Measure 5** – CDR Reporting: The EP/EH/CAH is in active engagement to submit data to a CDR. ***EH Only:* Measure 6** – Electronic Reportable Laboratory Result Reporting: The EH/CAH is in active engagement with a PHA to submit electronic reportable laboratory (ELR) results.	• **Immunization Registry Reporting**: Live bidirectional connection to the NC Immunization Registry (NCIR), allowing for automated reporting from entry into the EHR patient record directly to the NCIR, as well as query capability through the EHR or NC HealthConnex Clinical Portal to the NCIR to pull vaccination history and recommendations. • **Public Health Registry Reporting:** All connected NC HealthConnex participants, once live, automatically submit data to the NC Diabetes Registry. NC HealthConnex provides documentation to this end for provider records/audit logging. **Electronic Reportable Laboratory Result Reporting:** Reporting through NC HealthConnex live/available. Hospital laboratories may submit their ELR daily batches via NC HealthConnex to NC DPH.

Table 7 - Stage 3 Meaningful Use Objectives and Supporting NC HealthConnex Functionality

B.2.7 Clinical Quality Measures and Public Health Interfaces

At this time, the NC HIEA does not support the calculation and electronic reporting of clinical quality measures for the Promoting Interoperability Programs for its Participants. The NC HIEA plans to work closely with NC Medicaid and the Office of Rural Health to develop a strategy to support quality measurement under the new managed care structure. The NC HIEA is planning to participate in the NCQA's data aggregator validation program to support data aggregation for clinical quality measure reporting in partnership with NC Medicaid.

North Carolina's public health utilities through the Division of Public Health (DPH) include the following services (with related HIE capabilities in parentheses):

- NC Immunization Registry (bidirectional functionality live/available)
- Electronic Lab Reporting (daily batch reporting functionality live/available)
- NC Diabetes Specialized Registry (automated reporting for all HIE participants live/available)
- Additional NC Specialized Disease Registries (in planning stages for build of stroke registry)
- State Laboratory of Public Health (bidirectional orders/results interface planned for 2020-2021)
- NC Controlled Substances Reporting System (access within the HIE Clinical Portal complete;
- Central Cancer Registry (potential candidate for future integration)

B.2.8 Short- and Long-Term Value Proposition

The creation and provision of statewide HIE core services and value-added features will yield benefits for participants across operational, service delivery, and programmatic dimensions as outlined in the table below.

Category	Participant Benefit
Operations	- Reduced cost of operations and solutions - Leverage common services (e.g., Value-Added nationwide HIE and public health gateways) - Leverage investment in Core Services to reduce cost of connecting physicians - Access to shared applications services - Single connection and data governance model - Reduces cost of managing multiple interfaces and negotiating independent data agreements - Consolidates required data feeds across multiple state reporting requirements - Provides legal benefits to participants - Indemnification for physicians and the participants
Service Delivery	- Improve care coordination and quality across a broader community - Leverage connectivity to patient records available from other states and federal agencies via the eHealth Exchange gateway and the Patient Centered Data Home
Program	- Ability to participate in collaborative community - Ability to meet Meaningful Use and MIPS requirements related to health information exchange

Table 8 - Participant Benefits

B.3 Meeting the Goals for Adoption of Certified EHR Technologies

NC DHHS takes the following steps to accelerate adoption:

1. Early Implementation of the Medicaid EHR Incentive Program

In early 2011, NC actively invested in developing the systems necessary to administer the Medicaid EHR Incentive Program, including working with CMS and its partners on the connection of NC's Medicaid Incentive Payment System (NC-MIPS) with the Centers for Medicare & Medicaid Services' Registration & Attestation System (CMS R&A). The first EPs who successfully attested to AIU of CEHRT received payment in March 2011.

2. Partnering with the AHEC

In addition to administering the physician practice quality improvement program, NC AHEC provides individualized, onsite EHR consulting services to practices through a contract with NC Medicaid. NC Medicaid partners with the NC AHEC program to continue the adoption, use and optimization of Certified Electronic Health Record Technology (CEHRT) and further its use in supporting practice transformation toward participation in pay-for-value programs.

3. Multi-channel communication

An investment has been made in several different communication channels to connect with, inform, and encourage providers in their adoption of EHRs. As of May 2021, major efforts include:

- Dedicated NC Medicaid EHR Incentive Program webpage within the DHHS website, including an extensive webinar and FAQ section, at https://medicaid.ncdhhs.gov/medicaid-ehr-incentive;

- Dedicated NC Medicaid EHR Incentive Program helpdesk – NCMedicaid.HIT@dhhs.nc.gov;
- Monthly contributions to the Medicaid Provider Bulletin, available at https://medicaid.ncdhhs.gov/providers/medicaid-bulletins; and
- Emails directly to the Medicaid provider community on various topics.

For a more complete look at the NC Medicaid EHR Incentive Program's outreach and communication activities, refer to *Section C.2 Outreach and Provider Support* of this plan.

B.4 Supporting Quality Reporting and Care Improvement Goals

While access to HIE services and widespread adoption of CEHRT are critical enablers of care improvement, providers also need the ability to collect, report and receive feedback on quality indicators to advance care and population health along evidence-based guidelines. Therefore, North Carolina will ensure providers have routine and timely feedback on the CMS-approved quality measures they collect and submit.

In addition, NC DHHS will expand upon its hands-on quality improvement model, the North Carolina Improving Performance in Practice (IPIP) project via the NC AHEC Program, developed in partnership with the NC Governor's Office, the NC DPH, CCNC, NCMS, the NC Academy of Family Physicians, CCME, the NC Healthcare Quality Alliance, and the major insurers in the state and other state agencies. NC IPIP was funded through NC AHEC funds as well as funding from philanthropic and other grant and payer organizations and delivered through a statewide network of QICs employed by the NC AHEC Program at each of its nine regional centers. Through AHEC's partnerships, all primary care providers in NC who accept Medicaid have access to the resources of the QICs. The QICs are currently working in over 475 primary care practices across the state, providing assistance to:

- Integrate the use of the EHR into practice workflow to improve care management;
- Develop office systems within the EHR to track patients with specific chronic diseases;
- Train practice staff to use data from EHR systems to produce dynamic, electronic reports reflecting clinical performance as measured by nationally-endorsed indicators;
- Assist practices in reporting quality measures;
- Educate practices on the importance of participating in HIE;
- Build the consistent use of quality measurement and HIE into common office policies and protocols to support improvement in care with increased access to data;
- Assist practices to use resources within the EHR to help educate their patient population on the importance of preventing and/or managing chronic disease;
- Stay current on all Promoting Interoperability criteria as it evolves over time; and,
- Provide electronic reporting to the designated public entity.

The NC AHEC Program has expanded this proven model to embody the work of the REC by putting in place the personnel, educational resources, and direct technical assistance support to successfully implement and utilize technology to improve the quality of healthcare as funding allows.

B.5 Vendor Initiatives through FFY 2021

B.5.1 North Carolina Area Health Education Centers

With Promoting Interoperability, previously described as Modified Stage 2 and Stage 3 of MU, and the CMS Quality Payment Program (QPP), NC will promote the electronic exchange of health information to improve the quality and lower the cost of health care in North Carolina. It is with this goal in mind that NC leveraged NC AHEC's existing infrastructure and strong history of adult learning to continue the work done in Stage 1 and 2 MU to promote the

electronic exchange of health information to improve the quality and lower the cost of health care in North Carolina.

The objectives tied to the enhanced funding for NC Medicaid/NC AHEC initiatives have been as follows:

- Help NC physicians meet federal Promoting Interoperability criteria;
- Promote health information exchange;
- Promote patient engagement through use of electronic patient portals;
- Identify and address vendor-specific barriers to the achievement of Promoting Interoperability; and,
- Strengthen an existing statewide project management database to improve NC's ability to deliver information rapidly and appropriately so that the data can be utilized to drive quality improvement practices.

NC AHEC has made tremendous strides in supporting these practices in meeting Promoting Interoperability goals by tackling some of the more difficult challenges like connectivity, information sharing, and patient engagement. NC AHEC has maintained up to 1.5 staff in each of the nine regional AHECs to meet the needs of these Medicaid providers to ensure the success of NC's HIT initiatives and to further promote and ensure a higher quality of care for the vulnerable patient populations they serve. Funding for AHEC through the HITECH IAPD will end June 30, 2021, but HIT/HIE work will continue under a contract with NC DHHS division of Health Benefits through June 2023.

B.5.2 North Carolina Office of Rural Health (ORH)

In support of rural health centers and clinics, critical access and rural hospitals, and other primary care safety net providers, ORH provides technical assistance for a number of initiatives. The Rural Health IT initiative is of critical importance to NC Medicaid and to the clinics and hospitals for which ORH provides financial and technical assistance. For example, rural hospitals, as well as many statewide medical facilities that treat low income and uninsured residents, may receive assistance through ORH grant funds. The current HIE mandate requires most of these rural health care organizations to be connected to NC HealthConnex as a condition of receiving state funds. Non-compliance with the state mandate could negatively affect these primary care safety net sites and their ability to operate financially. Additionally, data from the HIE provides a valuable component to information needed for population health and value-based care.

Not only does the Rural Health IT Initiative incentivize health care providers to establish or upgrade their IT systems, but it also begins to shift safety net sites from a fee-for-service model to a quality, value-based environment. ORH continues to work closely with NC Medicaid, NC AHEC, and the NC HIEA to provide Health IT assistance. ORH estimates that 17 state-supported Rural Health Centers sites, approximately 80 CMS rural health clinic sites, 20 critical access hospitals, 11 small rural hospitals, 83 free clinic sites, 257 community health center and FQHC-lookalike sites, 85 health department organizations that provide primary care, 53 telepsychiatry sites, 81 school-based health center sites, and 58 school-based health center telemedicine sites will continue to benefit from the additional technical assistance provided by the ORH Rural Health IT (HIT) Team. The Safety Net Sites map below illustrates an approximation of North Carolina's primary care safety net providers.

North Carolina Office of Rural Health
SFY 2020 Safety Net Sites
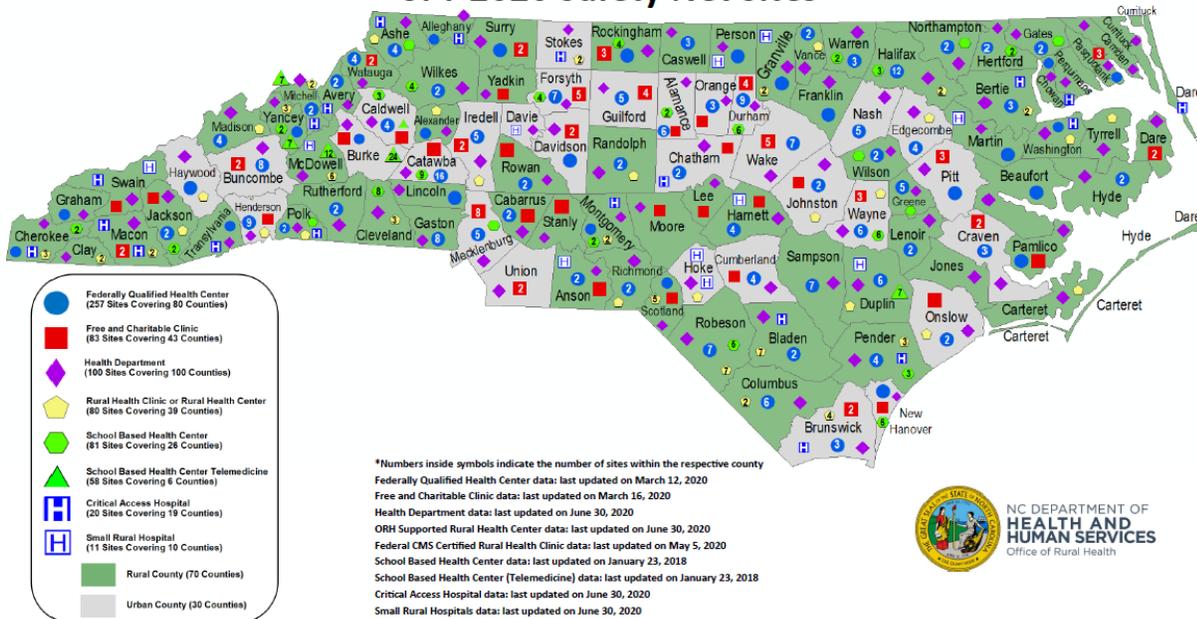
Following the ONC's "call to action" regarding the MU challenge in critical access and small rural hospitals, ORH has worked hand in hand with NC AHEC to add value and leadership in realizing the ONC's MU goal for these hospitals. In addition to the RHCs and critical access and rural hospitals, ORH aims to assist any requesting safety net provider with Health IT assistance. For example, several the free clinics in NC expanded their scope and became "free and charitable clinics," and now over 90 percent of the free and charitable clinics have adopted an EHR. As a result, these clinics hired additional providers where needed and have begun to accept and bill for Medicaid, making them eligible for MU/Promoting Interoperability with the need for more technical assistance while operating in this new environment.

Several behavioral health agencies have become National Health Service Corp (NHSC) eligible and have requested help with integrated primary care services and Health IT technical assistance, making them additional sites in need of ORH HIT's technical assistance. In May of 2018, NC Medicaid, ORH, NC HIEA, and NC AHEC collaborated to create a program to assist Behavioral Health Providers with state funding to procure an Electronic Health Record and connect to NC HealthConnex. Over 260 behavioral health organizations applied for $2.5 million in available funding. Of those applicants, 181 BH/IDD organizations were awarded $1.96 million of this funding. The ORH HIT team provides technical assistance to the awarded behavioral health organizations with selecting an EHR and connecting to NC HealthConnex.

ORH continues to support its Health IT efforts with a Rural Health IT program manager, three professional positions known as Rural HIT Specialists, one Telehealth Specialist, and one Health IT Database Administrator for a total of six HIT Team positions. The Rural HIT team requires professional positions with a high level of technical expertise; exceptional communication, presentation and training skills; and the ability to establish rapport not only with the clinics and hospitals but with other partners such as NC Healthcare Association (NCHA), NC Association of Free and Charitable Clinics (NCAFCC), NC Community Health Center Association (NCCHCA), NC

Medicaid, DHHS' Office of Health IT, NC Area Health Education Centers (AHEC) , NC Health Information Exchange Authority (NC HIEA), and other partners.

B.5.3 Medicaid Evidence-based Decision Project (MED Project) and the Drug Effectiveness Review Project (DERP)

The Program team has established a Clinical Quality and Data Workgroup, which is considering how data captured during MU can be effectively used to determine areas of potential improvement relative to Medicaid clinical coverage. The use of these MU data to study and develop evidence-based coverage offers great opportunity, and dovetails with the federal meaningful use of Meaningful Use, or MU[2], initiative. Evidence-based standards and measures provide a mechanism for Medicaid to select the best treatments for improving health outcomes. This ability to exercise sound decision-making provides policymakers an unbiased analysis of complex issues.

To supplement the evidence-based data available through MU measure reporting, NC Medicaid has participated in two initiatives coordinated by the Oregon Health Sciences University's Center for Evidence-based Policy. These two projects are the Medicaid Evidence-based Decision Project (MED Project) and the Drug Effectiveness Review Project (DERP).

The **MED Project** is a collaboration of 21 state agencies, primarily Medicaid, with a mission to provide policy-makers and decision makers the tools and resources to make evidence-based decisions. As a member of MED, North Carolina will receive the following benefits:

- **Evidence and Policy Reports** - North Carolina will have access to proprietary reports on a variety of policy and evidence issues. The MED project produces evidence-based answers to well-defined questions. These reports utilize robust research strategies to appropriately cover clinical, policy and financial issues.
  Recent report topics include: COVID-19, Telehealth services, Gender Dysphoria, Behavioral Health, Substance Abuse Disorders, Pregnancy, Educational Services for Children, Collecting Health Equity Data involving race and ethnicity, Childhood Immunizations, Intervention for high health care use, Maternal Mortality, Medicaid Oversight of Home Ventilators, Non-financial Strategies to Increase Dental participation in Medicaid, Extra-spinal Chiropractic Services for Musculoskeletal Conditions, and Real-time continuous Glucose Monitors. In addition to these recent reports, North Carolina will have immediate access to a full archive of all reports produced by MED since its creation.
- **Rapid Response to State-Specific Needs** - North Carolina will also have access to MED's Participant Request service, which allows members to contact the MED project staff at any time and request a brief review of the evidence on an emerging state issue. The MED team will quickly search for evidence and produce a report on the topic. Participant requests can take a variety of forms, including an expert librarian search, a brief evidence summary, a policy brief, or a review of information provided by a vendor. Recent participant requests include: Definitions and Policies for Cosmetic and Reconstructive Surgeries; Epidural Steroid Injections of the Cervical and Lumbar Spine; Health and Behavior Assessment and Intervention Codes Policy Analysis; Prenatal Genetic Testing; Robotic-assisted Hysterectomy in Obese Women; Spinal Injections for Chronic Low Back Pain - Policy Summary and Substance Abuse Testing in Outpatient Treatment Programs. North Carolina will be participating in this project for the FFYs of 2020-21 and 2021-22 with a two-year option.
- **Collaboration and Dissemination of Best Practices -** The MED Project is strengthened by the collective knowledge and expertise of its members. In addition to twice-monthly conference calls, participants meet twice a year at in-person meetings. These unique forums allow the MED project participants and other key staff to share ideas and collaboratively address common issues.
  In addition to its regular meetings, MED convenes Working Groups to address areas of special interest to states. These groups address current challenges on priority issues through review of evidence and

policies as well as sharing current state practices. Currently MED has five working groups: 1) E-Health, 2) Behavioral Health 3) Durable Medical Equipment, 4) Substance Use Disorder, and 5) Genetic Testing.

- **Information Resources -** North Carolina will have access to several proprietary information sources including:

    - o <u>Web-based Information Clearinghouse</u> - The Information Clearinghouse compiles MED reports, federal, state and private payer policies and news and discussion forums, in a single location. It is available to participants and their agency staff through a secure website.
    - o <u>Access to Hayes Databases</u> **-** Participants also have direct access through the MED Clearinghouse website to Hayes, a nationally recognized vendor specializing in off-the-shelf evidence products.
    - o <u>Weekly Updates</u> – Weekly electronic newsletters that provide relevant, timely information and evidence to participants. MED staff scans a wide breadth of journals and publications and develops concise analyses for busy policy-makers.

The **DERP Project** is a collaboration of state Medicaid and public pharmacy programs. DERP produces concise, comparative, evidence-based products that assist policy makers and other decision-makers facing difficult drug coverage decisions.

DERP is nationally recognized for its clinical objectivity and high-quality research. It focuses on specialty and other high-impact drugs, particularly those that have potential to change clinical practice. DERP reports evaluate efficacy, effectiveness and safety of drugs to ultimately help improve patient safety and quality of care while helping government programs contain exploding costs for new therapies.

DERP offers:

- **High-Quality Evidence** – DERP offers the best available clinical evidence on which to base policy decisions related to pharmaceuticals. DERP reports compare the effectiveness of drugs commonly used for the same conditions, highlight safety issues, and assist public pharmacy programs to enact policies that help increase the quality of patient care. DERP reports include a comprehensive search of the global evidence, an objective appraisal of the quality of the studies found, and a thorough synthesis of high-quality evidence. Although the reports do not include cost data, policymakers are able to use the reports to make informed policy decisions that save money.
- **Independence Governance -** DERP is the only self-governed national forum available to public agencies. It uses a collaborative model and provides objective research on drug effectiveness to bring evidence to drug policy decisions. DERP reports are independent and objective. The research is conducted by investigators who have no financial or other conflicts of interest in the pharmaceuticals they study.
- **Improved Drugs Safety and Efficiency –**
    - o DERP reports are used to develop prior authorization and drug utilization management policies
    - o One state, using DERP reports for its preferred drug list, estimates approximately $37 million in costs avoided over five years, and another state estimates $80 million per year
    - o Reports include up-to-date clinical evidence on adverse events and safety information of the drugs reviewed and have highlighted risks associated with the drugs studied before other sources
    - o DERP reports are used to develop practice guidelines and provider education products to manage drugs with substantial off-label use
- **Drug Reports under Development include:**
    - o High-cost Drugs Pipeline

- o Spinal Muscular Atrophy Research: the Effectiveness of Nusinersen (SMARTEN)
- o Treatments for Hemophilia A
- o Treatments for Transfusion Dependent Beta Thalassemia
- o Keytruda Living Evidence Map

- **Results from the return on using Medicaid Evidence-Base Decisions:**
  - o Alabama- Alabama utilized a MED analysis of DME expenses that led to policy changes related to home IV services resulting in cost avoidance of $1 million annually.
  - o Minnesota- Minnesota has created a process to control the growth of high-tech imaging (HTI) use – stabilizing at 41 procedures per 1,000 enrollees, well below the trend rate previously experienced (47/1,000).
  - o Missouri- Missouri now requires prior authorization of CT and MRI imaging of the chest, lower back, head and neck, resulting in savings of over $9.3 million during a two-year period.
  - o Washington- Washington no longer covers arthroscopic debridement and lavage of the knee for osteoarthritis, resulting in an estimated savings of $400,000 within the first year of the policy.

Many of these reports and activities dovetail with the CQMs on which EPs and EHs must report for demonstrating MU under the NC Medicaid EHR Incentive Program. Expanding availability of evidence-based resources will provide NC more robust sources of best practices and the necessary data and information on which to base sound decisions. NC Medicaid believes the benefits of both MED and DERP are substantial. Therefore, NC Medicaid will discuss the extension their agreement with Oregon Health Science University/the MED Project for another two-year period (2022-2024 FFY) in September 2021.

B.6 Medicaid Technical Infrastructure and Environment

NCTracks leverages and contributes data to the emerging HIE technical infrastructure.

NCTracks was developed under the oversight of a dedicated program office, the Office of MMIS Services (OMMISS), at the direction of the NC DHHS. NCTracks was designed to support the MITA standards. OMMISS has ensured that NCTracks is consistent with the provisions noted in the *North Carolina Statewide HIE Plan*, *Section 6.7*, whereby HIE services supported through the State HIE Cooperative Agreement will comply with all national standards as defined in the *Health Information Technology: Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology: Final Rule.*

The North Carolina Medicaid Incentive Payment System (NC-MIPS) provides the interface through which eligible professionals interact with the NC Medicaid EHR Incentive Program, and the related Attestation Validation Portal (AVP) provides the functionality for staff to administer the program. The NC Medicaid EHR Incentive Program uses NCTracks as the payment mechanism for incentive payments.

B.7 Community Care of North Carolina (CCNC Program)

Through the Community Care of North Carolina program, N3CN has a proven track record of engaging the provider community in meeting cost and quality objectives for the Medicaid program, and of leveraging public-private partnerships at the local and state levels toward aligned interests. N3CN is proud of the accomplishments achieved over the past decade, which broadly include:

- Building primary care medical home infrastructure for the Medicaid population;

- Establishing a culture of quality improvement, comprehensive patient-centered care, and care coordination across care settings; and, reducing healthcare costs while raising the standard of care in North Carolina.

With over 5,000 primary care providers and over 1.8 million patients participating in the CCNC Program statewide, and the active engagement of virtually all NC hospitals, health departments, departments of social services, and local mental health management entities, Medicaid has been a principal catalyst for quality improvement in North Carolina healthcare for years.

Through the CCNC VirtualHealth (VH)- HELIOS Platform and CareImpact Dashboards, the goal of the CCNC data platform is to put *the right information in the right hands at the right time* to promote evidence-based, patient-centered care by a coordinated care team.

In anticipation of Medicaid Reform, N3CN is focusing on maturing the IT infrastructure, adapting ITIL best practices and updating analytic processes to be ready to adapt to the changing Medicaid model.

- N3CN is onboarding providers and other practice staff to the OneLogin system to gain access to the VirtualHealth Provider Portal and CareImpact Practice Dashboard.

N3CN has designed and is implementing next generation offering of complex care management services, enhanced automated business workflows, and providing IT tools to enable that offering. Also, N3CN is capitalizing on current capabilities and enhancing overall efficiency and effectiveness of its complex care management program. N3CN has developed and implemented disaster recovery and fail over plan for high availability of IT services and to minimize disruptions to end users in the event of a disaster. N3CN started deploying IT Service Management (ITSM) processes in 2016 with a goal for improving the delivery of IT services. Change management is implemented and Release management will be implemented this year. Incident management has also been deployed by adding a customer service portal that allows users to open and track incident tickets, ask questions, report difficulties, and access relevant product and service knowledge bases. The portal provides transparency to users concerning their service tickets as they can follow the ticket as it is being worked and enhances service by proactively ensuring that priority items are addressed. In 2018, N3CN moved to a multi-authentication Identity and Access management solution to strengthen authentication and authorization and to maintain a single source of truth for provisioning and managing the access profiles for users. This endeavor is anticipated to yield increased operational efficiencies as well as a more simplified technology architecture that aligns with our go-forward business and regulatory compliance framework.

For more information, visit https://www.communitycarenc.org/.

B.8 Special Needs Population

The EHR Incentive Program has broad appeal to EPs and EHs who serve the Medicaid population; however, NC is working to ensure that the needs of the most vulnerable are considered within the administration of the NC Medicaid EHR Incentive Program.

One example is the priority North Carolina places on the integration of the NCIR. The NCIR is a secure, web-based tool that serves as the official source of NC's immunization information. It provides electronic access to all of NC's Local Health Departments (LHDs). While it contains data for individuals of all ages, the importance and utilization of immunizations is greater for children, who compose approximately 50 percent of Medicaid's enrolled beneficiaries. NCIR integration with the statewide HIE network is a high priority for the NC DHHS. Outreach and technical assistance to professionals whose specialties are focused on caring for children (i.e., pediatric, family practice) is a priority for referrals to the RECs and follow-up programs.

Pediatricians make up a large share of the participants in the NC Medicaid EHR Incentive Program. Flexibility in the Program's patient volume requirement allows for greater participation by pediatricians and has resulted in over $4.9 million dollars in payments made for pediatricians meeting the 20 percent Medicaid patient volume threshold. As of May 2020, 1,453 pediatricians have successfully attested for MU.

B.9 Effect of State Law

The NC HIE Legal/Policy Workgroup was charged with addressing the legal issues and/or barriers to the adoption of HIT. Prior to the enactment of recent legislation described in *Section A.11 State Law and Regulatory Changes to Support HIT Activities in NC*, North Carolina law contained a complex mixture of opt-in and opt-out provisions based on provider type, communicable disease and minor's consent rules. As amended, North Carolina laws that impact healthcare providers' disclosure of patient information are consistent with the HIPAA Privacy and Security Rules. The North Carolina HIE Act, codified in Article 29A of Chapter 90 of the NC General Statutes, is intended to improve the quality of healthcare delivery within North Carolina by facilitating and regulating the use of a voluntary, statewide HIE network for the secure transmission of patient information among healthcare providers and health plans in a manner that is consistent with HIPAA. The Act also ensures individuals have control over the use and disclosure of their information through the HIE Network by providing individuals with a continuous right to affirmatively decide to disallow his or her patient information from being disclosed through the statewide HIE Network through an opt-out process. The Act eliminates inappropriate statutory barriers to the adoption and use of EHRs that previously existed throughout North Carolina law.

The North Carolina Health Information Exchange Authority (NC HIEA) was created in NC Session Law 2015-241 s. 12A.4 and 12A.5 in September 2015 to oversee and administer North Carolina's HIE. On February 29, 2016, the HIE was transferred from the Community Care of North Carolina (CCNC) / North Carolina Community Care Networks (N3CN) structure to the new statewide North Carolina Health Information Exchange Authority (NC HIEA). In its new home under the NC HIEA, the statewide HIE network, now called NC HealthConnex, has stronger support than ever before from state government and key health care stakeholders, including financial assistance through state-appropriated funds. The transfer of NC HealthConnex under state governance and the subsequent mandate for all health care providers that receive Medicaid or other state funds for provision of health care services participate with NC HealthConnex are significant steps toward building and sustaining a high-value statewide HIE network. Other 2015 laws incorporate a place for the statewide HIE network to support Medicaid transformation efforts and other required state data feeds; see *Section A.11 State Law and Regulatory Changes to Support HIT Activities in NC* for more information.

NC Session Law 2015-264, NC Session Law 2017-57 and NC Session Law 2018-41—which amend NC Session Law 2015-241 s12A.5—continue to support NC's mission to expand use of electronic health record systems and promote connectivity through the NC HIEA. The updated dates for mandated connection provide a more realistic timeline for establishing connectivity and submission of data and appropriates funding to support all activities related to upgrading and maintenance of the data exchange technical environment.

C. Administering and Overseeing the EHR Incentive Program

C.1 Program Organization, Management and Oversight

This section gives a high-level overview of the NC Medicaid EHR Incentive Program. Included herein is the general approach to managing the program, the history of its oversight, and the roles and responsibilities of the program staff.

C.1.1 General Policy Goals

The goal of the NC Medicaid EHR Incentive Program has been to encourage eligible professionals (EPs) and eligible hospitals (EHs) to adopt, implement, or upgrade (AIU) to a certified EHR technology, and then meaningfully use (MU) that technology in ways that can positively affect patient care. The idea being that widespread adoption of EHR technology will improve care coordination, improve efficiency and outcomes to reduce costs, and help engage patients in their health. Program staff works toward this goal through assisting providers, administering incentive payments consistently according to program rules and state and federal policy, and engaging stakeholders and organizations statewide to advance the adoption and meaningful use of CEHRT.

C.1.2 Program Organization

C.1.2.1 Early Management and Approach

Early planning activities and initial administration of the NC Medicaid EHR Incentive Program were carried out by various workgroups through OMMISS. To accelerate the launch of the program in NC, a mix of state personnel and contracted resources at OMMISS devised the following plan for its first program year. With the assistance of CSC and Quarterline, OMMISS built and launched the NC-MIPS, consisting of programs and processes to ensure EPs and EHs have met the federal and state statutory and regulatory requirements for the EHR Incentive Program. To begin making incentive payments in early 2011 and avoid making modifications to the legacy MMIS set to be replaced in July 2013, OMMISS developed a strategy to make payments initially through the North Carolina Accounting System (NCAS) with interfaces to the CMS R&A and the EVC. In mid-2011, the first incentive payments were disbursed to NC providers.

C.1.2.2 Structure and Oversight

Administration and oversight of the program were moved from OMMISS to NC Medicaid in 2011, while the technical and operations functions of the portal used by providers to attest for the program, NC-MIPS, remained at OMMISS. State staff were added to NC Medicaid starting in July 2011, with a dedicated Program team taking shape in the last quarter of 2011. State program staff oversees provider outreach and communication, attestation validation, quality assurance, budget, appeals, and audit activities.

Early Program Structure

Until April 2012, OMMISS continued to manage the technical development of NC-MIPS. This effort employed a range of part-time technical staff at CSC in 2011, four help desk and operations staff, and eight full-time developers in 2012. The NC-MIPS development contractors were transferred to NC Medicaid in April 2012 to reduce costs and improve efficiencies. NC Medicaid moved the operations activities in-house 2013, simultaneously reducing the number of staff needed for both development and operations from eight to six and four to one, respectively.

In October 2013, three investigators moved from NC Medicaid's Program Integrity section to the NC Medicaid EHR Incentive Program.

Current Structure

The figure below represents the staff of the NC Medicaid EHR Incentive Program as of May 2021.
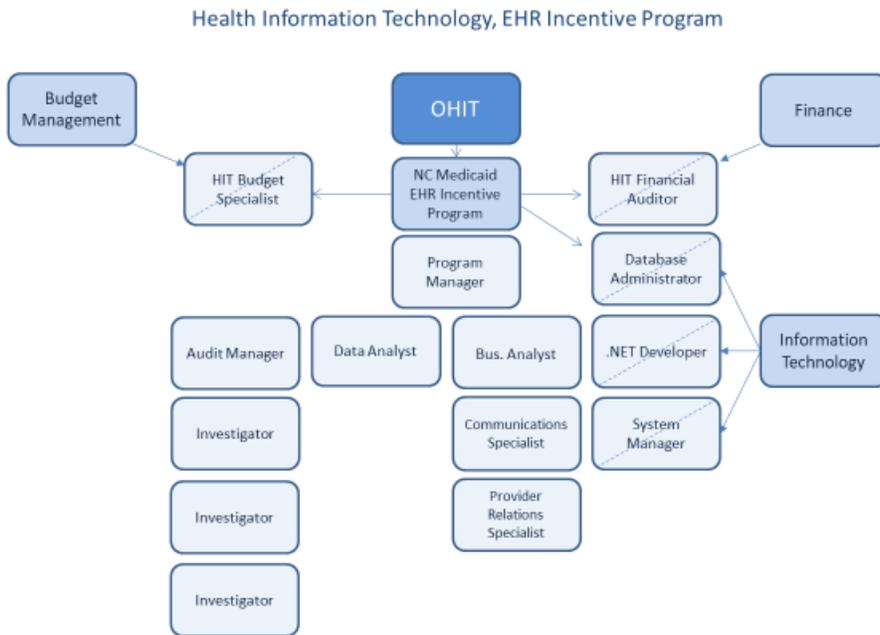
Figure 9 - The Program Team Organizational Chart (2021)

Office of Health Information Technology (OHIT) Director

Responsible for developing a state plan for implementing and ensuring compliance with national HIT standards and for the most efficient, effective, and widespread adoption of HIT; identifying available resources for the implementation, operation, and maintenance of HIT; and monitoring HIT efforts and initiatives in other states and replicating successful efforts and initiatives in North Carolina. Works closely with NC HIEA in coordinating efforts toward legislatively mandated connections.

Roles and Responsibilities of the Program team

All team staff time is dedicated to the NC Medicaid EHR Incentive Program, HIT projects described in the SMHP, and developing other HIT/HIE projects, e.g., emPOWER. Staff who contribute part-time complete timesheets to document accurate distribution of effort and funds. This timesheet data goes through a cost allocation program to charge the appropriate amount of payroll expenses to the correct cost centers. Where projects are eligible for various Federal Financial Participation (FFP) rates (i.e., 90 percent administrative, 100 percent incentive payments), this is specified in the last node of the cost center number such that the invoice reviewer codes the payment with the proper FFP funding.

Program Manager

Responsible for the overall planning, implementation, and management of the NC Medicaid EHR Incentive Program. Core responsibilities include: directing activities of the Program team toward federal EHR Incentive Program goals, ensuring program compliance, and acting as the Program contact for CMS and other states.

Data Analyst

Designs and leads data analytics for the NC Medicaid EHR Incentive Program, including NC-MIPS metrics reporting, MMIS data warehouse research and reporting, and other HIT initiatives such as emPOWER. Tracks and analyzes program performance metrics. As of May 2021, this position is vacant with duties backfilled by Program Manager and Business Analyst.

Communication Specialist

Crafts and executes the Communication Plan for the NC Medicaid EHR Incentive Program, including messaging, provider outreach, program website, articles, bulletins, and communication with key stakeholders and partners. Assists all other roles with external communication such as correspondence templates and training and internal documentation review. As of May 2021, this position is vacant with duties backfilled by Business Analyst.

Systems Manager

Responsible for tracking maintenance and enhancement projects for NC-MIPS and AVP, QA testing, facilitating communication between Program team and Information Technology Division staff, managing server maintenance and upgrade projects, and maintaining documentation related to program's servers, hardware, and software. Since October 2020, the Systems Manager has been dividing time between the Program time and the Information Technology Division.

Senior .NET Developer

Serves as the lead technical resource for the NC Medicaid EHR Incentive Program in support of all maintenance and enhancement development for NC-MIPS and the attestation validation portal (AVP) including software building, release management, and developer testing including source code management. Since May 2020, the .NET developer has been dividing time between the Program time and the Information Technology Division.

Business Analyst

Responsible for creating all documentation used by developers for maintenance and enhancement of NC-MIPS and AVP including responding to CMS changes, updating system design and user documentation, and creating test cases and performing QA testing. Develops, updates, and maintains requirements and documentation for HIT initiatives, including emPOWER.

Budget Specialist

Part-time employee; manages the budget for the NC Medicaid EHR Incentive Program, monitors accuracy of incentive payments, provides regular financial reporting and forecasting to program manager, and conducts all CMS financial reporting related to the Program, including CMS 37 and 64 reports.

Financial Auditor

Part-time employee; serves as the subject matter expert for hospital payment calculations for the NC Medicaid EHR Incentive Program. Calculates payments for hospitals, creates policy around NC-specific hospital eligibility and attestation requirements, and conducts outreach with hospitals as necessary.

Provider Relations Specialist

Heads up the help desk for the NC Medicaid EHR Incentive Program. Responsible for overseeing the pre-payment validation process, including eligibility determination, provider outreach efforts, denials, and eligibility appeals and hearings. Vacant since May 2020. Duties are being backfilled by audit staff.

Audit Manager

Heads up the team of investigators who conduct pre- and post-payment validations and audits. Responsible for risk analysis, audit scheduling, Audit Strategy, representing NC Medicaid at audit-related meetings and hearings, and conducting validations and audits with the investigators. Leads help desk and manages AVP.

Investigators

Conduct pre- and post-payment validations; oversee recoupment of payment in the case of adverse post-payment review findings. Three investigator positions vacant as of May 2021. Assists Audit Manager with help desk and AVP.

C.2 Outreach and Provider Support

North Carolina seeks to maximize provider participation in the incentive program and, through coordination across multiple stakeholders, will support the provider community using multiple approaches.

C.2.1 Stakeholder Collaboration in Plan Development

Section A: North Carolina's "As-Is" HIT Landscape of the SMHP describes the complex HIT landscape in North Carolina. NC OHIT has worked with NC Medicaid, NC AHEC, NC HIEA, the NC Medicaid EHR Incentive Program, and other stakeholder groups to develop the SMHP.

C.2.2 Communication Plan

The NC Medicaid EHR Incentive Program has developed a comprehensive plan that addresses the communication plans and projections for the program. The original document was created at the onset of the Program in 2010 and was most recently revised in May 2020 to reflect the challenges, opportunities, and outreach activities for program years 2019-2021.

Communication goals in 2020-2021 focus on assisting providers who are coming back to attest for MU and ensuring they have the proper knowledge and resources to do so. Those messages include:

- Availability of incentive money through 2021;
- Availability of a total of six payments;
- Requirement of attesting to Stage 3;
- Requirement of 2015 CEHRT;
- Changes for Program Year 2021; and,
- Resources available to assist providers including Program help desk, webinar series, FAQs, AHEC, etc.

The continued communicative efforts will focus on disseminating these messages, and provider education through different channels including the NC Medicaid EHR Incentive Program website, a monthly Medicaid Provider Bulletin, articles in partner organization newsletters, webinars, targeted emails, and presentations to external stakeholders.

The NC Medicaid EHR Incentive Program ramped up its outreach efforts for program years 2016, 2017, 2018, 2019, and 2020 and will continue to do outreach for program year 2021. Planned activities for Program Year 2021 include:

- Articles posted monthly in the Medicaid Provider Bulletin;
- Updated program website;
- Targeted outreach to providers who had previously approved patient volume; and
- Outreach to providers who had not received all six payments.

C.2.2.1 Provider Outreach via Partners

The NC Medicaid EHR Incentive Program works closely with several internal and external stakeholder and partner groups to disseminate program updates and messages as they become available.

Outreach during Program Year 2020:

- 5/7/2020 – Articles published in the Medicaid bulletin
- 6/2/2020 – Articles published in the Medicaid bulletin
- 6/3/2020 – Articles highlighted in NCTracks email
- 7/8/2020 – Articles published in the Medicaid bulletin
- 7/8/2020 – Articles highlighted in NCTracks email
- 7/28/2020 – shared an article with NC AHEC for distribution to their nine regional AHEC's newsletters/listservs and for NC AHEC's partner organizations.
    - AHEC project manager shared with all AHEC team leads and coaches with a request to post in newsletters/listservs
    - AHEC director shared with their partner organizations:
        - CCNC- Jennifer Cockerham
        - NC Medical Society- Kristen Spaduzzi
        - NC Academy of Family Practice- Greg Griggs
        - NC Pediatric Society- Elizabeth Hudgins
        - NC Association of PAs- Emily Adams
        - NCMGMA- Melissa Klingberg
        - Old North State Medical Society- Dr Charlene Green
        - NC Community Health Care Association- Chris Shank
        - NC Office of Rural Health- Maggie Sauer
- 8/4/2020 – Articles published in the Medicaid bulletin
- 9/8/2020 – Articles published in the Medicaid bulletin
- 9/8/2020 - Articles highlighted in NCTracks email
- 9/16/2020 - Same PV outreach emails sent with dates from 2019
- 9/17/2020 – Outreach sent to EPs that last attested in Program Year 2019
- 9/21/2020 - Outreach sent to EPs that last attested in Program Year 2018
- 9/23/2020 - Outreach sent to EPs that last attested in Program Year 2017
- 10/1/2020 – Outreach to AHEC re: last day to start 90-day MU reporting period is 10/3
- 10/6/2020 – Articles published in the Medicaid bulletin
- 10/6/2020 – Articles highlighted in NCTracks email
- 11/3/2020 – Articles published in the Medicaid bulletin
- 11/3/2020 – Articles highlighted in NCTracks email
- 12/1/2020 – Articles published in the Medicaid bulletin
- 12/1/2020 – Articles highlighted in NCTracks email
- 1/5/2021 – Articles published in the Medicaid bulletin
- 1/5/2021 – Articles highlighted in NCTracks email
- 2/3/2021 - Articles published in the Medicaid bulletin
- 2/3 /2021- Articles highlighted in NCTracks email

- 2/3/2021 – Articles sent to AHEC project manager, AHEC project manager forwarded to regional coaches
- 2/16/2021 – Targeted outreach sent to UNC, ECU, Daymark and Cone Health encouraging participation in Program Year 2020
- 3/2/2021 – Articles published in the Medicaid bulletin
- 4/6/2021 - Articles published in the Medicaid bulletin
- 4/8/2021 - Articles highlighted in NCTracks email

C.2.2.2 NC Medicaid EHR Incentive Program Website

The Medicaid EHR Incentive Program website is part of the larger NC Medicaid website and is located at: https://medicaid.ncdhhs.gov/medicaid-ehr-incentive. The Program has promoted the website as a one-stop shop for all MU and EHR Incentive Program information. The existing website was reformatted to include expandable tabbed sections. The website gives providers the most important program information and updates. New sections are added as needed, but the tabs as of May 2021 are as follows:

- Latest News – The most pertinent, time-sensitive information is displayed at the top of the website, so it is the first thing providers see when they visit the web, so it is more impactful for the user.
- Introduction – History of the EHR Incentive Programs, the basic payment information for EPs and EHs, and the program timeline are posted in this section.
- Timelines – Important dates, including the attestation tail period
- Are you Eligible – Explains the eligibility requirements for EPs and EHs.
- Patient Volume – This section highlights important information and examples to better understand what is needed to calculate patient volume.
- Path to Payment – Gives providers an overview of the entire lifecycle of attesting for and receiving an incentive payment.
- Provider Registration and Attestation – Tells providers where they need to register and attest for the NC Medicaid EHR Incentive Program.
- Meaningful Use – Defines MU, the criteria to meet MU, requirements to meet MU.
- Clinical Quality Measures – Defines CQMs, guidance on CQMs in 2020, CQM links.
- Resources and Webinars – Links to commonly used websites, podcast series, attestation guides
- Frequently Asked Questions – Provides a link to the NC Medicaid EHR Incentive Program's FAQ website and a link to CMS' FAQ section.
- Contact Us – Provides contact information for the NC-MIPS Help Desk.
- Technical Assistance – Provides overview of the assistance available from our contracted technical assistance partners, NC AHEC, and contact information for each regional AHEC.
- NC HealthConnex – Provides information and links on NC's state-designated HIE and the Diabetes Specialized Registry, which is available to all NC HealthConnex participants and supports MU as well as QPP ACI.

This website is managed in-house by the Program's business analyst and is updated on a regular basis with new content and program updates. The website will be maintained through May 31, 2022 with plans to revise for audit guidance only from June 2022 through September 2023.

C.2.2.3 Medicaid Bulletins

Medicaid Bulletins are the primary vehicle for disseminating messages to the larger Medicaid provider community. These monthly e-periodicals are sent to communicate important policy information to all Medicaid-enrolled

providers. More than 11,000 practices, professionals, and healthcare entities currently subscribe and access the Medicaid Bulletin via listserv notifications and the NC Medicaid website.

The NC Medicaid EHR Incentive Program's business analyst submits a monthly article to the Medicaid Bulletin. Medicaid Bulletins are archived here: https://medicaid.ncdhhs.gov/providers/medicaid-bulletins.

C.2.2.4 Medicaid EHR Incentive Program Attestation Guides

The NC Medicaid EHR Incentive Program has developed attestation guides to help EPs effectively navigate the attestation process. These guides are available as PDFs online in the following locations:

- The NC Medicaid EHR Incentive Program website, https://medicaid.ncdhhs.gov/medicaid-ehr-incentive#resources-and-webinars
- The NC Medicaid EHR Incentive Payment System (NC-MIPS) website, https://ncmips.nctracks.nc.gov/Home.aspx

C.2.2.5 Current State and Gap Analysis

The pool of participants, including those who participated in NC by the close of Program Year 2016 and those who participated in NC after participating in another state by 2016 is 6,181 professionals. Of those, 1,048 have received six payments and completed their participation in the program. There are 2,526 professionals who have attested only once. One of our outreach projects completed in 2019 targeted this gap to encourage these EPs to meaningfully use their EHR systems and continue participating in the Incentive Program. We conducted outreach in Program Year 2020 to encourage EPs to return for MU and will do so again for Program Year 2021.

C.2.3 NC Medicaid EHR Incentive Program Help Desk

The NC Medicaid EHR Incentive Program Help Desk assists providers with questions and concerns around registration, attestation, and the validation process. The Help Desk began in 2011 as an augmentation of the Medicaid Enrollment, Verification, and Credentialing System Center. The Program's Operations Team hosted the Help Desk, and it was comprised of CSC staff, including some veteran EVC Help Desk staff. In June 1, 2013, the Help Desk moved in-house to NC Medicaid, thereby decreasing the number and cost of support staff. As of May 2021, the Help Desk is covered by audit staff, as a full-time help desk staffer is no longer required. The Help Desk conducts outreach projects, answers general program questions, offers assistance on all aspects of the attestation process, and works with providers to resolve issues. The Help Desk will be staffed and continue to assist providers until all final determinations on Program Year 2021 attestations have been made, including issuance of payments.

C.3 NC Medicaid EHR Incentive Program Business Requirements

This section details NC Medicaid's business requirements relative to the NC Medicaid EHR Incentive Program.

C.3.1 Participation Periods

Enrollment requirements are defined by program year. Through Program Year 2020, North Carolina had a 120-day "tail period" to allow for attestation for a given program year beyond the end of that calendar year. The tail period was defined as a period of time beyond the end of the calendar year during which providers may attest for the prior program year. For example, providers had until April 30, 2021 to attest for Program Year 2020. Until that point, providers could submit an attestation, and the Program team used that submitted information to attempt to verify whether a provider meets the requirements to receive an incentive payment. There will be no tail period for Program Year 2021 because all payments must be issued by December 2021. NC-MIPS will close, as required by CMS, on October 31, 2021. Review of Program Year 2021 attestations and feedback by Program staff prior to

October 31, 2021 is not guaranteed for attestations submitted after August 31, 2021, so early submission is encouraged.

Enrollment starts with a registration communicated to the state from the CMS R&A, the defined interface for CMS.

NC Medicaid determined all NC hospitals are dually eligible for the Medicare and Medicaid EHR Incentive Programs. So, as part of pre-payment validation (see **Tables 9 & 10** below), NC Medicaid checked the C5 and/or CMS' Research & Support (R&S) user interface to ensure the hospital was attesting on a schedule consistent with their participation in the Medicare EHR Incentive Program. Because non-consecutive participation is not allowed for EHs after 2016 and no EHs participated in 2018, no NC EHs will participate in years 2019-2021. Information on EH eligibility is included for historical reference only.

Eligibility Criteria	CMS R&A Information	State Review and/or Verification Process
EP: Program participation period	Registration	*Verification:* • EP has not already received six years of incentive payments. • Do not allow entry into the program after 2016. • Do not allow any payments after Program Year 2021. • Verify from CMS data appropriate program year for EPs switching from another state.
EH: Program participation period	Registration	*Verification:* • EH has not already received three years of incentive payments. • Do not allow entry into the program after 2016. • Do not allow any payments after Program Year 2021. • Do not allow nonconsecutive participation after year 2016. • Ensure appropriate program year for EHs switching states.

Table 9 - Participation Timeframe Verification

*Note: The *State Review and/or Verification Process* only include those actions taken during pre-payment validation. Post-payment review is outlined in the NC Medicaid EHR Incentive Program Audit Strategy (current version approved 6/11/2020).

C.3.2 Provider Type

NC-MIPS verifies the provider type sent via the CMS R&A user interface against state data for each provider to ensure the professional or hospital is one of the following provider types:

• Doctor of Medicine or Osteopathy;

- Doctor of Dental Surgery or Dental Medicine;
- Nurse Practitioner;
- Certified Nurse Midwife;
- Physician Assistant;
- Acute Care Hospital; and,
- Critical Access Hospital.

To qualify at the 20 percent Medicaid patient volume level for a reduced incentive payment, North Carolina recognizes a pediatrician as an EP if they are a Doctor of Medicine or Osteopathy and are enrolled with NC Medicaid as a pediatrician, or if they are board certified by a national certification board in a Pediatric, Adolescent, or Child medical specialty area.

The following list includes provider types that are not considered as eligible by the NC Medicaid EHR Incentive Program:

- Doctor of Podiatric Medicine;
- Doctor of Optometry; and,
- Chiropractor.

Eligibility Criteria	Provider-Reported Eligibility Information	State Review and/or Verification Process
EP: EP type	• Medicaid EP provider type selection from R&A	*Verification:* Using NC Medicaid provider enrollment data and state provider licensure data, crosswalk against provider type and specialty data to validate that provider matches with valid EP type. If a pediatrician attesting at the 20 percent Medicaid patient volume level, check the provider is enrolled as a pediatric specialist with NC Medicaid or has a board certification in a Pediatrics, Adolescent, or child medical specialty area. If a physician assistant, must submit memo on letterhead.
EH: EH type	• Medicaid EH provider type selection from R&A • CCN	*Verification:* Using NC Medicaid provider enrollment data and state provider licensure data, crosswalk against provider type and CCN to validate that provider is enrolled and matches with valid EH type. Using cost report data, validate that ALOS for acute care hospitals is 25 days or less. *Review:* Confirm CCN is in appropriate range.

C.3.3 Basic Eligibility Requirements

The state performs several pre-payment verification checks to ensure an EP meets the basic program requirements prior to payment. To demonstrate this effort, the table below describes the basic program eligibility requirements with a description of the pre-payment verification performed by the state.

Eligibility Criteria	Provider-Reported Eligibility Information	State Review and/or Verification Process
EP & EH: Must be a Medicaid provider.	EP/EH provides NPI.	• Ensure provider information matches between the information submitted in CMS R&A and NC MIPS. • Confirm EP provided services to at least one Medicaid patient in the program year by reviewing Medicaid paid claims
EP & EH: Cannot be excluded, sanctioned, or otherwise deemed ineligible to receive payments from the state (i.e., already received incentive payment).	N/A	•Search for Public Actions as listed on appropriate licensing agency websites. •Check OIG to confirm no exclusions tied to attesting EP/EH 's NPI •Search NCTracks (NC's MMIS) for sanctions and exclusions with Medicaid on the provider's license •Verify no action is pending that would prevent approval by checking the monthly Medicaid Investigation Division report
EP: PA in PA-led FQHC or RHC	EP submits required documentation.	EP submits memo on letterhead attesting that the leading PA is one of the following: • The primary provider in the clinic/center; • The clinical or medical director at the clinic/center; or, • The owner of the clinic/center.

Table 11 - Basic Eligibility Requirements

Hospital-based Determination

To determine whether an EP is hospital-based, a percentage is calculated by dividing the number of Medicaid claims rendered in a hospital setting by the total number of Medicaid claims, regardless of setting. This is done by determining the number of Medicaid claims where the place-of-service (POS) is either code 21 (Inpatient Hospital) or 23 (Emergency Room Hospital) during the 90-day patient volume reporting period. This number is then divided by the total number of Medicaid claims, regardless of POS code, in the same 90-day period. An EP is considered to be hospital-based if 90 percent or more of her or his encounters are in a hospital setting (POS codes 21 or 23). For EPs who attest using group methodology, the same calculation will occur except the time period will be

adjusted to the entire program year to account for circumstances where the EP may not have had encounters during the same 90-day patient volume reporting period.

C.3.4 Group Affiliation

North Carolina defines a group as one or more EPs practicing together at one practice location or at multiple practice locations within a logical geographical region under the same healthcare organization. Group affiliation is validated pre-payment by the NC Medicaid EHR Incentive Program Operations Team by checking NCTracks for current group affiliation.

The group affiliation validation process differs slightly Physician Assistants (PAs) working in a PA-led FQHC or RHC.

PAs are also asked to provide a memo on the FQHC or RHC's letterhead addressing at least one of the following requirements:

1. The PA is the primary provider in the FQHC or RHC (for example, when there is a part-time physician and full-time PA, we would consider the PA as the primary provider);
2. The PA is a clinical or medical director at a clinical site of practice that is an FQHC or RHC; or,
3. The PA is an owner of an FQHC or RHC.

C.3.5 Patient Volume

This section describes the NC Medicaid EHR Incentive Program's patient volume requirements and pre-payment validation process. Post-payment review is outlined in the NC Medicaid EHR Audit Strategy.

C.3.5.1 Patient Volume for Eligible Professionals (EPs)

Providers must supply patient volume data for calculations consistent with the Final Rule. The data will be subject to a series of verifications. Patient volume will be calculated using the encounter-based formula option specified under the Stage 2 Final Rule:

Total Medicaid encounters in any representative, continuous 90-day period in the calendar year preceding the program year or 12-month period preceding date of attestation / total patient encounters in the same 90-day period.

To be eligible for the incentive, EPs must demonstrate 30 percent Medicaid patient volume, unless the EP is a pediatrician, in which case the threshold is 20 percent (for a reduced payment).

North Carolina Medicaid recognizes an EP as being a pediatrician if s/he is a Doctor of Medicine (MD) or a Doctor of Osteopathic Medicine (DO) and meets one of the following requirements below:

- Enrolled with NC Medicaid as a pediatrics specialty; or,
- Board certified by a national certification board in a Pediatrics, Adolescent or Child medical specialty area.

For program years 2011 and 2012, a Medicaid patient encounter was defined as a service rendered on any one day to an individual where Medicaid or a Medicaid demonstration project under Section 1115 of the Social Security Act paid for part or all of the service as stated in the Stage 1 Final Rule. Beginning Program Year 2013, a Medicaid patient encounter is defined as a billable service rendered on any one day to a Medicaid-enrolled individual, regardless of payment liability. This includes zero-pay claims.

EPs must count actual encounters, defined as a unique patient on a unique day, from their own auditable data source. An auditable data source for patient volume is defined as an electronic or manual system that an external entity can use to replicate the data from the original data source to support their attested information.

Medicaid patient volume should be calculated in the following way:

- <u>Numerator</u>: All unique encounters where services are rendered to a Medicaid-enrolled individual during any continuous 90-day period from the calendar year prior to the program year or from the 12 months preceding date of attestation.
- <u>Denominator</u>: In the same 90-day period, all unique encounters (a patient seen by an EP for any service), regardless of the payment method.

Medicaid patient volume from eligible billable services that were not billed or were not reimbursed (zero-pay) must be reported separately from Medicaid-paid encounters during attestation. The zero-pay portion of the numerator will not be verified during pre-payment validation but is subject to verification by post-payment audit.

Examples of billable services include:

1. Encounters denied for payment by Medicaid or that would be denied if billed due to exceeding the allowable limitation for the service/procedure;
2. Encounters denied for payment by Medicaid or that would be denied if billed because of lack of following correct procedures as set forth in the state's Medicaid clinical coverage policy such as not obtaining prior approval prior to performing the procedure;
3. Encounters denied for payment due to not billing in a timely manner;
4. Encounters paid by another payer which exceed the potential Medicaid payment; and,
5. Encounters that are not covered by Medicaid such as some behavioral health services, HIV/AIDS treatment, or other services not billed to Medicaid for privacy reasons, oral health services, immunizations, but where the provider has a mechanism to verify Medicaid eligibility.

Further, the Final Rule defines billable as follows:

1. Concurrent care or transfer of care visits;
2. Consultant visits; or,
3. Prolonged physician service without direct, face-to-face patient contact (for example, tele-health).

In NC, we refer to Title XIX expansion CHIP as MCHIP (Medicaid CHIP). Beginning October 2012, per the Stage 2 Final Rule, NC permits these encounters to be counted in the numerator of the patient volume calculation.

For additional up-to-date information on patient volume for EPs, please refer to the NC Medicaid EHR Incentive Program website at https://medicaid.ncdhhs.gov/medicaid-ehr-incentive#patient-volume.

C.3.5.2 Patient Volume for Eligible Hospitals (EHs)

To be eligible to participate in the program, EHs are required to have a minimum of 10 percent of total patient encounters attributed to Medicaid patients. This percentage is calculated by dividing the sum of Medicaid acute care inpatient discharges (ACIDs) and Medicaid emergency department (ED) visits by the sum of all ACIDs and all ED visits in a continuous 90-day period during the preceding federal fiscal year (program years 2011 and beyond) OR during the 12-month period preceding the date of attestation (program year 2013 and beyond). In accordance with the Stage 1 Final Rule, only Medicaid-paid discharges were eligible for inclusion in the numerator. With the Stage 2 Final Rule published September 2012, EHs may include Medicaid-enrolled zero-pay patient discharges in their numerator beginning Program Year 2013. Because non-consecutive participation is not allowed for EHs after 2016 and no EHs participated in 2018, no NC EHs could participate in years 2019-2021.

C.3.5.3 Patient Volume Verification

During attestation, the provider will supply data indicating fulfillment of each of the eligibility criteria in **Tables 13, 14 and 15** below. Program staff review the provider-reported eligibility factors to assure that providers are in

compliance with the eligibility requirements and, when possible, verify the provider-reported information against available state data. Selected elements will also be subject to post-payment audit.

In pre-payment validation, claims data is used to verify the portion of the reported patient volume numerator where Medicaid paid for part or all of the service. To verify this figure, the Program's data analyst uses paid Medicaid claims as a proxy for encounters, and queries Medicaid's claims database for claims for the specified reporting period for the NPIs reported through NC-MIPs during attestation. Paid Medicaid claims are summed with the zero-pay reported encounters for the 90-day period for the NPIs listed by the provider in the attestation to attain the numerator. This numerator is then divided by the provider-reported denominator to confirm the appropriate threshold is met.

For EPs, only one claim per patient per day per provider is included in the total for the numerator. Global billing codes for certain OB/GYN, dental, and surgery procedure claims are counted more than once toward the total for the numerator to represent the typical number of encounters covered by the one claim. Multi-day claims, where the "to date-of-service" is after the "from date–of-service," are also accounted for based on the billing code. A list of multipliers with their description can be found in **Table 12** below.

Procedure code	Number of encounters
OBSTETRICAL CARE (59400)	18
VAGINAL DELIVERY ONLY (WITH OR WITHOUT EPISIOTOMY AND/OR FORCEPS); INCLUDING (59410)	6
ANTEPARTUM CARE ONLY; 4-6 VISITS (59425)	5
ANTEPARTUM CARE ONLY; 7 OR MORE VISITS (59426)	9
POSTPARTUM CARE ONLY, SEPARATE PROCEDURE (59430)	3
TOTAL OB CARE W/ CESAREAN DELIVERY (59510)	20
CESAREAN DELIVERY ONLY; INCLUDING POSTPARTUM CARE (59515)	6
COMPLETE UPPER (D5110)	6
COMPLETE LOWER (D5120)	6
IMMEDIATE UPPER (D5130)	5
IMMEDIATE LOWER (D5140)	5
UPPER PARTIAL ACRYLIC BASE (D5211)	5
LOWER PARTIAL ACRYLIC BASE (D5212)	5
RELINE UPPER DENTURE COMPLETE (LAB) (D5750)	2
RELINE LOWER DENTURE COMPLETE (LAB) (D5751)	2
RELINE UPPER PARTIAL DENTURE (LAB) (D5760)	2
PEDIATRIC PARTIAL DENTURE, FIXED (D6985)	2
SPACE MAINTAINER, FIXED BILATERAL (D1515)	2
MOLAR (EXCLUDING FINAL RESTORATION) (D3330)	2

Procedure code	Number of encounters
FIXED BAND TYPE (D1510)	2

Table 12 - Multipliers with Descriptions

If the procedure code is: ANESTHESIA FOR CESAREAN DELIVERY FOLLOWING NEURAXIAL LABOR ANALGESIA/ANESTHESIA (01968); ANESTHESIA FOR VAGINAL DELIVERY ONLY (01960); ANESTHESIA FOR PROCEDURES INVOLVING ARTERIES OF UPPER LEG, INCLUDING BYPASS (01270); ANESTHESIA FOR; ANORECTAL PROCEDURE (00902); ANESTHESIA FOR INTRAPERITONEAL PROCEDURES IN UPPER ABDOMEN INCLUDING (00790); ANESTHESIA FOR HERNIA REPAIRS IN UPPER ABDOMEN; LUMBAR AND VENTRAL (INCISIONAL) (00752); ANESTHESIA FOR PROCEDURES ON EYE; LENS SURGERY (00142); and, there is more than one day between the "from date of service" and the "to date of service," then the number of encounters is two.

If the procedure code is DEVELOPMENTAL SCREENING (96110) and there is no more than one day between the "from date of service" and "to date of service," then the number of encounters will be the number of days between the "from date of service" and "to date of service" inclusive.

If the procedure code is ELECTROCARDIOGRAPHIC MONITORING FOR 24 HOURS BY CONTINUOUS ORIGINAL ECG (93227) or ELECTROCARDIOGRAPHIC MONITORING FOR 24 HOURS BY CONTINUOUS ORIGINAL ECG (93224) and the "to date of service" does not equal the "from date of service," then the number of encounters will equal half the number of days in the timespan from the "from date of service" to the "to date of service" inclusive.

If the procedure code is END-STAGE RENAL DISEASE (ESRD) RELATED SERVICES MONTHLY, FOR PATIENTS 20 YEARS (90961) or END-STAGE RENAL DISEASE (ESRD) RELATED SERVICES MONTHLY, FOR PATIENTS 12-19 (90958) and the "from/to date of service" time span is at least 30 days, then the number of encounters is three.

If the procedure code is END-STAGE RENAL DISEASE (ESRD) RELATED SERVICES MONTHLY, FOR PATIENTS 20 YEARS (90960) and the "from/to date of service" time span is at least 30 days, then the number of encounters is four.

For EHs, NC Medicaid verifies Medicaid acute care inpatient discharges and Medicaid emergency department visits using paid Medicaid claims. For emergency department visits, we include claim type hospital outpatient (M) where the procedure revenue code is EMERGENCY ROOM-GEN CLASS (RC450), EMTALA EMERGENCY MEDICAL SCREENING SERVICES EMERGENCY ROOM (RC451), BEYOND EMTALA SCREENING EMERGENCY ROOM (RC452), URGENT CARE (RC456), or EMERGENCY ROOM-OTHER EMERGENCY ROOM (RC459) and the bill type is Hospital Outpatient Admit through Discharge Claim Admit through Discharge Claim (131) or Hospital Outpatient Interim First Claim (137).

For acute care inpatient, we include claim type Inpatient Crossover (X) and Hospital (Inpatient)(S) where the bill type is Hospital Inpatient Admit through Discharge Claim (117) or Hospital Inpatient Replacement of Prior Claim (117).

MCHIP encounters were previously excluded from the patient volume claims query in compliance with the Stage 1 Final Rule. In accordance with the Stage 2 Final Rule released September 2012, MCHIP encounters are included in the query since October 1, 2012.

Eligibility Criteria	Provider-Reported Eligibility Information	State Review and/or Verification Process
EP: FQHC/RHC "practices predominantly"	• FQHC/RHC patient encounters over six-month period within the calendar year prior to the program year or 12-month period preceding date of attestation • Total patient encounters over same six-month period	*Automated review in NC-MIPS:* Assure the reporting period is valid and that percentage of reported numbers for encounters at an FQHC/RHC is greater than 50 percent
EP & EH: Medicaid volume reporting period	• 90-day reporting period for volume determination	*Automated review in NC-MIPS:* Assure that reporting period is exactly 90 days and falls entirely within preceding fiscal year for EHs/for EPs, calendar year prior to the program year or 12-month period preceding date of attestation.
EP: Patient Volume	• Encounters paid by Medicaid over 90-day reporting period • Zero-pay Medicaid-enrolled encounters over 90-day reporting period	*Verification:* Use state claims data for specified 90-day patient volume reporting period to verify provider-reported <u>paid</u> Medicaid encounters. Time allowing, outreach is done if this number plus reported <u>zero-pay</u> Medicaid encounters divided by reported denominator is under the required PV threshold. Note: Zero-pay Medicaid-enrolled encounters and total patient encounters (denominator) are verified only in post-payment audit.
EP: FQHC/RHC "needy individual" volume	• Encounters paid by Medicaid over 90-day reporting period • Needy individual encounters over 90-day reporting period, including Medicare and HealthChoice encounters and uncompensated/reduced fee care encounters	*Review*: Using provider-reported information, calculate ratio of encounters to determine if the required threshold for Medicaid/needy individual patient volume is met. *Verification:* Using state claims data for specified 90-day volume

Eligibility Criteria	Provider-Reported Eligibility Information	State Review and/or Verification Process
	• Total patient encounters over 90-day reporting period	reporting period verify provider reported <u>paid</u> Medicaid claims. Time allowing, outreach is done if this number plus non-Medicaid needy encounters divided by the reported denominator is under the required patient volume threshold. Note: Non-Medicaid needy encounters and total patient encounters (denominator) are verified only in post-payment audit.
EH: 10 percent Medicaid volume threshold	• Medicaid ACIDs over 90-day reporting period • Medicaid ED visits over 90-day PV reporting period • Total ACIDs and ED visits over 90-day reporting period	*Review*: Using provider-reported information, calculate ratio of Medicaid inpatient discharges and ED visits to determine if Medicaid volume meets 10 percent. *Verification*: Verify that provider-reported data is consistent with claims data for the 90-day patient volume reporting period.

Table 13 - Patient Volume Pre-Payment Validation

If there is a problem verifying any patient volume data, Program staff may request additional information from providers to assist in the validation process.

C.3.6 Certified EHR Technology

To ensure providers are using CEHRT, NC verifies the reported EHR certification ID using ONC's [Certified Health Product List](). Providers are not required by CMS to enter their EHR certification IDs during registration in the CMS R&A, but they are required by North Carolina to update this information in the CMS R&A prior to attesting for an incentive payment with North Carolina. Therefore, providers need to update the CMS R&A with their EHR certification ID if they:

1. Did not provide an EHR certification ID during initial program registration with CMS;
2. Are new to the program; or,
3. Have switched to a different CEHRT (for example, at a new practice site) since their last attestation.

The EHR certification ID will be transmitted to the state and will pre-populate in the NC-MIPS Portal. The changes made with CMS take at least one but typically not more than two business days to populate in NC-MIPS.

Eligibility Criteria	Provider Reported Eligibility Information	State Review and/or Verification Process
EP & EH: EHR Certification Number	EHR Certification number auto-populates from the CMS R&A into NC-MIPS	*Verification:* Provider relations specialist validates certified EHR number against ONC list.

Table 14 - EHR Certification Verification

C.3.7 Adopt, Implement, or Upgrade

From 2011 through 2016, in the first payment year, providers could receive payments for AIU of CEHRT. The exception to this would be EHs that have already successfully attested with Medicare, where the EH must attest with NC Medicaid on the same attestation schedule (starting with either 90 or 365 days of MU, depending on the Medicare attestation history). Providers were not required to submit documentation of AIU with the signed attestation. Program Year 2016 was the last year that EPs could attest for AIU.

C.3.8 Meaningful Use

North Carolina accepted MU attestations for the first time in Program Year 2011 (for EHs) and Program Year 2012 (for EPs). EHs who attest to MU submitted and attested to the same MU measures and clinical quality measures put forth by Medicare. NC has no additional requirements and is not proposing any changes to the MU definition.

All NC Medicaid EHs were dually eligible for the Medicare and Medicaid EHR Incentive Programs. Once an EH submitted an MU attestation on CMS' QNet and updated the R&A portal as necessary, that EH then attested with NC through NC-MIPS by keying their Medicaid patient volume. Additional years of cost report data were not necessary unless the hospital initially qualified under the rules laid out in *Section C.5.3.2: Alternate Payment Calculation for Eligible Hospitals* or recently experienced a change of ownership, merger, divestiture, etc. In the case of the latter, an EH must have reported the prior year's cost report data each year for payment adjustment until four years of cost report data under a single CCN were recorded (see *Section C.5.3: Payment Calculation for Eligible Hospitals*).

In addition to meeting Medicaid provider eligibility and Medicaid patient volume requirements, EPs who are demonstrating MU must attest to the requirements listed below to receive an MU payment. MU measure data will be keyed into NC-MIPS by the EP.

Eligibility Criteria (EPs only)	Provider Reported Eligibility Information	State Review and/or Verification Process
90 or full calendar year MU reporting period within calendar year that is the same as the program year	Input of accurate reporting period that is the same as the program year.	*Automated review in NC-MIPS:* Ensure attested period is valid.

Eligibility Criteria (EPs only)	Provider Reported Eligibility Information	State Review and/or Verification Process
At least 50 percent of patient encounters occur at a location with CEHRT	Input of at least one such location and attestation to the measure.	*Review:* Ensure at least one location is entered and EP has attested that at least 50 percent of their patient encounters occur at a location with CEHRT. Automated review produces warnings when threshold is not met.
Demonstration of meeting objectives and measures	Input of Yes/No, numerators/denominators, and/or exclusion, as they apply to each measure.	*Automated review in NC-MIPS:* System confirms EP-reported information meets requirements and flags ineligible entries. Attestations that do not meet MU objectives are automatically denied during program staff review.
Demonstration of meeting six of 47 CQMs for Program Year 2021	Input of Yes/No, numerators/denominators, and/or exclusion, as they apply to each measure.	*Review:* Review completion and system-generated acceptance of all measures and any exclusions.
Attestation to MU of CEHRT	Attestation signed.	*Review:* Ensure attestation is signed, indicating attestation to MU of CEHRT. Electronic signatures and stamps are not accepted.

Table 15 - Stage 3 MU Verification

C.3.9 Regulation Changes Affecting MU Eligibility Requirements for Program Year 2017 and Beyond

As a result of the latest CMS updates, changes were made for Program in 2017 and beyond to remain in compliance. See table below**.**

Updates Impacting 2017 and Beyond			
Program	**System**	**Policy**	**Audit**
2015-2017 Modifications Rule			
Providers have the option to attest to Stage 3 in 2017. States should describe changes (program, system, policy, audit) being made to be prepared to address the option in 2017. https://www.federalregis ter.gov/d/2015 -25595/p- 2152			

NC posted a notice to our program website announcing that Program Year 2017 Stage 3 attestations were being accepted as of 5/1/17.	NC-MIPS began accepting Program Year 2017 Modified Stage 2 MU Stage 3 for NC-MIPS on 5/1/17	NC's Attestation Validation Portal (AVP) was updated to manage validation of Program Year 2017 Stage 3 attestations by Program staff. AVP will display the Program Year and the Stage	NC is currently conducting audits on attestations from program years 2015 and 2016 and plans to begin Program Year 2017 audits in 2019. We will update our audit strategy in 2018 to include auditing Program Year 2017 Stage 3 attestations.
2017 includes updates to the MU objectives and states need to discuss how they will administer attestations that include EHR period that are within 2017. https://www.federalregister.gov/d/2015-25595/p-2843			
Reporting affected by this requirement was explained within the attestation guide, which was available from NC-MIPS and our program website as of 5/1/17.	To administer attestations that include EHR periods that are within 2017, NC will ask providers to enter their selected EHR reporting period once prior to entering their MU data. This EHR reporting period is the timeframe that all of the provider's measures were met during, except where otherwise noted by the provider within NC-MIPS. For example, see screenshot A2 (a capture from NC-MIPS), where EPs can enter a different EHR reporting period within the calendar year than entered prior to beginning reporting on objectives.	This information will not be appropriate for checks in NC's Attestation Validation Portal (AVP), but validations are applied within NC-MIPS and data reported by program participants related to this requirement will be available for review through NC-MIPS database.	NC is currently conducting audits on attestations from program years 2015 and 2016 and plans to begin Program Year 2017 audits in 2019. We will update our audit strategy in 2018 to include auditing Program Year 2017 attestations.
OPPS Rule			
Measure calculations were modified to require that actions included in the numerator must occur within the EHR reporting period. States should outline the changes (program, system, policy, audit) they are making to address this requirement. https://www.federalregister.gov/d/2016-26515/p-3723			
Notice of 90-day reporting period for all providers was posted to our program website and to the NC-MIPS landing page.	In NC-MIPS, all providers can attest to a 90-day EHR reporting period for Program Year 2017	NC's Attestation Validation Portal (AVP) displays the Program Year and the EHR reporting period.	NC is currently conducting audits on attestations from Program Year 2017. Our audit strategy was updated in 2018 to include this change for auditing Program Year 2017 attestations.
NC posted a notice to our program website regarding the requirement that actions included in the numerator must occur within the EHR reporting period	Development of Program Year 2017 Modified Stage 2 MU and Stage 3 for NC-MIPS was completed 4/30/17 and accounts for the requirement that actions included in the numerator must occur within the EHR reporting period	Program staff have reviewed the modification to measure calculation timeframe. Reporting by EPs on measures and timeframe is done through NC-MIPS, which was updated for 5/1/17 release, to incorporate the modification	NC is currently conducting audits on attestations from Program Year 2017. Our audit strategy was updated in 2018 to include this change for auditing Program Year 2017 attestations.
Definition now includes demonstration of supporting information exchange and prevention of information blocking. https://www.federalregister.gov/d/2016-25240/p-6988			
NC posted a notice to our program website with the update to the definition of meaningful EHR user	NC-MIPS produces a summary PDF beginning in Program Year 2017 that providers are required to sign to attest that they meet the definition of meaningful EHR user that includes that s/he supports information exchange and the prevention of health information blocking	Ongoing - program staff review each attestation as part of pre-payment validations to be sure it has been signed signifying that the provider attests to meeting the requirements	NC is currently conducting audits on attestations from Program Year 2017. Our audit strategy was updated in 2018 to include this change for auditing Program Year 2017 attestations.

NC has posted a notice to our program website explaining that providers are required to attest that they meet the updated definition of meaningful EHR user	Beginning with program year 2017, NC-MIPS produces a summary PDF that providers are required to sign to attest that they meet the updated definition of meaningful EHR user	Program staff review each attestation as part of pre-payment validations to be sure it has been signed signifying that the provider attests to meeting the requirements	NC is currently conducting audits on attestations from Program Year 2017. Our audit strategy was updated in 2018 to include this change for auditing Program Year 2017 attestations.

IPPS Rule

In the IPPS Final Rule, CMS finalized policies that will impact the NC Medicaid EHR Incentive Program in Program Year 2018. Stage 3 is no longer required in Program Year 2018. Providers may attest to either Modified Stage 2 MU or Stage 3 MU. Additionally, providers may choose to use a 2014 Edition CEHRT (only if attesting to Modified Stage 2 MU), 2015 Edition CEHRT, or a combination of 2014 Edition and 2015 Edition CEHRT (only permitted to use a combination 2014 and 2015 Edition CEHRT for Stage 3 if the CEHRT is capable of capturing Stage 3 MU objectives/measures). Also, in Program Year 2018, providers may continue to use a 90-day EHR objective reporting period. https://www.gpo.gov/fdsys/pkg/FR-2017-08-14/pdf/2017-16434.pdf

Notice of IPPS changes was posted to our program website and to the NC-MIPS landing page.	In NC-MIPS for Program Year 2018, all providers can attest to a 90-day EHR reporting period and can attest to Modified Stage 2 or Stage 3.	NC's Attestation Validation Portal (AVP) displays the Program Year and the EHR reporting period, MU stage, and CEHRT number, which is validated using ONC CHPL.	NC is currently conducting audits on attestations from Program Year 2017. Our audit strategy was updated in 2018 to include this change for auditing Program Year 2017 attestations.

On August 17, 2018, CMS released the *Fiscal Year (FY) 2019 Medicare Hospital Inpatient Prospective Payment Systems (IPPS) for Acute Care Hospitals and Long-term Care Hospital (LTCH) Prospective Payment System* final rule. In this final rule, CMS adopted policies including an EHR reporting period of a minimum of any continuous 90-day period in 2019 and 2020 for new and returning participants of the Promoting Interoperability Programs and Requires the use of 2015 Edition CEHRT for eligible hospitals and critical access hospitals (CAHs) beginning in Calendar Year (CY) 2019.

Notice of IPPS changes was posted to our program website.	In NC-MIPS for Program Year 2019, all providers can attest to a 90-day EHR reporting period. NC-MIPS automatically routes EPs to 90- or 365-day CQM reporting based on previous participation.	NC's Attestation Validation Portal (AVP) displays the EHR and CQM reporting periods and CEHRT number, which is validated using ONC CHPL	NC is currently conducting audits on attestations from Program Year 2017. We are in the process of updating the audit strategy to include this change for auditing Program Year 2019 attestations

On November 1, 2018, CMS released the *Medicare Physician Fee Schedule (PFS) Final Rule*. This rule includes changes to the Medicaid Promoting Interoperability Program, as well as for the Quality Payment Program (QPP) and Merit-based Incentive Payment System (MIPS) including aligning available PI eCQMs with the list of eCQMs available for Eligible Clinicians under MIPS in 2019 and requiring EPs to report on any six eCQMs related to their scope of practice. In addition, Medicaid EPs are required to report on at least one outcome or high-priority measure. If there are no outcome or high priority measures relevant to an EP's scope of practice, they may report on any six relevant measures.

Notice of PFS changes was posted to our program website	In NC-MIPS for Program Year 2019, providers can select any six of the 50 available PI eCQMs. CQMs are grouped as outcome measures and high priority measures. Automatic system checks confirm six are selected.	NC's Attestation Validation Portal (AVP) displays complete and valid checks done automatically in NC-MIPS.	NC is currently conducting audits on attestations from Program Year 2017. We are in the process of updating the audit strategy to include this change for auditing Program Year 2019 attestations

C.4 NC Medicaid Incentive Payment System (NC-MIPS)

NC-MIPS is a proprietary system built to collect and verify provider attestation data—including provider type, patient volume, and attestation details—for the purposes of administering the EHR Incentive Program in compliance with the Final Rule. NC-MIPS consists of programs and processes to help ensure EPs have met the federal and state statutory and regulatory requirements necessary to receive EHR incentive payments.

At a high level, the validation and payment workflow is as follows:

1. Receive registration transactions from the CMS R&A into the MIPS2 database
2. Allow EPs to attest with NC through the NC-MIPS portal
3. Staff verifies information, determine payment eligibility and payment amount
4. Notify the CMS R&A of eligibility status via transaction
5. Coordinate with the CMS R&A to avoid duplicate payments and/or payment errors
6. Make payments through MMIS
7. Send payment information to the CMS R&A via transaction

This workflow requires interaction between multiple systems and users. These interactions include:

- Communication with the CMS R&A using FTP-SSL from a server with a CMS-provided certificate, to a secure, assigned Gentran mailbox. NC-MIPS adheres to national data standards for all such data exchanges.
- Utilizing the MIPS2 database, which stores data from the NC-MIPS portal, where providers create an account, enter information for eligibility determination, complete attestation, and track attestation status. See *Appendix 2 - NC-MIPS Portal 2.0 Screenshots*.
- Utilization of MMIS to execute the payments once approved.
- Utilization of the NC Medicaid claims data warehouse for validations.
- Utilization of two user interfaces:
    - Interface 1 - NC-MIPS: used by professionals to complete registration, submit attestation data, and view attestation status.
    - Interface 2 – Attestation Validation Portal (AVP): used by Program staff to process attestations from eligibility determination to payment.

These interactions and relationships are depicted in the two figures below.
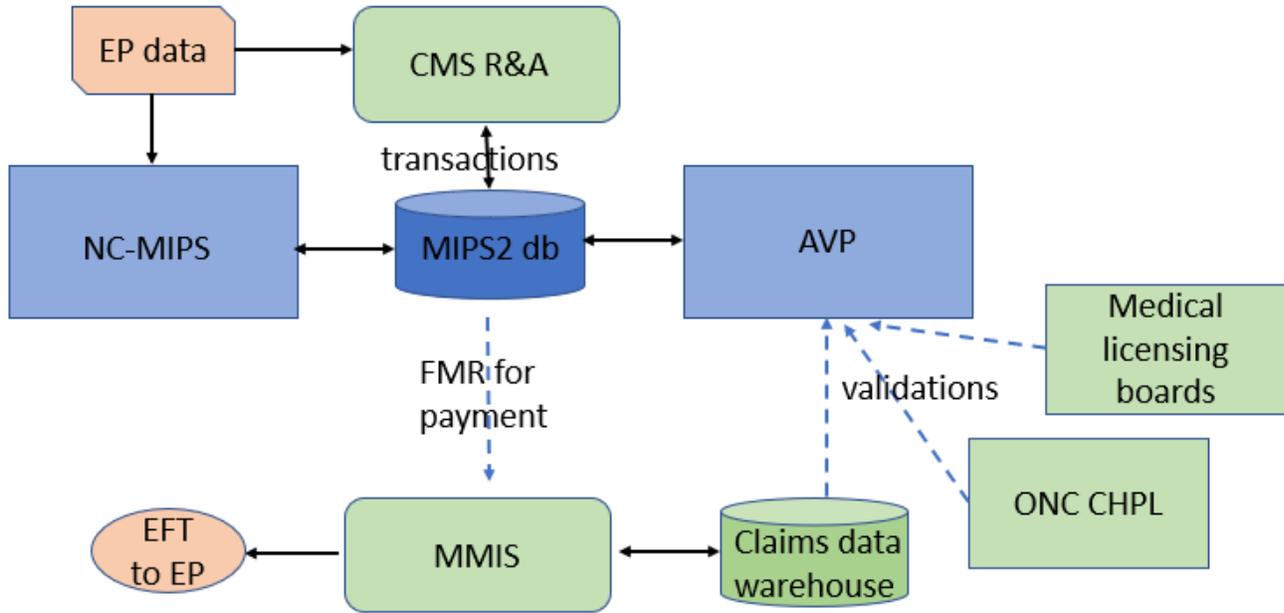
Figure 10 - NC-MIPS Integration

The figure below highlights the interaction of providers with the CMS R&A System and NC-MIPS from registration through notification of a payment decision.
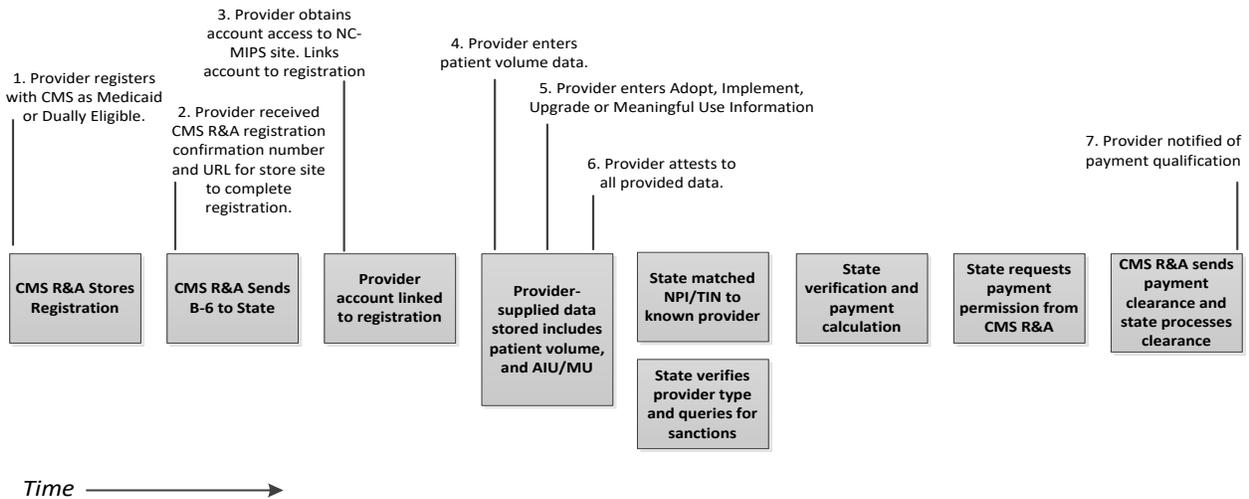
Figure 11 - Provider Interaction with NC-MIPS

Highlights for NC-MIPS development are listed below. In addition, provider communication, system analysis and design, and joint interface testing with CMS precede the milestones laid out here.

2011

- January 1, 2011—Go Live (CMS Registration)

- January 4, 2011—EP Registrations received from CMS
- January 15, 2011—EH Registrations received from CMS
- February 15, 2011—Go Live (NC-MIPS Attestation)
- March 2011—EP Attestations Begin
- March 2011—Go Live (Validation and Payment)
- March 2011—EP Incentive Payments Begin
- September 1, 2011—EH Attestations Begin
- September 31, 2011—EH Reporting Year Ends for FFY 2011
- September 2011—EH Incentive Payments Begin
- November 30, 2011—EH Attestation Deadline for FFY 2011
- December 2011—In excess of $20 Million in Incentive Payments Distributed

2012

Beginning in January 2012, further NC-MIPS development was carried out in-house at OMMISS/NC Medicaid by newly added state staff. Early 2012 projects included addition of AIU and MU attestation capability. To accommodate these upgrades, 2012 AIU attestations were accepted through an electronic attestation template in April, May & June. During this time the groundwork for a better attestation validation portal was also underway.

- February 29, 2012—EP Attestation Deadline for CY 2011
- April 1, 2012—Electronic Attestation Template Implementation
- July 23, 2012—Go Live (2012 AIU Attestation through NC-MIPS 2.0)
- August 20, 2012—Go Live (MU Attestation)
- November 30, 2012—Go Live (Replacement Attestation Validation Portal)
- December 2012—In excess of $87 Million in Incentive Payments Distributed

2013

- January 7, 2013—Go Live (Stage 1 MU Eligibility Changes)
- February 18, 2013—Advanced reporting functionalities
- February 18, 2013—Audit Tab
- February 18, 2013—File Upload
- March 15, 2013—Go Live (Stage 1 MU Measure Changes)
- May 15, 2013—Advanced Search
- May 15, 2013—Provider Relations & Provider Relations Lead roles in Attestation Validation
- May 15, 2013—Outreach Tab

2014

- 6/6/2014 – Do not allow providers to do account set-up in MIPS when their B-6 is "IN_PROGRESS"
- 9/19/2014 - Go Live (Stage 1 CQMs. New 64 CQMs in place of Core CQM, Alternate CQM & Additional CQM for MU Attestations for [Program Year 2014])
- 11/21/2014 - Go Live (Stage 2 MU Measure Changes)

2015

- 1/1/2015—Go Live (Program Year 2015 for EPs)
- 1/30/2015—Go Live (Flexibility Rule for EPs – To accept flexibility rule attestations from 1/30/2015 until the end of the EP attestation tail period, April 30, 2015.)
- 3/16/2015—Extended tail period deadline from 04/30/2015 for EH [Program Year 2014]
- 5/1/2015—Flexibility Rule ends for EP [Program Year 2014]

2016

- Feb 2016—Go Live (Modified Stage 2 MU Measure Changes)
- March 2016—NCID Username Update Tool
- April 2016 – Close Program Year 2015
- June 2016—Go Live (Program Year 2016 AIU for EPs)
- June 2016—Go Live (Program Year 2016 AIU/MU for EHs)
- July 2016— Go Live (Program Year 2016 MU for EPs)
- September 2016 - Removal of MPN and Billing MPN fields and related text from MIPS and AV Portals.
- September 2016 - Referral rule changes in AV Portal.
- September 2016 – Make system changes in MIPS for Program Year 2017 Modified Stage 2 MU, schedule Go Live May 2017
- October – April 2017 – Make system changes in MIPS for Stage 3, scheduled Go Live May 2017
- December 2016 – Added page to track AHEC utilization

2017

- January – April 2017 – Make system changes in MIPS for Modified Stage 2 and Stage 3 MU
- April 30, 2017 – Close Program Year 2016
- May 2017 – Go Live (Program Year 2017 Modified Stage 2 and Stage 3 MU)
- August 2017 – Hard stop for EPs and EHs when Payment year is 1 [2017 PY and beyond]
- August 2017 – Hard stop for EPs and EHs when EH has received their third payment and EP has received their sixth payment
- August 2017 – New field and text box on the Objective#10 page when EP is in active engagement with to submit syndromic surveillance data [Modified Stage 2 and Stage 3]
- September 2017 – New status "Payment Adjustment" in AV Portal for Recoupment/Additional payments
- October 2017 – Allow providers to "Withdraw" their attestations even after program year is no longer active
- October 2017 – New CQM requirements for Program Year 2017 and beyond
    - Remove all domains and domain validations
    - Remove 11 CQMs [CMS179v5, CMS126v5, CMS148v5, CMS163v5, CMS182v6, CMS141v6, CMS140v5, CMS62v5, CMS77v5, CMS61v6 and CMS64v6]
- November 2017 – Add new reporting period for the CQM's and error message updates on the MU page

2018

- February 2018 – Create an additional report for Provider Relations based on B-6 to be called Welcome Letter.
- April 30, 2018 – Close Program Year 2017
- May 2018 – Go Live (Program Year 2018 MU for EPs & EHs)
- May 2018 – System updates for EPs who have done MU in a prior program year submitting between May 1 - Dec 31, 2018
- May 2018 – AHEC Page updates beginning May 1, 2018 (Program Year 2018)
- June 2018 – B-6 & C-5 transaction updates to add new fields
- June 2018 – EP Individual Patient Volume Page - Removed incident to-related questions
- June 2018 – Hard stop on the status page for provider's who have failed payment year 1 Audit and returning for payment year 2 in Program Year 2018
- June 2018 – New look-up table to check for Group 1 or Group 2

- June 2018 – Routing based on B-6 payment year for EPs who complete first-time account set-up (Group 1 & 2)
- June 2018 – Drop-down list of registries instead of text boxes for MU Objective 10 Measure 3 (Modified Stage 2) or MU Objective 8 Measure 4 (Stage 3)
- July 2018 – Created two new Statuses "Voluntary Payment Return" for providers who have returned payments and "Adjustment due to Recoupment" for failed Audits [EP & EH]
- July 2018 – Change "DMA" to "NC Medicaid" and update URL's on all MIPS pages and EP Attestations Guides
- August 2018 – Updates to Stage 3 MU Attestations Guides
- August 2018 – Text updates to the Modified Stage 2 and Stage 3 Objectives for the 2018 PY
- November 2018 – New CQMs for 2018 Program Year [Total CQM's for 2018 PY=53]

2019
- January 2019 – System updates (starting 1/1/2019) for returning EPs who have already submitted their Part 1 Attestations for 2018 Program Year (between 5/1/2018 and 12/31/2018)
- February 2019 – Updates to text for Modified Stage 2 MU Objectives 8 and 9 for all new attestations and Attestation Guide update (Program Year 2018)
- March 2019 – Implemented Work-around for EPs with Greenway CEHRTs
- May 2019 – 2019 Program year launched
    - Part 1 for "Returning MU" users launched for 2019 Program year
    - Full submission for "New MU" users launched for 2019 Program year
    - Remove "Modified Stage 2" option and update text on the "Measure Reporting Period" Page for 2019 Program year
    - NC-AHEC page updates for Program Year 2019
    - Updated CQMs and instructions for 2019 Program year
    - Updated Stage 3 MU Objectives for 2019 Program Year
- June 2019 – AV-Portal: Add a new field "NCIR Exclusion" in the Attestation Tab for EP's for Program Year 2018 and beyond
- June 2019 – NC-MIPS Portal: Stage 3 MU - Update Objective 6 Exclusion logic
- July 2019 – NC-MIPS Portal: Stage 3 MU - Update Objective 7 Exclusion logic
- July 2019 – Create custom process state ("Greenway Withdrawn") for Greenway Attestations
- August 2019 – Transactions: Upgrade the Entity Framework in Visual Studio, E-7, E-8
- September 2019 – NC-MIPS Portal: Portal changes to accept MU and CQMs from Returning Greenway EP's [2018 PY only]
- October 2019 – AV-Portal: New field in PR and PI right rail & Attestation Tab for Audit Email sent date and create a new report for Audit Heads up Email Sent
- October 2019 – AV-Portal: Add a new PI report - "Audits In Progress"

2020
- January 2020 – NC-MIPS & AV Portals: System updates for Part 2 (starting 1/1/2020) for returning EP's who have already submitted their Part 1 Attestations for 2019 Program Year (between 5/1/2019 and 12/31/2019)
- February 2020 – NC-MIPS: New 2019 Only Ops Report [PY 2019 & Beyond]
- March 2020 – AV-Portal: Update the Trigger for the External Status of Waiting for Signed Attestation to Validating Attestation
- May 2020 – Program Year 2019 closed, and Program Year 2020 launched

- o NC-MIPS & AV Portals: System updates (starting 5/1/2020) to accept 2020 Program Year Attestations
- o NC-MIPS Portal: Measure Reporting Period page updates for Program Year 2020 launch
- o Updated CQMs and instructions for 2020 Program Year
- o Updated Stage 3 MU Objectives for 2020 Program Year
- o Updated Stage 3 MU Attestation Guide
- o NC-AHEC page updates for Program Year 2020

2021

- May 2021 - Program Year 2020 closed, and Program Year 2021 launched
- October 2021 – NC-MIPS will close for Program Year 2021
- December 2021 – All payments will be issued by December 31, 2021

C.4.1 NC-MIPS Activities

Overview

All providers interested in applying for either Medicare or Medicaid incentives under ARRA are required to register first with CMS. EPs must have chosen to participate in either the Medicare or Medicaid Incentive Program, while EHs may have qualified to participate in both programs ("dually eligible"). Once registered with CMS, any EP applying for a Medicaid incentive payment with North Carolina must apply at the state level through NC-MIPS.

Project Management

NC DHHS established OMMISS as a Program Management Office (PMO) to oversee the various HIT projects associated with the Replacement MMIS. NC Tracks, the Replacement MMIS, is a multi-payer initiative with Medicaid, State Children's Health Insurance Program (SCHIP), Public Health, Rural Health, and MH/DD/SAS. The projects that were part of this effort included the MMIS Replacement, decision support and health informatics, surveillance and utility review, the MITA State Self-Assessment, initial NC SMHP development, and development of NC-MIPS 1.0.

Under the executive sponsorship of the NC Medicaid Director, OMMISS was directly responsible for the design, development, testing, and implementation of NC-MIPS until April 1, 2012. OMMISS was responsible for overseeing NC-MIPS Operations, planning and coordinating activities with the Medicaid Enrollment Service Center and NC Medicaid, and maintaining the necessary processes and staffing to properly support the program as outlined below in the Functional Requirements. Since April 1, 2012, NC-MIPS' development activities have been done in-house.

Functional Requirements

There are six major functions required for the administration of incentive payments through the NC Medicaid EHR Incentive Program.

1. Registration

CMS currently provides a mechanism for EPs and EHs to register for the EHR Incentive Programs at the national level through the CMS R&A. Registration information is then collected and stored by CMS and is sent via a B-6 transaction to North Carolina for any EP who has indicated that they would like to participate in the NC Medicaid EHR Incentive Program.

2. Attestation and Qualification

After registration with CMS, NC must collect and analyze information from EPs to verify they are eligible to receive incentive payments. To qualify for payment in the first year of participation, CMS and NC collected attestations

regarding the adoption, implementation, or upgrade to CEHRT; in subsequent participation years, providers must demonstrate MU of that CEHRT. To demonstrate MU of CEHRT, CMS will collect attestations from Medicare participants and dually eligible EHs and states will collect attestations from Medicaid-only participants.

Program staff verifies attested data through a series of validation checks. Upon successful attestation and validation, NC checks with CMS before granting final approval to pay the specific EP via a D-16 transaction and CMS confirms approval to pay via a D-16 response file.

3. Payment and Settlement

Although it has been determined that AVP is correctly calculating incentive payments for EPs based on payment year, Program staff continue to perform some manual steps to verify the accuracy of payment calculations and assignments. In addition, checks are in place to ensure that maximum payment amounts are not exceeded, and duplicate payments are not issued.

CMS provides 100 percent funding to NC for the incentive payments. After qualification is determined and CMS has issued final approval, NC delivers the incentive payments to the EP and notifies CMS that payment has been issued. In the case where a provider owes a balance to Medicaid, that amount is withheld from the provider's incentive payment.

Payments are scheduled as needed through the MMIS system via electronic funds transfer (now the required method of payment for all Medicaid providers).

4. Management of Post-Payment Operations

NC manages an appeals process that parallels the current process for provider claim payments. The categories for appeal are:

- Denial of incentive payment due to ineligibility;
- Appeal of incentive payment amount; and,
- Denial based on failure to demonstrate MU of CEHRT.

EPs who attested can appeal a payment decision to prove that the attestation submitted as of the close of the program year did in fact demonstrate that they met all eligibility requirements and did meaningfully use CEHRT.

The auditing function, as described in the NC Medicaid EHR Program Audit Strategy will implement pre- and post-payment controls to prevent and detect fraud, waste, and abuse.

There are three tenets of the NC Medicaid audit approach related to the EHR Incentive Program:

1. NC Medicaid will avoid making improper payments by ensuring that payments only go to EPs, and that payments meet all incentive funding requirements.
2. NC Medicaid will review and validate demonstration of MU of CEHRT through a combination of validation activities before payments are disbursed and selective audits after payments are disbursed.
3. NC Medicaid will prevent and/or identify suspected fraud and abuse through data analysis and selected provider audits.

Post-payment audit functions focus on:

- Provider Eligibility: verification that providers are Medicaid providers, credentialed, not sanctioned, and are one of the eligible provider types recognized by CMS under the EHR Incentive Program regulations;
- Patient Volume: audit of attested Medicaid and total patient volumes, including use of patient-level data such as claims; and
- Meaningful use: audit that all required MU objectives were met.

Post-payment operations are tracked in AVP.

5. Provider Support

The NC Medicaid EHR Incentive Program has a dedicated help desk to answer provider questions and assist with the attestation process. Also, NC Medicaid has contracted with NC AHEC through June 30, 2021 to provide in-practice or remote/virtual technical assistance with meaningful use, attesting for the Program, and other HIT initiatives. EP-specific Attestation Guides have been developed to walk providers through an attestation on the NC-MIPS Portal, and extensive guidance on the Program is available on the Program's website, which is managed in-house by the Program's business analyst.

To achieve a successful program implementation with NC providers, the Program team's business analyst developed a comprehensive Communication Plan (available upon request). The plan includes analysis and recommendations for provider outreach, including methods to communicate with providers about the state's plans and resources to provide information about the necessary registration and attestation process to receive incentive payments.

6. Reporting

Though not required by the HITECH Act (as required by CMS for Medicare incentives) NC does post the names of Medicaid EPs and EHs that received incentive payments to the Program website. This spreadsheet is posted following the date of the checkwrite.

The NC-MIPS2 database is used for CMS reports such as quarterly reports and the annual report.

Technical Requirements

NC-MIPS is a stand-alone system that ingests information from providers and from the NC- MIPS2 database. NC-MIPS is maintained in-house by the Program's development team.

Phases of NC-MIPS

To enable the state to meet aggressive deadlines for interface testing with CMS, to accommodate requirements and technical details that are constantly dynamic, and to allow providers to attest for, and receive, incentive payments as soon as possible in 2011, the design and development of the NC-MIPS sub-system was broken down into phases.

Phase 1 - NC-MIPS 1.0

NC-MIPS 1.0 was launched in January 2011 and allowed providers to register with NC-MIPS. This release also included the functionalities necessary to interface with the CMS R&A through the B-6 and B-7 interfaces. A March 2011 update allowed providers to attest to AIU of CEHRT as outlined in the Stage 1 Final Rule. This included the establishment of a provider portal that allowed for annual attestation and tracking attestation and payment status, as well as deployment of the D-16 and D-18 interfaces with the CMS R&A. In September 2011, the level of automation involved in the attestation validation functionality was augmented.

Phase 2 – NC-MIPS 2.0

NC-MIPS 2.0 included several upgrades and was deployed in various releases in 2012. This phase allowed MU reporting and enhanced attestation workflow functionality. In 2013 and 2014, NC-MIPS was upgraded to comply with the Stage 2 Final Rule. In 2015 and 2016, upgrades were made to comply with the October 2015 Final Rule and providers were able to attest for Modified Stage 2 MU in February 2016. In 2017, NC-MIPS was upgraded to comply with the 2015-2017 Modifications Rule, OPPS Rule, and QPP, as well as the August 2017 IPPS Rule. In 2018,

NC-MIPS was upgraded to comply with the Fiscal Year (FY) 2019 Medicare Hospital Inpatient Prospective Payment Systems (IPPS) for Acute Care Hospitals and Long-term Care Hospital (LTCH) Prospective Payment System final rule and Medicare Physician Fee Schedule Final Rule.

NC-MIPS is maintained and enhanced by Program and State IT staff.

System Life

Routine operations, maintenance, and system updates will be conducted throughout the life of the system. NC-MIPS will be supported through the life of the Medicaid EHR Incentive Program. Then plans for its decommissioning will be developed.

C.4.2 Interface with CMS' Registration & Attestation System

The CMS R&A stores data and controls interfaces necessary to implement the EHR Incentive Programs at the national level. North Carolina and other states use the CMS R&A to coordinate Medicaid EHR Incentive Program activities with CMS. This coordination is managed through specifications laid out in CMS Interface Control documents. NC participates by using the following defined interfaces:

- *Interface B-6 (the CMS R&A to State): Provider Registration Data*
  All EPs applying for incentives must first register with the CMS R&A. With minor variations based on provider type, the CMS R&A captures basic information such as demographics, payee information, and program selection (Medicare, Medicaid, or both). It checks for valid National Provider Identifier (NPI), Tax Identification Number (TIN), and any sanctions. Professionals opting to attest with Medicaid are passed to the state as part of a daily registration batch B-6 transaction if they have no federal sanctions. During the registration process, CMS supplies the professional with a URL to their state's attestation website which will permit continuation of the registration and attestation process. Providers are instructed to check the website after two business days, providing time for the CMS R&A to communicate to the state and for the state to process the registration.

- *Interface B-7 (State to the CMS R&A): Registration Confirmation Data*
  After a B-6 is processed and the provider enters registration data, patient volume data, and MU data, eligibility response is returned from the state to the CMS R&A. If the provider is not found in the state's registry of professionals, or if any other verification fails, the CMS R&A is notified that the provider is not eligible. Eligibility responses are communicated to the CMS R&A in registration B-7 response batches.

- *Interface D-16 (State to CMS' R&A): Duplicate Payment Exclusion Check*
  To avoid duplicate payments and making payments to federally sanctioned professionals, the Program notifies the CMS R&A when it intends to make a payment. These notifications are performed in accordance with specifications in the CMS Interface Control document. Payments are not made until a response from the CMS R&A is received. The state assumes that the CMS R&A will lock the specific provider records before sending the response back to the state, and that the lock will remain in effect until the state notifies the CMS R&A that payment has been issued.

- *Interface D-18 (State to CMS R&A): Incentive Payment Data*
  NC-MIPS transmits payment details to the CMS R&A as specified in the CMS Interface Control Document after a payment has been made. To support the interfaces, NC configured Windows Service to invoke a FTPS client (curl) to connect to the CMS Gentran server farm to send and retrieve the appropriate files during a configurable window. A combination of certificates and username/password credentials ensures the connection is appropriately made with the FTPS protocol, and ensures the data is transported securely. If the file has not been found at CMS or is unable to be sent to CMS by a

configurable number of minutes after the end of the scheduled window, an exception is raised to operations to conduct follow up.

Upon receipt of a file, North Carolina:

- Uses material specified in the CMS Interface Control document to determine how the file should be processed;
- Validates the file retrieved against the XML schema provided in the CMS Interface Control document;
- Performs a series of additional validations to ensure the file integrity (e.g., verify transaction count, that files are not being processed out of order, etc.); and,
- Individually processes the transactions.

As one of the initial testing partners with CMS, in 2011, North Carolina successfully tested connectivity and the ability to send and retrieve files using the methodology described above.

C.4.3 NC-MIPS and Other Systems

The business processes associated with the NC Medicaid EHR Incentive Program are largely distinct from other Medicaid business processes, and NC-MIPS is a standalone system that providers use to attest for the EHR Incentive Program, as is the Program's internal system, AVP (attestation validation portal).

NCAnalytics Data Warehouse

The Program's data analyst utilizes the Medicaid claims data warehouse, called the NCAnalytics Data Warehouse, to validate the Medicaid patient volume requirement for EPs. Where there is a discrepancy between provider-supplied and claims data warehouse data, the help desk performs outreach to attempt to determine eligibility, if time allows prior to the close of the program year. As eligibility determinations are made, snapshots of relevant summary claims data are maintained in NC-MIPS for audit purposes.

NCTracks

Incentive payments are made through NCTracks, NC's MMIS, in the same mode as other Medicaid financial processing, on the check-write cycle for claims. This cycle distributes incentive payments via electronic funds transfer (EFT) when prompted by the Program.

C.5 Attestation and Payment

Providers must attest that all the data supplied to the state is accurate prior to payment. The attestation finalizes the verifications described in *Section C.3: NC Medicaid EHR Incentive Program Business Requirements* to ensure compliance with CMS' Final Rule conditions for receiving incentive payments. The steps required to complete the incentive payment process include:

- Attestation;
- Calculating the payment amount;
- Coordinating with the CMS R&A, as described in *Section C.4.2: Interface with CMS' Registration & Attestation System;* and,
- Following state payment processes.

C.5.1 Attestation

After provider data has been collected, providers attest to the veracity of the information provided and their qualification according to program rules. Providers must print their attestation PDF from NC-MIPS and manually sign to verify the information reported through NC-MIPS and to acknowledge the statements below.

The Final Rule lists five statements that providers participating in the Medicaid EHR Incentive programs must attest to for EHR reporting periods beginning in 2017:

With my signature below, I attest that I

1. Acknowledge the requirement to cooperate in good faith with ONC direct review of my health information technology certified under the ONC Health IT Certification Program if a request to assist in ONC direct review is received; and
2. If requested, cooperated in good faith with ONC direct review of my health information technology certified under the ONC Health IT Certification Program as authorized by 45 CFR part 170, subpart E, to the extent that such technology meets (or can be used to meet) the definition of CEHRT, including by permitting timely access to such technology and demonstrating its capabilities as implemented and used by the EP in the field.
3. Did not knowingly and willfully take action (such as to disable functionality) to limit or restrict the compatibility or interoperability of certified EHR technology.
4. Implemented technologies, standards, policies, practices, and agreements reasonably calculated to ensure, to the greatest extent practicable and permitted by law, that the certified EHR technology was, at all relevant times—
   a. Connected in accordance with applicable law;
   b. Compliant with all standards applicable to the exchange of information, including the standards, implementation specifications, and certification criteria adopted at 45 CFR part 170;
   c. Implemented in a manner that allowed for timely access by patients to their electronic health information; and
   d. Implemented in a manner that allowed for the timely, secure, and trusted bi-directional exchange of structured electronic health information with other health care providers (as defined by 42 U.S.C. 300jj(3)), including unaffiliated providers, and with disparate certified EHR technology and vendors.
5. Responded in good faith and in a timely manner to requests to retrieve or exchange electronic health information, including from patients, health care providers (as defined by 42 U.S.C. 300jj(3)), and other persons, regardless of the requestor's affiliation or technology vendor.

The attestation process also requires EPs to acknowledge this warning of the potential for prosecution and the ramifications if an EP fails a post-payment audit:

Concealment or falsification of material facts regarding incentive payments can result in Medicaid Provider Payment suspension, civil prosecution pursuant to the False Claims Act (31 USC 3729-3733), Medical Assistance Provider Fraud (N.C.G.S. 108A-63), Medical Assistance Provider False Claims Act (N.C.G.S. 108A-70.10 to 70-16), the North Carolina False Claims Act (N.C.G.S. 1-605 to 1-618), and/or criminal prosecution pursuant to criminal fraud statutes of North Carolina.

This is to certify that the foregoing information is true, accurate and complete. I understand that Medicaid EHR incentive payments submitted under this provider number will be from Federal funds, and that any falsification, or concealment of a material fact may be prosecuted under Federal and State law.

I will keep all documentation, including patient-level detail, supporting the information attested to for six years from the date payment is received. I understand that if I fail post-payment audit, the incentive payment must be returned to the state.

The provider must manually sign – electronic signatures and stamps are not accepted – to ensure the practice did not attest on behalf of the provider without the provider's consent.

C.5.2 Payment Calculation for Eligible Professionals

Once an EP is deemed eligible to receive an incentive payment, that EP or their designated payee is paid in accordance with the amounts and schedule set forth by CMS. CMS has stipulated standard incentive payment amounts and a schedule for their distribution for all EPs participating in the Medicaid EHR Incentive Program based on a model of sharing the cost of implementing CEHRT.

The maximum total incentive available for an EP over six years of participation in the program is $63,750. The maximum total incentive available for a pediatrician qualifying under the special 20 percent Medicaid patient volume rule for all participation years is $42,500. Pediatricians who dip in and out of the 30 percent Medicaid patient volume threshold may receive between $42,500 and $63,750 over the course of their participation in the program.

Payment Year	EP qualifying under 30 percent Medicaid patient volume	Pediatrician qualifying under 20 percent Medicaid patient volume rule
Year 1	$21,250	$14, 167
Year 2	$8,500	$5,667
Year 3	$8,500	$5,667
Year 4	$8,500	$5,667
Year 5	$8,500	$5,667
Year 6	$8,500	$5,667
Total Incentive Payment Amount	$63,750	$42,500

Table 17 - Payment Schedule for EPs

Medicaid providers are not required to participate on a consecutive, annual basis; however, the last year an EP was able to begin participating was Program Year 2016, with the program ending in Program Year 2021. Unlike Medicare, the NC Medicaid EHR Incentive Program does not include a future reimbursement rate reduction for claims submitted by non-participating Medicaid providers.

C.5.3 Payment Calculation for Eligible Hospitals

NOTE: Because non-consecutive participation is not allowed for EHs after 2016 and no EHs participated in 2018, no NC EHs will participate in years 2019-2021. The following information on EHs has been left in this document only to provide historical context and for audit records.

Pursuant to the Final Rule 75 FR 44314, payment to EHs are based on discharges using the average annual growth rate for an individual hospital over the most recent three years of available data from an auditable data source. As a standard, North Carolina has adopted the use of four consecutive periods of full 12-month Medicaid cost report data under a single CCN to calculate an average annual growth rate over three years. Attestation of cost report data must correspond to the Medicare CCN number registered with CMS for the EH submitting the attestation.

Definitions:

- First Payment Year: 75 FR 44314 defines an EHs First Payment Year as the first federal fiscal year they successfully demonstrate that they adopted, implemented, or upgraded CEHRT or were a meaningful user of CEHRT for the EHR reporting period for the payment year. EHs must review their number of consecutive 12-month Medicaid cost reporting periods under a single CCN in accordance with provisions below to determine their eligible First Payment Year under the standard payment calculation (see *Section C.5.3.1 Standard Payment Calculation*) or alternate payment calculation (see *Section C.5.3.2 Alternate Payment Calculation*).
- Base Year: North Carolina defines an EH's Base Year as the "EHR reporting period for the first payment year." The Base Year represents the most recent continuous 12-month period coinciding with the hospital's latest filed 12-month Medicaid cost report that is available prior to the EH's First Payment Year.
  - Example: FFY12 begins on October 1, 2011 and ends on September 30, 2012. EHs whose First Payment Year is FFY12, with 12-month cost reporting periods ending on or before September 30, 2011, must use their FY11 (or latest filed) cost report as their Base Year. EHs with 12-month cost reporting periods ending on or after October 1, 2011 must use their FY10 (or latest filed) Medicaid cost report as their Base Year. Once a Base Year is determined, it does not change under standard payment calculation (see *Section C.5.3.1: Standard Payment Calculation*) or alternate payment calculation (see *Section C.5.3.2: Alternate Payment Calculation.*)
- Tail Period: For 2011, the NC Medicaid EHR Incentive Program matched Medicare's 60-day tail period. In 2012, we extended the tail period to 120 days to account for a delay in launch of MIPS 2.0 and MU attestation. From 2013 and beyond, we have proposed a 120-day tail period matching EPs for consistency. The 120-day tail period will also allow providers more time to attest for 365 days of MU, as they will only be able to attest during the tail period for a 365-day MU payment. For example, program year 2017 attestations were accepted through April 30, 2018.

The following steps are used to determine the NC Medicaid EHR Incentive Payment for EHs with four or more consecutive 12-month cost reporting periods under a single CCN. If a provider has less than four consecutive 12-month cost reporting periods under a single CCN or has had a new enrollment, change of ownership (CHOW), merger, or divestiture of acute care inpatient beds, refer to *Section C.5.3.2: Alternate Payment Calculation* for the EH payment calculation.

C.5.3.1 Standard Payment Calculation

Step 1: Determine the Average Annual Growth Rate for the last three years

The average annual growth will be computed by averaging the annual percentage change in total patient discharges over the most recent three years of available data from 12-month hospital cost reports (MCRIF32) prior to the most current fiscal year. This information will be obtained from Total Patient discharge amounts in worksheet S-3, Part I, Line 12, Col 15 for the applicable FYs at the time of the calculation.

Example:

Total Patient discharges in worksheet S-3, Part I, Line 12, Col 15 for FY 2010, 2009, 2008, 2007 are shown in the chart below.

DGY3, DGY2, DGY1 will represent Discharge Growth 3 years ago, 2 years ago, and prior year respectively.
DGY3 = (Total Discharges FY08 – Total Discharges FY07)/Total Discharges FY07
DGY2 = (Total Discharges FY09 – Total Discharges FY08)/Total Discharges FY08

DGY1 = (Total Discharges FY10 – Total Discharges FY09)/Total Discharges FY09

Average Annual Growth rate = (DGY3+DGY2+DGY1) / 3

Total Discharges	FYB	FYE	W/S S-3, Part I, Line 12, Col 15	Prior Year	Current Year	Increase / (Decrease)	Growth Rate
3rd Prior Year	10/1/2006	9/30/2007	7,246				
2nd Prior Year	10/1/2007	9/30/2008	6,657	7,246	6,657	(589)	-8.1286%
1st Prior Year	10/1/2008	9/30/2009	5,720	6,657	5,720	(937)	-14.0754%
Current	10/1/2009	9/30/2010	5,456	5,720	5,456	(264)	-4.6154%
				Total Increase / (Decrease)			-26.8194%
				Average 3 Year Growth Rate			**-8.9398%**

Table 18 - Hospital Calculation Growth Rate Example

In this example, when FY 2011 data becomes available, FY 2007 data would not be used and FY 2011, 2010, 2009, and 2008 cost report data would be used.

Note that if the average annual growth rate is negative over the three-year period, it is applied as such.

Step 2a: Determine Projected Total Discharges

North Carolina will utilize the most recent year 12-month period hospital cost report data from MCRIF32 and the Annual Average Growth Rate from Step 1 to project Total Discharges for Year 2, Year 3, and Year 4. Projected Discharge figures will be rounded to the nearest whole number.

Current Year – The Data Source is worksheet S-3 Part 1, Line 12, Col. 15
Example: 5,456 Current Year Total Discharges

Year 2 Projected = [Number of discharges in Current Year * (1 + Average Annual Growth Rate)]
Example: [5,456 * (1 + (-0.089398)] = 4,968

Year 3 Projected = [Year 2 Projected * (1 + Average Annual Growth Rate)]
Example: [4,968 *(1 + (-0.089398)] = 4,524

Year 4 Projected = Year 3 Projected * (1+ Average Annual Growth Rate)
Example: [4,524 * (1 + (-0.089398)] = 4,120

Step 2b: Calculating the Total Discharge Related Amount

The Overall EHR Amount includes a discharge related amount of an additional $200 per projected discharges between 1,150 and 23,000 discharges. No amount is calculated for discharges prior to the 1,150th discharge or for discharges after the 23,000th discharge.

The following formula will be utilized to calculate the discharge related amount for years 1 through 4:

Discharge related amount for Year 1 = (Current Year Projected Discharges under 23,000 – 1149) * $200
Discharge related amount for Year 2 = (Year 2 projected discharges under 23,000 – 1149) * $200

Discharge related amount for Year 3 = (Year 3 projected discharges under 23,000 – 1149) * $200
Discharge related amount for Year 4 = (Year 4 projected discharges under 23,000 – 1149) * $200

Year	Per Discharge Amount	Projected Total Discharges	Disallowed Discharges	Allowable Discharges	Amount
Year 1	$200	5,456	1,149	4,307	$861,400
Year 2	$200	4,968	1,149	3,819	$763,800
Year 3	$200	4,524	1,149	3,375	$675,000
Year 4	$200	4,120	1,149	2,971	$594,200
Total Discharge Related Amount					$2,894,400

Table 19 - Hospital Calculation Total Discharge Amount Example

Step 3: Calculate the Initial EHR Amount for 4 Years

The Initial Amount is equal to a base amount of $2,000,000 + the Total Discharge related amount for each year.

Calculate Initial Amount	Year 1	Year 2	Year 3	Year 4
Base Amount	$2,000,000	$2,000,000	$2,000,000	$2,000,000
Discharge Related Amount	$861,400	$763,800	$675,000	$594,200
Aggregate EHR Amount	$2,861,400	$2,763,800	$2,675,000	$2,594,200

Table 20 - Hospital Calculation Aggregate EHR Amount Example

Step 4: Apply the Medicaid Transition Factor for Each of the 4 Years

Transition Factor Year 1 = 1.00
Transition Factor Year 2 = 0.75
Transition Factor Year 3 = 0.50
Transition Factor Year 4 = 0.25

	Year 1	Year 2	Year 3	Year 4
Aggregate EHR	$ 2,861,400	$ 2,763,800	$ 2,675,000	$ 2,594,200
Transition Factor	1.00	0.75	0.50	0.25
Applied Amount	$ 2,861,400	$ 2,072,850	$ 1,337,500	$ 648,550

Table 21 - Hospital Calculation Medicaid Transition Factor Example

Step 5: Calculate the Overall EHR Amount for 4 Years

Add the Aggregate EHR Amount for all four years after application of the Transition Factor.

Payment Year	Payment Amount
Year 1	$ 2,861,400
Year 2	$ 2,072,850
Year 3	$ 1,337,500
Year 4	$ 648,550
Total	**$ 6,920,300**

Table 22 - Hospital Calculation Overall EHR Amount Example

Step 6: Calculate the Medicaid Share of the Overall EHR Amount for 4 Years

The Medicaid share shall be calculated using the most current 12-month period from the hospital cost report data on MCRIF32.

The Medicaid share will be calculated as the numerator (M + N) divided by the denominator (P times the product of Q minus R divided by Q)

– <u>Numerator</u> = **M + N**

M = Number of paid Medicaid inpatient-bed days; if the qualifying cost report is in the CMS 2552-96 version, the source for this data element is worksheet S-3, Part I, Col 5, Line 1 plus Lines 6 through 10 of most recent fiscal year cost report. If the qualifying cost report is in the CMS 2552-10 version for 12-month cost report periods beginning on or after May 1, 2010, the source for paid Medicaid inpatient bed-days will be Worksheet S-3, Part I, Col 7, Line 1 plus Lines 8 through 12.

N = Number of paid inpatient-bed-days of Medicaid individuals enrolled in a managed care organization, a pre-paid inpatient health plan, or a pre-paid ambulatory health plan; if the qualifying cost report is in the CMS 2552-96 version, the source for this data element is worksheet S-3, Part I, Col 5, Line 2 of most recent fiscal year cost report. If the qualifying cost report is in the CMS 2552-10 version for 12-month cost report periods beginning on or after May 1, 2010, the source for paid Medicaid HMO inpatient bed days will be Worksheet S-3, Part I, Col 7, Line 2. If the cost report sources identified in this paragraph for paid HMO inpatient days contain days other than paid Medicaid HMO inpatient bed days, the provider must extract only those days which are paid Medicaid HMO inpatient bed days or paid out-of-state Medicaid inpatient bed days.

– <u>Denominator</u> = **P *((Q – R) / Q)**

P = Total amount of EHs' inpatient bed days over selected period; if the qualifying cost report is the CMS 2552-96 version, the source is worksheet S-3, Part I, Col 6, Line 1, plus Line 2 plus Lines 6 through 10 of most recent fiscal year cost report. If the qualifying cost report is the CMS 2552-10 version for 12-month cost report periods beginning on or after May 1, 2010, the source for total inpatient bed days will be Worksheet S-3, Part I, Col 8, Line 1 plus Line 2 plus Lines 8 through 12.

Q = Total amount of EH's charges; if the qualifying cost report is the CMS 2552-96 version, the source is worksheet C, Part I, Line 101, Col. 8 of most recent fiscal year cost report. If the qualifying cost report is the CMS 2552-10 version for 12-month cost report periods beginning on or after May 1, 2010, the source for total eligible charges will be Worksheet C, Part I, Line 200, Col 8.

R = Charges attributable to charity care; if the qualifying cost report is the CMS 2552-96 version, the source is the EH Attestation. If the qualifying cost report is the CMS 2552-10 version for 12-month cost report periods beginning on or after May 1, 2010, the source will be Worksheet S-10, Column 3, Line 20.

M	Total Paid Medicaid Inpatient Bed Days	2,749
N	Total Paid Medicaid Managed Care Inpatient Bed Days	0
Numerator (M+N)	Total Paid Medicaid and Managed Care Inpatient Days	2,749
Q	Total Hospital Charges	232,903,632
R	Total Charity Care / Uncompensated Care Charges	4,767,979
Q minus R	Total Hospital Charges Less Charity Care Charges	228,135,653
Q-R/Q	Non - Charity Care Percentage	0.979528104
P	Total Hospital Inpatient Bed Days	22,621
Denominator	Total Non-Charity Hospital Inpatient Bed Days	22,158
Medicaid Share		**0.124064074**

Table 23 - Hospital Calculation Medicaid Share Example

Step 7: Calculate the Medicaid Aggregate EHR Incentive Payment Amount

Aggregate EHR payment = Medicaid Share (Step 6) * Overall EHR Amount (Step 5)

Overall EHR Amount for 4 Years	$ 6,920,300
Medicaid Share	0.124064074
Medicaid Aggregate EHR Incentive Payment Amount (to be paid over a 3-year period)	**$ 858,560.61**

Table 24 - Hospital Calculation Aggregate Share Example

Step 8: Calculate the Annual EHR Incentive Payment Amount

Payments will be made over a three-year period for the Overall EHR amount with Year 1 payment at 50 percent, Year 2 payment at 40 percent, and Year 3 payment at 10 percent.

Payment Year	Percentage	Payment
Year 1 Payment	50%	$ 429,280.31
Year 2 Payment	40%	$ 343,424.24
Year 3 Payment	10%	$ 85,856.06
Year 4 Payment	0%	$ 0

Payment Year	Percentage	Payment
Total		$ 858,561.61

Table 25 - Hospital Calculation Annual EHR Incentive Payment Example

C.5.3.2 Alternate Payment Calculation

Below is the payment calculation for EHs with less than four consecutive 12-month cost reporting periods under a single CCN (new provider, CHOW, merger, or divestiture of acute care inpatient beds).

EHs with less than four consecutive 12-month cost reporting periods under a single CCN must have a minimum of two consecutive 12-month cost reporting periods under a single CCN, subject to the provisions in this section regarding new providers, CHOWs, mergers, and divestitures before they can attest for a first payment year. The minimum two consecutive 12-month cost reporting periods under a single CCN must be full cost reporting periods which occur after the cost reporting year in which the new enrollment, CHOW, merger, or divestiture occurred. For example, an EH has a September 30th year-end cost report period but changed ownership July 1, 2008. The new owner must use the two cost reporting periods of October 1, 2008 – September 30, 2009 and October 1, 2009 - September 30, 2010 as the minimum consecutive full 12-month cost reporting periods. Assuming the EH met all other eligibility requirements, they could attest in 2011 for their First Payment Year and use their FY10 cost report as the Base Year. The cost reporting period ended September 30, 2008 (and earlier) may not be included in the alternate payment calculation.

The First Payment Year calculation will be made using the EH's Base Year cost report data and an Average Annual Growth Rate calculated from the (minimum) two consecutive full 12-month cost reporting periods. The Second Payment Year calculation will use the third consecutive full 12-month cost report discharge data to revise the Average Annual Growth Rate. Base Year data shall remain unchanged. Any change in the Aggregate Medicaid EHR Incentive Payment Amount calculation based on the revised Average Annual Growth Rate will be adjusted in the Second Payment Year amount.

First Payment Year and the EH's corresponding Base Year are defined in *Section C.5.3 Payment Calculation for EHs*.

If a hospital is eligible for 2011 as their First Payment Year under the Alternate Payment Calculation, then the tail period defined in *Section C.5.3: Payment Calculation for EHs* applies if the hospital attested between October 1, 2011 and January 28, 2012.

Attestation of cost report data must correspond to the Medicare CCN number registered with CMS for the EH submitting the attestation.

New hospital providers with less than four consecutive 12-month cost reporting periods under their new CCN shall have the EH payment calculation in accordance with *Section C.5.3.2: Alternate Payment Calculation*.

CHOWs shall be defined by 42 C.F.R §489.18.

If a hospital provider has a CHOW which does not result in a change of CCN, and the hospital has four or more consecutive full 12-month cost report periods, the provider shall have the EH payment calculation in accordance with *Section C.5.3: Payment Calculation for EHs*, notwithstanding the provisions below for hospitals with mergers and divestitures.

Hospitals who have a CHOW resulting in a change of CCN shall follow the EH payment calculation in accordance with *Section C.5.3.2: Alternate Payment Calculation*.

Mergers are identified in 42 CFR 489.18 and may not result in the change of CCN for the provider absorbing the merged hospital acute care inpatient beds; however, such a merger of acute care inpatient beds will disproportionately skew the calculation of the Average Annual Growth Rate in the year of merger and the subsequent cost report period. Hospitals that have absorbed a merged hospital and have not had a change in CCN shall have the EH payment calculation in accordance with *Section C.5.3.2: Alternate Payment Calculation*.

For purposes of this document, divestitures are deemed to be hospitals which have divested of one or more licensed acute care beds from their CCN without a change of CCN; this reduction of beds is shown in the hospital's license from Division of Health Service Regulation. Such a divestiture will disproportionately skew the calculation of the Average Annual Growth Rate in the year of divestiture and the subsequent cost report period. Hospitals that have divested of acute care inpatient beds and have not had a change in CCN shall have the EH payment calculation in accordance with *Section C.5.3.2: Alternate Payment Calculation*.

The following steps for Year 1 and Year 2 will be used to determine the North Carolina Medicaid EHR Incentive Payment for EHs that have less than four consecutive full 12-month cost report periods under a single CCN.

Alternate Payment Calculation - Year 1

Step 1 (Year 1): Determine the Estimated Average Annual Growth Rate

The estimated Average Annual Growth Rate will be computed by averaging the annual percentage change in total patient discharges from the most recent two years of available data from the 12-month hospital cost reports (MCRIF32) prior to the First Payment Year. The two full 12-month cost report periods necessary to perform this calculation must be the two full 12-month cost report periods subsequent to the new enrollment, CHOW, merger or divestiture as described above. The 12-month cost report period in which the new enrollment, CHOW, merger, or divestiture occurred may not be used. This information will be obtained from Total Patient discharge amounts in worksheet S-3, Part I, Line 12, Col 15 for the applicable FYs at the time of the calculation.

Example:

Total Patient discharges in worksheet S-3, Part I, Line 12, Col 15 for FY 2011, 2010 are shown in the chart below.

DGY3, DGY2, DGY1 will represent Discharge Growth 3 years ago, 2 years ago, and prior year respectively.
DGY3 = N/A
DGY2 = N/A
DGY1 = (Total Discharges FY11-Total Discharges FY10)/Total Discharges FY10
Average Annual Growth Rate = (DGY1)

Total Discharges	FYB	FYE	W/S S-3, Part I, Line 12, Col 15	Prior Year	Current Year	Increase / (Decrease)	Growth Rate
3rd Prior Year	N/A	N/A	N/A				
2nd Prior Year	N/A	N/A	N/A	N/A	N/A	N/A)	N/A
1st Prior Year	10/1/2009	9/30/2010	8,230	N/A	N/A	N/A	N/A
Base Year	10/1/2010	9/30/2011	8,179	8,230	8,179	(51)	-0.6197%
				Total Increase / (Decrease)			-0.6197%
				Average Annual Growth Rate			**-0.6197%**

Table 26 - Alternate Hospital Calculation Growth Rate Example

(In this example, when FY 2012 data becomes available, FY 2012, 2011, and 2010 cost report data would be used to recalculate the Growth Rate).

Note that if the Average Annual Growth Rate is negative over the three-year period, it is applied as such.

Step 2a (Year 1): Determine Projected Total Discharges

North Carolina will utilize the Base Year 12-month period hospital cost report data from MCRIF32 and the Annual Average Growth Rate from Step 1 to project Total Discharges for Year 2, Year 3, and Year 4. Projected Discharge figures will be rounded to the nearest whole number.

> Current Year – The Data Source is worksheet S-3 Part 1, Line 12, Col. 15
> > Example: 8,179 Base Year Total Discharges
>
> Year 2 Projected = [Number of discharges in Current Year * (1 + Average Annual Growth Rate)]
> > Example: [8,179 * (1 + (-0.06197)] = 8,128
>
> Year 3 Projected = [Year 2 Projected * (1 + Average Annual Growth Rate)]
> > Example: [8,128 *(1 + (-0.06197)] = 8,078
>
> Year 4 Projected = Year 3 Projected * (1+ Average Annual Growth Rate)
> > Example: [8,078 * (1 + (-0.06197)] = 8,028

Step 2b (Year 1): Calculating the Total Discharge Related Amount

The Overall EHR Amount includes a discharge related amount of an additional $200 per projected discharges between 1,150 and 23,000 discharges. No amount is calculated for discharges prior to the 1,150th discharge or for discharges after the 23,000th discharge.

The following formula will be utilized to calculate the discharge related amount for years 1 through 4.

Discharge related amount for Year 1 = (Current Year Projected Discharges under 23,000 – 1149) * $200
Discharge related amount for Year 2 = (Year 2 projected discharges under 23,000 – 1149) * $200
Discharge related amount for Year 3 = (Year 3 projected discharges under 23,000 – 1149) * $200
Discharge related amount for Year 4 = (Year 4 projected discharges under 23,000 – 1149) * $200

	Per Discharge Amount	Projected Total Discharges	Disallowed Discharges	Allowable Discharges	Amount
Year 1	$200	8,179	1,149	7,030	$1,406,000
Year 2	$200	8,128	1,149	6,979	$1,395,800
Year 3	$200	8,078	1,149	6,929	$1,385,800
Year 4	$200	8,028	1,149	6,879	$1,375,800
Total Discharge Related Amount					**$5,563,400**

Table 27 - Alternate Hospital Calculation Total Discharge Amount Example

Step 3 (Year 1): Calculate the Initial EHR Amount for Four Years

The Initial Amount is = a base amount of $2,000,000 + the total discharge related amount for each year.

Calculate Initial Amount	Year 1	Year 2	Year 3	Year 4
Base Amount	$2,000,000	$2,000,000	$2,000,000	$2,000,000
Discharge Related Amount	$1,406,000	$1,395,800	$1,385,800	$1,375,800
Aggregate EHR Amount	**$3,406,000**	**$3,395,800**	**$3,385,800**	**$3,375,800**

Table 28 - Alternate Hospital Calculation Aggregate EHR Amount Example

Step 4 (Year 1): Apply the Medicaid Transition Factor for Each of the Four Years

Transition Factor Year 1 = 1.00
Transition Factor Year 2 = 0.75
Transition Factor Year 3 = 0.50
Transition Factor Year 4 = 0.25

	Year 1	Year 2	Year 3	Year 4
Aggregate EHR	$3,406,000	$3,395,800	$3,385,800	$3,375,800
Transition Factor	1.00	0.75	0.50	0.25
Applied Amount	**$3,406,000**	**$2,546,850**	**$1,692,900**	**$843,950**

Table 29 - Alternate Hospital Calculation Medicaid Transition Factor Example

Step 5 (Year 1): Calculate the Overall EHR Amount for Four Years

Add the Aggregate EHR Amount for all four years after application of the Transition Factor.

Payment Year	Payment Amount
Year 1	$ 3,406,400
Year 2	$ 2,546,850
Year 3	$ 1,692,900
Year 4	$ 843,950
Total	**$ 8,489,700**

Table 30 - Alternate Hospital Calculation Overall EHR Amount Example

Step 6 (Year 1): Calculate the Medicaid Share of the Overall EHR Amount for Four Years

The Medicaid share shall be calculated using the Base Year 12-month period from the hospital cost report data on MCRIF32.

The Medicaid inpatient bed-days data extracted from the specified data fields of the Medicaid Cost Report should not be all inclusive of the data in those individual cost report fields. To preserve the integrity of the data used in calculating the Medicaid Share, only the inpatient bed-days data specific to the defined criteria of the numerator and the denominator should be extracted from the appropriate Medicaid Cost Report data fields.

The Medicaid share will be calculated as the numerator (M + N) divided by the denominator (P times the product of Q minus R divided by Q)

− Numerator = **M + N**

M = Number of inpatient-bed days paid by Medicaid for individuals enrolled in Medicaid; Source is worksheet S-3, Part I, Col 5, Line 1 plus Lines 6 through 10 of the Base Year cost report.

The source of Medicaid inpatient bed days will change in the new CMS 2552-10 cost report effective for 12-month cost report periods beginning on or after May 1, 2010.

In the CMS 2552-10, the source for Medicaid inpatient bed-days will be Worksheet S- 3, Part I, Col 7, Line 1 plus Lines 8 through 12.

N = Number of paid inpatient-bed-days of Medicaid individuals enrolled in a managed care organization, a pre-paid inpatient health plan, or a pre-paid ambulatory health plan; and out-of-state days paid by Medicaid. The source is worksheet S-3, Part I, Col 5, Line 2 of the Base Year cost report.

The Source of Medicaid inpatient bed-days enrolled in an HMO will change in the new CMS 2552-10 cost report effective for 12-month cost report periods beginning on or after May 1, 2010. In the CMS 2552-10, the source for Medicaid HMO inpatient bed days will be Worksheet S-3, Part I, Col 7, Line 2.

− Denominator = **P *((Q − R) / Q)**

P = Total amount of EHs' inpatient bed days over selected period;

Source is worksheet S-3, Part I, Col 6, Line 1, plus Line 2 plus Lines 6 through 10 of the Base Year cost report.

The Source for total inpatient bed-days will change in the new CMS 2552-10 cost report effective for 12-month cost report periods beginning on or after May 1, 2010. In the CMS 2552-10, the source for total inpatient bed days will be Worksheet S-3, Part I, Col 8, Line 1 plus Line 2 plus Lines 8 through 12.

Q = Total amount of EH's charges; Source is worksheet C, Part I, Line 101, Col. 8 of the Base Year cost report.

The Source for total amount of eligible charges will change in the new CMS 2552-10 cost report effective for 12-month cost report periods beginning on or after May 1,

2010. In the CMS 2552-10, the source for total eligible charges will be Worksheet C,

Part I, Line 200, Col 8.

R = Charges attributable to charity care; Source is EH Attestation.

The Source of charges attributable to charity care will change in the new CMS 2552-

10 cost report effective for 12-month cost report periods beginning on or after May 1,

2010. In the CMS 2552-10, the source will be Worksheet S-10, Column 3, Line 20.

M	Total Medicaid Inpatient Bed Days	3,943
N	Total Medicaid Managed Care Inpatient Bed Days	217

Numerator (M+N)	Total Medicaid and Managed Care Inpatient Days	4,160
Q	Total Hospital Charges	421,467,997
R	Total Charity Care / Uncompensated Care Charges	10,000,000
Q minus R	Total Hospital Charges Less Charity Care Charges	411,467,997
Q-R/Q	Non - Charity Care Percentage	0.976273406
P	Total Hospital Inpatient Bed Days	34,433
Denominator	Total Non-Charity Hospital Inpatient Bed Days	33,616
Medicaid Share		**0.123750513**

Table 31 - Alternate Hospital Calculation Medicaid Share Example

Step 7 (Year 1): Calculate the Medicaid Aggregate EHR Incentive Payment Amount

Aggregate EHR payment = Medicaid Share (Step 6) * Overall EHR Amount (Step 5)

Overall EHR Amount for 4 Years	$8,489,700
Medicaid Share	0.123750513
Medicaid Aggregate EHR Incentive Payment Amount	**$1,050,605**

Table 32 - Alternate Hospital Calculation Aggregate Share Example

Step 8 (Year 1): Calculate the Annual EHR Incentive Payment Amount

Payments will be made over a three-year period for the Overall EHR amount with Year 1 payment at 50 percent, Year 2 payment at 40 percent, and Year 3 payment at 10 percent.

Payment Year	Percentage	Payment
Year 1 Payment	50%	$525,302
Year 2 Payment	40%	$420,242
Year 3 Payment	10%	$105,061
Year 4 Payment	0%	$ 0
Total		**$1,050,605**

Table 33 - Alternate Hospital Calculation Annual EHR Incentive Payment Example

NOTE: Year 2 and Year 3 payments will be recalculated when the third 12-month cost report is filed and will be adjusted accordingly to ensure that the total EHR Incentive Payments to be made are calculated using actual cost report data as filed for three consecutive 12-month cost reporting periods.

REVISED CALCULATION – YEAR 2

Step 1 (Year 2): Recalculate the Estimated Average Annual Growth Rate

The estimated average annual growth will be recalculated by averaging the annual percentage change in total patient discharges from the most recent three years of available data from the 12-month hospital cost reports (MCRIF32) prior to the year subsequent to the First Payment Year. The three full 12-month cost report periods necessary to perform this calculation must be the three full 12-month cost report periods subsequent to the new enrollment, CHOW, merger or divestiture as described above. The 12-month cost report period in which the new enrollment, CHOW, merger, or divestiture occurred may not be used. This information will be obtained from Total Patient discharge amounts in worksheet S-3, Part I, Line 12, Col 15 for the applicable FYs at the time of the calculation.

Example:

Total Patient discharges in worksheet S-3, Part I, Line 12, Col 15 for FY 2011, 2010 are shown in the chart below.

DGY3, DGY2, DGY1 will represent Discharge Growth 3 years ago, 2 years ago, and prior year respectively.
DGY3 = N/A
DGY2 = (Total Discharges FY10-Total Discharges FY09)/Total Discharges FY09
DGY1 = (Total Discharges FY11-Total Discharges FY10)/Total Discharges FY10
Average Annual Growth Rate = (DGY2+DGY1) / 2

Total Discharges	FYB	FYE	W/S S-3, Part I, Line 12, Col 15	Prior Year	Current Year	Increase / (Decrease)	Growth Rate
3rd Prior Year	N/A	N/A	N/A				
2nd Prior Year	10/1/2009	9/30/2010	8,230	N/A	N/A	N/A	N/A
1st Prior Year	10/1/2010	9/30/2011	8,179	8,230	8,179	(51)	-0.6197%
Base Year	10/1/2011	9/30/2012	8,365	8,179	8,365	(186)	-2.2741%
				Total Increase / (Decrease)			-1.6544%
				Average Annual Growth Rate			**0.8272%**

Table 34 - Revised Alternate Hospital Calculation Growth Rate Example

For Year 2 and Year 3 calculations, Base Year Data remains the same and only the Growth Rate is adjusted.

Step 2a: Recalculate Projected Total Discharges

North Carolina will use the recalculated Average Annual Growth Rate from Step 1 (Year 2) and apply it to the Year 1 (Base Year) discharges to recalculate and project Total Discharges for Year 2, Year 3, and Year 4. Projected Discharge figures will be rounded to the nearest whole number.

Current Year – The Data Source is worksheet S-3 Part 1, Line 12, Col. 15
        Example: 8,179 Base Year Total Discharges

Year 2 Projected = [Number of discharges in Current Year * (1 + Average Annual Growth Rate)]
        Example: [8,179 * (1 + 0.008272)] = 8,247

Year 3 Projected = [Year 2 Projected * (1 + Average Annual Growth Rate)]
        Example: [8,247 *(1 + 0.008272)] = 8,315

Year 4 Projected = Year 3 Projected * (1+ Average Annual Growth Rate)

Example: [8,315 * (1 + 0.008272)] = 8,384

Step 2b (Year 2): Re-Calculating the Total Discharge Related Amount

The Overall EHR Amount includes a discharge related amount of an additional $200 per projected discharges between 1,150 and 23,000 discharges. No amount is calculated for discharges prior to the 1,150th discharge or for discharges after the 23,000th discharge.

The following formula will be utilized to calculate the discharge related amount for years 1 through 4.

Discharge related amount for Year 1 = (Current Year Projected Discharges under 23,000 – 1149) * $200
Discharge related amount for Year 2 = (Year 2 projected discharges under 23,000 – 1149) * $200
Discharge related amount for Year 3 = (Year 3 projected discharges under 23,000 – 1149) * $200
Discharge related amount for Year 4 = (Year 4 projected discharges under 23,000 – 1149) * $200

	Per Discharge Amount	Projected Total Discharges	Disallowed Discharges	Allowable Discharges	Amount
Year 1	$200	8,179	1,149	7,030	$1,406,000
Year 2	$200	8,247	1,149	7,098	$1,419,600
Year 3	$200	8,315	1,149	7,166	$1,433,200
Year 4	$200	8,384	1,149	7,235	$1,447,000
Total Discharge Related Amount					**$5,705,800**

Table 35 - Revised Alternate Hospital Calculation Total Discharge Amount Example

Step 3 (Year 2): Recalculate the Initial EHR Amount for 4 Years

The Initial Amount is = a base amount of $2,000,000 + the total discharge related amount for each year.

Calculate Initial Amount	Year 1	Year 2	Year 3	Year 4
Base Amount	$2,000,000	$2,000,000	$2,000,000	$2,000,000
Calculate Initial Amount	**Year 1**	**Year 2**	**Year 3**	**Year 4**
Discharge Related Amount	$1,406,000	$1,419,600	$1,433,200	$1,447,000
Aggregate EHR Amount	**$3,406,000**	**$3,419,600**	**$3,433,200**	**$3,447,000**

Table 36 - Revised Alternate Hospital Calculation Aggregate EHR Amount Example

Step 4 (Year 2): Re-Apply the Medicaid Transition Factor for Each of the 4 Years

Transition Factor Year 1 = 1.00
Transition Factor Year 2 = 0.75
Transition Factor Year 3 = 0.50
Transition Factor Year 4 = 0.25

	Year 1	Year 2	Year 3	Year 4

Aggregate EHR	$3,406,000	$3,419,600	$3,433,200	$3,447,000
Transition Factor	1.00	0.75	0.50	0.25
Applied Amount	**$3,406,000**	**$2,564,700**	**$1,716,600**	**$861,750**

Table 37 - Revised Alternate Hospital Calculation Medicaid Transition Factor Example

Step 5 (Year 2): Recalculate the Overall EHR Amount for 4 Years

Add the Aggregate EHR Amount for all four years after application of the Transition Factor.

Payment Year	Payment Amount
Year 1	$ 3,406,400
Year 2	$ 2,564,700
Year 3	$ 1,716,600
Year 4	$ 861,750
Total	**$ 8,549,050**

Table 38 - Revised Alternate hospital Calculation Overall EHR Amount Example

Step 6 (Year 2): Medicaid Share of the Overall EHR Amount for Four Years

The Medicaid share calculation shall use the same base year cost report data as the Year 1 calculation; therefore, the Medicaid share remains unchanged from the Year 1 calculation.

Step 7 (Year 2): Recalculate the Medicaid Aggregate EHR Incentive Payment Amount

Aggregate EHR payment = Medicaid Share (Step 6 from Year 1) * Overall EHR Amount (Step 5, Year 2)

Overall EHR Amount for 4 Years	$8,549,050
Medicaid Share	0.123750513
Medicaid Aggregate EHR Incentive Payment Amount (to be paid over a 3-year period)	**$1,057,949**

Table 39 - Revised Alternate Hospital Calculation Aggregate Share Example

Step 8 (Year 2): Recalculate the Annual EHR Incentive Payment Amount

Payments will be made over a three-year period for the Overall EHR amount with Year 1 payment at 50 percent, Year 2 payment at 40 percent, and Year 3 payment at 10 percent.

Payment Year	Percentage	Payment
Year 1 Payment	50%	$528,974
Year 2 Payment	40%	$423,180
Year 3 Payment	10%	$105,795

Year 4 Payment	0%	$0	
Total		**$1,057,949**	

Table 40 - Revised Alternate Hospital Calculation Annual EHR Incentive Payment Example

Step 9 (Year 2): Calculation Revision in Year 2 based on Additional Full Year of Cost Report Data

	Year 1		
Prior Calculation for Medicaid EHR Payment	$525,302		
Revised Calculation for Medicaid EHR Payment	$528,974		
Difference to Apply to Year 2	**$3,672**		
	Calculation	**Revision**	**Payment**
Year 1 Payment	$525,302	$-	$525,302
Year 2 Payment	$423,180	$3,672	$426,852
Year 3 Payment	$105,795	$-	$105,795
Total Payment			**$1,057,949**

Table 41 - Revised Alternate Hospital Calculation Example

C.5.3.3 Adjustments to EHR Incentive Payments Received by Eligible Hospitals

North Carolina Medicaid shall recalculate and adjust EHR Incentive Payments received by EHs under the following circumstances:

- When recalculation and adjustment is required for Year 2 and Year 3 Payments in accordance with the Alternate Payment Calculation (*Section C.5.3.1: Standard Payment Calculation*); and,
- Upon discovery of any errors, omissions, or ineligible data submitted by the EH in the attestation that was utilized by North Carolina Medicaid to calculate the original EHR Incentive Payment amount received by the EH.

Adjustments to the original calculation of the EHR Incentive Payment amount received by the EH will be based upon the corrected cost report data relevant to the original payment calculation that covers the same full 12-month cost reporting periods pertinent to the original calculation.

Adjustment amounts determined to be an overpayment of the AIU incentive payment shall be recovered by North Carolina Medicaid from the EH. Adjustment amounts determined to be an underpayment of the original EHR Incentive Payment will be disbursed by North Carolina Medicaid to the EH.

All EHs are subject to audit and verification of meeting eligibility requirements. Hospitals who have received an EHR incentive payment that are subsequently found ineligible shall have all ineligible payments immediately recovered.

All EHs are subject to audit and verification of meeting MU criteria. All MU audits were conducted by CMS until plans for EH audits were included in NC's Audit Strategy update, which was approved January 23, 2019. For

program years 2015-2017, audits were conducted for a random sample of 10 percent of EHs not previously selected for post-payment audit by Medicare.

C.5.4 Payment Process

Providers are eligible to be paid after verifications for registration, patient volume, AIU attestation, MU attestation, other eligibility requirements, and final CMS clearance are complete. The payment process consists of multiple checks, communications, and coordination between systems and groups.

C.5.4.1 Payment Assignment

EPs have the option of designating an alternate payee (other than themselves) provided the payee is either an employer or another organization with which the EP has a business financial relationship. EPs will designate a payee NPI in the CMS R&A during CMS registration.

EPs may update their payee designation any time in the program year before payment occurs by updating the CMS R&A, withdrawing their NC-MIPS attestation (if already submitted), confirming the new payee NPI that has pre-populated in the NC-MIPS Portal after the B-6 transaction, and resubmitting their electronic and signed attestations.

At this time, North Carolina has made the policy choice not to designate an entity promoting the adoption of CEHRT for the assignment of five percent of any EP's individual EHR incentive payment. EPs are free to make any such payments on their own after the state has issued a payment to them or their assignee.

C.5.4.2 Payments under Managed Care

Legislation passed in 2011 required NC DHHS to restructure the management responsibilities for the delivery of services to individuals with mental illness, intellectual and other developmental disabilities, and substance abuse disorders through the 1915 (b)/(c) Medicaid Waiver. The goal of the legislation was to establish a system that is capable of managing public resources available for mental health, intellectual and other developmental disabilities and substance abuse services, including federal block grant funds, federal funding for Medicaid and Health Choice, and all other public funding sources.

North Carolina has utilized a managed care delivery system called Piedmont Behavioral Health (PBH) since April 2005. The statewide expansion of the 1915 (b)/(c) Waiver builds on this PBH model. PBH's managed care model includes a 1915(b)-waiver program called Piedmont Cardinal Health Plan (PCHP). This capitated managed care arrangement is a Pre-paid Inpatient Health Plan, since it includes coverage for inpatient as well as outpatient mental health services. Additionally, a 1915(c)-waiver program, Innovations Waiver, exists as a Home- and Community-Based Services capitated program for individuals with intellectual or developmental disabilities.

The MH/DD/SA services for Medicaid recipients and the uninsured in NC will be managed by 11 LMEs that will function as Managed Care Organizations (MCO) based upon the pilot model created by DHHS and PBH. Implementation was staged in tiers which began in October 2011 and the last set of LME–MCOs began operation in 2013. State law required the transition of the entire state to the 1915 (b)/(c) Medicaid Waiver by July 1, 2013.

The Final Rule did not extend eligibility to all the behavioral healthcare providers operating under the PBH model. Those possibly qualifying as EPs would include physicians with a psychiatric specialty and Certified Nurse Practitioners. Hospitals paid out of the capitated funds through a PHIP would receive normal fee for service amounts as payment for covered beneficiaries.

42 CFR Part 438.6 requires that "contracts with incentive arrangements may not provide for payment in excess of 105 percent of the approved capitation payments attributable to the enrollees or services covered by the incentive

arrangement, since such total payments will not be considered to be actuarially sound." NC Medicaid does not have contracts with individual providers under its managed care arrangements. While individual physicians and nurse practitioners practicing with managed care entities may attest under the EHR Incentive Program and receive incentive payments, the managed care model does not include the payment of any capitated managed care fees to individual practitioners. The NC Medicaid EHR Incentive Program also does not include payments to managed care entities since they are not eligible providers. Therefore, no risk exists for NC Medicaid to be in conflict with the requirements of 42 CFR 438.6.

C.5.4.3 State Business Rules/Payment Environment

After Program staff have completed validation checks on EP attestations, all determinations of qualification for a payment are reviewed again by the provider relations lead to ensure all conditions for payment have been met. If there are issues in verifying data and determining qualification and time allows prior to the close of the program year, the provider relations lead performs outreach to seek further information so a determination of "qualified" or "not qualified" can be reached. If no issues are found, the Program requests CMS approval for payment. Upon CMS approval, the list of EPs approved to receive payments is pulled from the NC-MIPS2 database, reviewed by the Program's budget specialist, then forwarded to NCTracks for processing of payment. EPs typically receive payment through Electronic Funds Transfer (EFT) 1-2 weeks later. Upon payment, a detailed payment report is returned and stored in NC-MIPS, and reports of paid EPs may be pulled from the NC-MIPS2 database.

The state takes many precautions to ensure that incentive payments are accurate and appropriate. The Attestation Validation Portal (AVP) is designed to provide a full audit trail of all information and decisions regarding eligibility. Incentive payment calculations for EHs are included in this SMHP for CMS and public reference.

The state strives to make payments within 45 days of successful attestation in accordance with CMS policy. However, processing attestations and issuing payments may take significantly longer during high-volume periods such as the months leading up to the close of the program year. Also, if faced with cash flow limitations; it is possible, that these limitations could delay payments. The Program's budget specialist works with the Controller's office to define strategies that will reduce the risk of payment delays. In the case that an EP needs to include Medicaid encounter volumes from other states, a delay in payment could occur; these requests will be handled on a case-by-case basis.

C.5.5 Request for Federal Reimbursement

The NCTracks payment logic uses unique cost center codes to ensure expenditures are drawn from appropriate funding sources. Incentive payments made to EPs are allocated to the same account within the accounting structure, which has a Financial Responsibility Center (FRC) code indicating 100 percent FFP. Likewise, invoices for contractual services are coded to, and paid from, specific cost centers created to reflect the appropriate funding source and 90/10 FFP. These unique codes assure that all fund requests from CMS are correct and documented.

Federal reporting through the CMS-64 includes all the EHR Incentive Program expenditure reporting, while the CMS-37 includes all projected EHR Incentive Program funding needs.

C.6 Appeals

There are three types of appealable actions for providers participating in the EHR Incentive Program:

- Denial of provider's eligibility to participate in the EHR Incentive Program;
- Denial or adjustment of incentive payments for EHs or EPs; and,

- Recoupment of part or all of incentive payments from EPs due to audits indicating non-compliance with MU criteria.

Any EP who attested before the close of the program year can appeal a denial of her/his eligibility for payment to prove that the attestation submitted as of the close of the program year did in fact demonstrate that s/he met all eligibility requirements and did meaningfully use CEHRT.

Recoupments due to audit are described in the Program's Audit Strategy, which is submitted separately from the SMHP.

EHR Incentive Program appeals adhere to the same process as other Medicaid appeal proceedings, following the requirements as outlined in the North Carolina Administrative Code (NCAC), Sections 10A NCAC 22F - Program Integrity (PI), 10A NCAC 22J - Title XIX Appeals Procedures and 10A NCAC 22N - Provider Enrollment.

The Appeals/Hearing process for the three types of appeal processes are presented in below. Note that EH audits have been completed and information for appeals for EHs is included only as historical reference.

Appeal Processes	Denial or Adjustment of Incentive Payments for EHs	Non-Compliance with AIU Requirements or Meaningful Use Criteria	Provider Eligibility Denial
Reconsideration Review of NC Medicaid Action	An authorized representative of a Medicaid Eligible Hospital (EH) may request a reconsideration review upon receipt of Final Notification of **Medicaid EHR incentive payment denial or adjustment** as a result of NC Medicaid's determination that the EH does not meet all applicable requirements in subparts A and D of Part 495 of Title 42 of the Code of Federal Regulations. Final Notification means the letter sent after NC Medicaid's monitoring, verification, or auditing process is complete. The Final Notification identifies the reason(s) for a payment denial or adjustment.	An EP or an authorized representative of an EH may request a reconsideration review upon receipt of Final Notification of NC Medicaid's determination that they have **not satisfactorily demonstrated that they have met all of the required criteria to be deemed as having adopted, implemented, or upgraded certified EHR technology, as defined in 42 CFR 495.302 or have not satisfactorily demonstrated that they have met all of the required criteria necessary to be deemed a meaningful user of certified EHR technology, as defined in 42 CFR 495.4, during the EHR reporting period.** Final Notification means the letter sent after NC Medicaid's monitoring, verification, or auditing process is complete and which identifies the efforts to adopt, implement or upgrade	An EP or authorized representative of an EH may request a reconsideration review upon receipt of final notification of NC Medicaid's determination that an **EP or EH does not meet all provider enrollment eligibility criteria, consistent with 42 CFR 495.304 and 495.306, upon enrollment and re-enrollment to the Medicaid EHR payment incentive program.** Final Notification means the letter sent after NC Medicaid's verification process is complete and which identifies the eligibility criteria that NC

Appeal Processes	Denial or Adjustment of Incentive Payments for EHs	Non-Compliance with AIU Requirements or Meaningful Use Criteria	Provider Eligibility Denial
		or the applicable meaningful use objectives and associated measures that could not be validated by NC Medicaid or CMS. Hospitals deemed MU non-compliant by CMS will be deemed MU non-compliant by the NC Medicaid EHR Incentive Program.	Medicaid could not verify.
Time Limit to Submit Request to Hearing Officer	The EH's request for a reconsideration review must be received by the NC Medicaid Hearing Officer within 30 calendar days of Final Notification. Requests received in excess of 30 days are considered as an improper filing and are denied. Request must be signed by an authorized representative of the EH.	The request must be received from the EP or authorized representative of the EH by DHHS Hearing Officer within 15 calendar days of Final Notification. Requests received in excess of 15 days shall be considered as an improper filing and will be denied. Request must be signed by the EP or authorized representative of the EH.	The request must be received by DHHS Hearing Officer within 15 calendar days of Final Notification. Requests received in excess of 15 days shall be considered as an improper filing and will be denied. Request must be signed by the EP or authorized representative of the EH.
Scheduling Review Conference	Upon receipt of a timely request for a reconsideration review, and in the event that any informal negotiations are not successful, NC Medicaid arranges a time and date with the EH for the reconsideration review.	Upon receipt of a timely request for a reconsideration review, the EP or EH has 14 days to submit their written argument proving the attestation submitted prior to the close of the program year demonstrated that they adopted, implemented or upgraded certified EHR. Upon receipt of a timely request for a reconsideration review, the EP has 14 days to submit their written argument proving the attestation submitted prior to the close of the program year	Upon receipt of a timely request for a reconsideration review, the EP or EH has 14 days to submit their written argument proving the attestation submitted prior to the close of the program year demonstrated that they met all eligibility requirements and why the Program's findings and denial of enrollment in the

Appeal Processes	Denial or Adjustment of Incentive Payments for EHs	Non-Compliance with AIU Requirements or Meaningful Use Criteria	Provider Eligibility Denial
		demonstrated that they met required meaningful use objectives.	Medicaid EHR Incentive Program were not justified.
Notice of Due Date for Written Argument; Supporting Documentation; Extensions	The NC Medicaid hearing officer notifies the EH through a letter that the EH has 14 calendar days to submit a written argument refuting the findings of NC Medicaid and that failure to submit requested documentation could be cause for dismissal of the request. All requests for extensions must be received in writing prior to the due date.	The DHHS hearing officer notifies the EH or EP through a letter that the EH or EP has 14 calendar days to submit the written argument refuting the Program's decision and that failure to submit requested documentation could be cause for dismissal of the request. All requests for extensions must be received in writing prior to the due date.	The DHHS hearing officer notifies the EH or EP through a letter that the EH or EP has 14 calendar days to submit the written argument refuting the Program's decision and that failure to submit requested documentation could be cause for dismissal of the request. All requests for extensions must be received in writing prior to the due date.
Reconsideration Review and Administrative Decision Letter Notice of Right to Request Contested Case Hearing pursuant to N.C.G.S. 150B-22.	After the Reconsideration Review, a Decision is communicated to the provider in a Decision Letter within 30 days of the date of the Reconsideration Review. The Letter outlines each of the EH's or EP's appeal issues and the hearing officer's determination of each issue.		
Filing a Contested Case Hearing	If the EH or EP disagrees with the decision, the provider has the option of appealing to the Office of Administrative Hearings. Filings must be made within 60 days of the date the decision letter was placed in the mail to the last address provided by the EH or EP to the Medicaid agency in accordance with G.S. 150B-23.		

Appeal Processes	Denial or Adjustment of Incentive Payments for EHs	Non-Compliance with AIU Requirements or Meaningful Use Criteria	Provider Eligibility Denial
Notice of Contested Case and Assignment	Once the petition has been filed, a Notice of Contested Case and Assignment is sent to all parties by the Office of Administrative Hearings. This notice shows the name of the Administrative Law Judge (ALJ) who has been assigned to the case and requires that NC Medicaid submit any documentation which caused the filing of the contested case.		
Notice of Hearing	Not less than 15 days prior to the hearing, the EP or EH receives a Notice of Hearing. This Notice is sent by certified mail to all parties and establishes the time, date, and location of the hearing.		
The Hearing	Each party has the right to testify on his or her own behalf. Each party may also offer documents in evidence and have witnesses testify, question opposing party's witnesses and explain or rebut evidence.		
Decision of ALJ	The ALJ's decision is made in writing and contains the findings of fact and conclusions of law. Under current law, the Office of Administrative Hearings prepares the official records and submits a copy of that record to the agency responsible for making the final agency decision. DHHS has submitted a request for a waiver of the single state agency requirement that will allow OAH to make final agency decisions on behalf of the Medicaid agency. If that waiver is approved, both parties to the hearing (NC Medicaid and the EH or EP) would have the opportunity to request judicial review of any ALJ decision with which it disagreed.		
Final Agency Decision	Under current law, NC Medicaid makes the Final Agency Decision, but must adopt the ALJ's decision unless it is clearly contrary to the preponderance of the evidence. Before NC Medicaid issues a Final Decision, both Parties are given an opportunity to file exceptions and written arguments with NC Medicaid.		
Petition for Judicial Review	A party may appeal a Final Decision within 30 days after being served with a written copy of the Final Agency Decision by filing a Petition for judicial review in the Superior Court of Wake County or in the Superior Court of the county where the EP or EH resides.		

Table 42 - Appeals/Hearing Process

D. The State's HIT Roadmap

D.1 2011-2021

The NC Medicaid EHR Incentive Program, one of the major HIT initiatives in NC, hit the ground running in 2011 and has enjoyed continued success. The Program enrolled 6,158 participants in program years 2011 through 2016, and another 23 participated with NC for the first time in 2017-2020 after first participating in another state by 2016. These years were formative in the adoption of HIT and expansion of HIE connectivity and interoperability in North Carolina. Highlights from previous versions of the SMHP and future plans are listed below.

HIT Milestones and Highlights

2011

There were three main objectives which were carried out in 2011. Each played an important role in influencing EHR adoption. These objectives were:

- Implemented the NC Medicaid EHR Incentive Program in the first quarter of calendar year 2011.
- Partnered with the NC AHEC as NC's REC to encourage early adoption: REC staff served, and NC AHEC continues to serve, an incredibly important role in their hands-on assistance to the provider community across the state. NC Medicaid EHR Incentive Program staff participated in meetings and weekly office hours call with REC staff to address issues and challenges associated with EHR adoption and attestation for incentive payments.
- Multi-channel communication strategy: The NC Medicaid EHR Incentive Program developed and executed a preliminary Communication Plan toward the end of the year, including website improvements, regular articles in Medicaid provider bulletins and partner publications, outreach activities to partners and providers, and e-mail support to ensure better awareness of the program throughout NC and efficient handling of providers' questions and concerns.

2012

- A significant ramp up in provider awareness, participation, and incentive payments disbursed for the NC Medicaid EHR Incentive Program.
- Several steps laying the groundwork for HIE occurred.
    - A Master Services Agreement (MSA) between NC DHHS and NC HIE, establishing NC DHHS as a QO of the NC HIE, was executed.
    - The first Scope of Work (SOW) under this MSA included Medicaid's fair share of the development of NC HIE Core Services, establishment of NC DHHS and NC HIE reporting requirements, and detailed DHHS' utilization of the NC HIE's virtual QO services.
    - A resolution stating NC DHHS' intentions to champion HIE in its business processes was published.
    - The Program drafted NC Administrative Code with consensus of its stakeholder groups around exchange and CQM reporting requirements for providers participating in the NC Medicaid EHR Incentive Program.

2013

- Participation in the NC Medicaid EHR Incentive Program grew to 3,721 unique providers.
- The NC AHEC had enrolled over 5,144 primary care providers by 2013 and provided onsite support to primary care and specialty practices including assessing the practice; assisting in the selection of the most

appropriate EHR system; guidance on system implementation; guidance on security and risk assessments; and guidance on system optimization through meeting MU.

- NC ORH initiated a pilot program dedicated to helping FQHCs and RHCs meet the initial stages of Meaningful Use.

2014

- The NC Medicaid EHR Incentive Program continued to adapt NC-MIPS, program website, attestation guides, and tailored outreach to be in compliance with Stage 2 MU and the flex rule.
- NC ORH hired a dedicated full-time employee to provide technical assistance for telemedicine and telepsychiatry programs being developed across the state.
- NC OHIT hired a new director.
- The first NC hospitals went live with NC HIE's HISP/Direct Secure Messaging service, integrated directly into their Epic and Meditech EHR systems.

2015

- Participation in the NC Medicaid EHR Incentive Program grew to 5,064 unique providers.
- ORH began to align, to the extent possible, performance measures for quality of care required of its grantees providing primary care services with Uniform Data System (UDS) reporting standards.
- The North Carolina Health Information Exchange Authority (NC HIEA) was created to oversee and administer North Carolina's HIE.

2016

- The NC Medicaid EHR Incentive Program began accepting attestations for Modified Stage 2 MU.
- HIE was transferred from the Community Care of North Carolina (CCNC) / North Carolina Community Care Networks (N3CN) structure to the new statewide North Carolina Health Information Exchange Authority (NC HIEA).
- NC Broadband Infrastructure Information Office released the NC State Broadband Plan that included seven recommendations specific to broadband and telehealth.

2017

- The NC Medicaid EHR Incentive Program began accepting attestations for Stage 3 MU.
- NC Medicaid established a new contract with NC AHEC to continue assisting NC providers with HIT initiatives including support of the NC Medicaid EHR Incentive Program and MIPS.
- The NC HIEA received CMS funding to support cost-effective Medicaid provider onboarding to the NC HealthConnex.
- NC Opioid Action Plan was developed, which includes strategies that utilize HIT such as expanding use of NC's PDMP, NC Controlled Substances Reporting System (CSRS).

2018

- The NC Medicaid EHR Incentive Program began accepting attestations for Program Year 2018 Modified Stage 2 and Stage 3.
- NC Medicaid amended the SFY2018 contract with NC AHEC to continue assisting NC providers with HIT initiatives including support of the NC Medicaid EHR Incentive Program and MIPS.
- NC HealthConnex launched the NC Diabetes Specialized Public Health Registry, which supports attestation for Meaningful Use Stage 3 and Modified Stage 2 for eligible hospitals, eligible critical access hospitals, and eligible professionals as well as Medicare Quality Payment Program Advancing Care Information for eligible clinicians.

- NC began conversations with emPOWER and PULSE teams to explore participation in these projects.

2019

- The NC Medicaid EHR Incentive Program began accepting attestations for Program Year 2019 Stage 3 MU.
- NC Medicaid amended the SFY2019 contract with NC AHEC to continue assisting NC providers with HIT initiatives including support of the NC Medicaid EHR Incentive Program and MIPS through SFY2020.
- NC OHIT began working with ITD on plans for transitioning from HITECH to MES and participating in monthly calls led by NC's MES State Officer.

2020

- NC closed Program Year 2019 on April 30, 2020 and opened Program Year 2020 on May 1, 2020.
- NC Medicaid amended the SFY2020 contract with NC AHEC to continue assisting NC providers with HIT initiatives including support of the NC Medicaid EHR Incentive Program and MIPS through SFY2021.
- NC OHIT sent monthly de-identified planning Medicaid emPOWER reports to the NC Division of Public Health, Public Health Preparedness and Response Branch to enhance situational awareness of and support emergency planning for and public health response activities for Medicaid beneficiaries that rely upon select electricity-dependent durable medical equipment (DME), facility-based dialysis, oxygen tank services, at-home hospice services and home health services.
- NC OHIT aided leaders in data-based decision making in North Carolina's battle against the COVID-19 pandemic by analyzing survey responses to mitigate human error in reporting, tracking response rates, conducting targeted outreach, and managing the help desk for the COVID-19 Hospital Medical Surge Daily Survey. This survey provided regional and statewide situational awareness regarding hospital capacity within North Carolina by tracking COVID patient admissions, inpatient and ICU bed capacity, available ventilators and other relevant data.

2021

NC will continue to expand use of health information technology to improve outcomes and lower costs.

The NC HIEA will remain focused on onboarding providers serving the state-insured population through 2021 while HITECH funds remain available for this purpose, while simultaneously optimizing existing HIE features and completing the build of in-progress value-added features. The five-year strategy is still in progress, though the NC HIEA expects that the final months of 2021 will include continued onboarding efforts, optimization of analytic capabilities for NC DHHS/NC Medicaid (and possibly health care providers and other payers), and HIE access for payers and patients.

The NC Medicaid EHR Incentive Program began accepting attestations for Program Year 2021 on May 3, 2021. NC-MIPS will close at midnight on October 31, 2021. All Program Year 2021 incentive payments will be issued to providers by December 31, 2021. The Program will continue to staff a dedicated help desk to assist participants through final determinations of all Program Year 2021 attestations.

D.2 EHR Adoption

It is difficult to accurately predict the rate of CEHRT adoption, due to the many factors that contribute to a provider's adoption decision and timeline. There is no proven, widely-accepted model for projecting this provider behavior on the scale and precedence of the current endeavor. Below are some of NC's assumptions regarding adoption:

- Adoption among providers in rural areas will lag those in urban and suburban areas;
- For those who have already implemented an EHR, upgrades will follow in the first year or two;
- Adoption among providers affiliated with a hospital will generally precede adoption by providers who are independent;
- Providers affiliated with a hospital will lag adoption by that hospital; and,
- HIE will multiply the clinical practice benefits of EHRs; thus, EHR adoption will increase as HIE connectivity expands.

To participate in the NC Medicaid EHR Incentive Program, providers are required to have an ONC-certified EHR technology. Adoption of CEHRT in NC as measured by participation in the NC Medicaid EHR Incentive Program increased dramatically in the first five years of the Program.
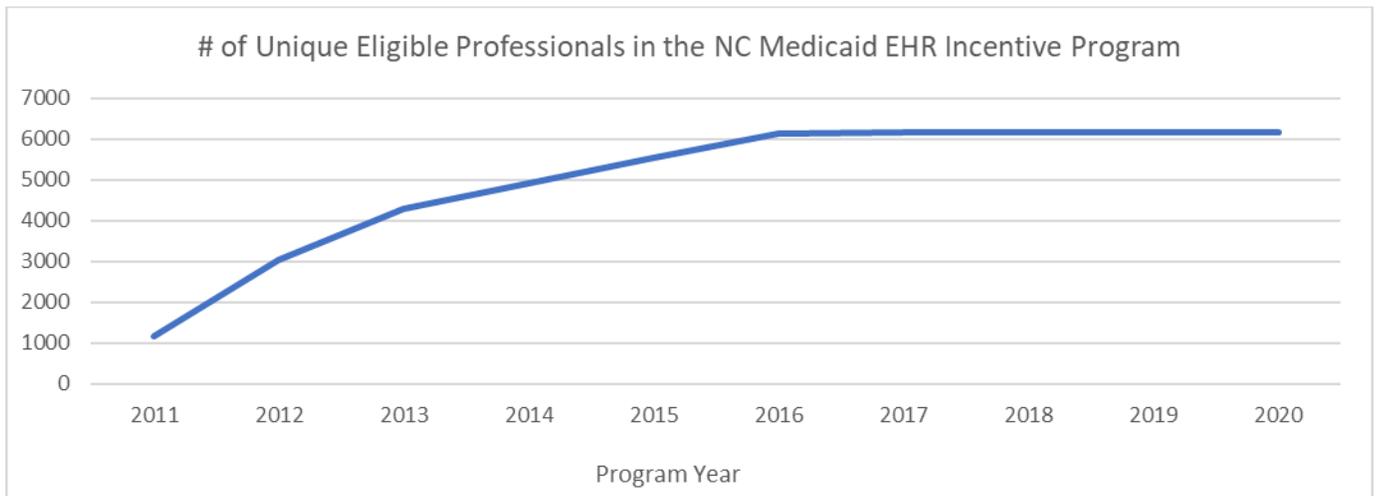
Figure 12 - NC CEHRT Adoption

There are 6,181 providers who have successfully attested for the Program. Of those 3,790 successfully attested for MU at least once, meaning they had a CEHRT and could demonstrate meaningfully using it.

D.3 Annual Benchmarks for Audit and Oversight

There are three types of benchmarks and tracking activities that monitor the successes and areas of improvement for NC Medicaid's HIT endeavors. These include:

- EHR Incentive Program audit activities, which can be found in the NC Medicaid EHR Program Audit Strategy
- Progress in adoption of CEHRT and exchange in NC in these areas:
  - EHR adoption rates among North Carolina providers;
  - Rates of attrition beyond first-year participation in the NC Medicaid EHR Incentive Program;
  - Number of authorized users and participants connected to the NC HIEA and number of transactions; and,
  - Number of direct mailboxes acquired through the NC HIEA and number of messages exchanged between providers.
- Medicaid EHR Incentive Program performance information, including provider participation and attrition rates and attestation processing rate from attestation to payment.

Tracking of Program activities includes audits. Program staff have 3 audits in progress as of May 25, 2020 and have completed 1,587 audits. Of the completed audits, 36 failed. See summary chart below.
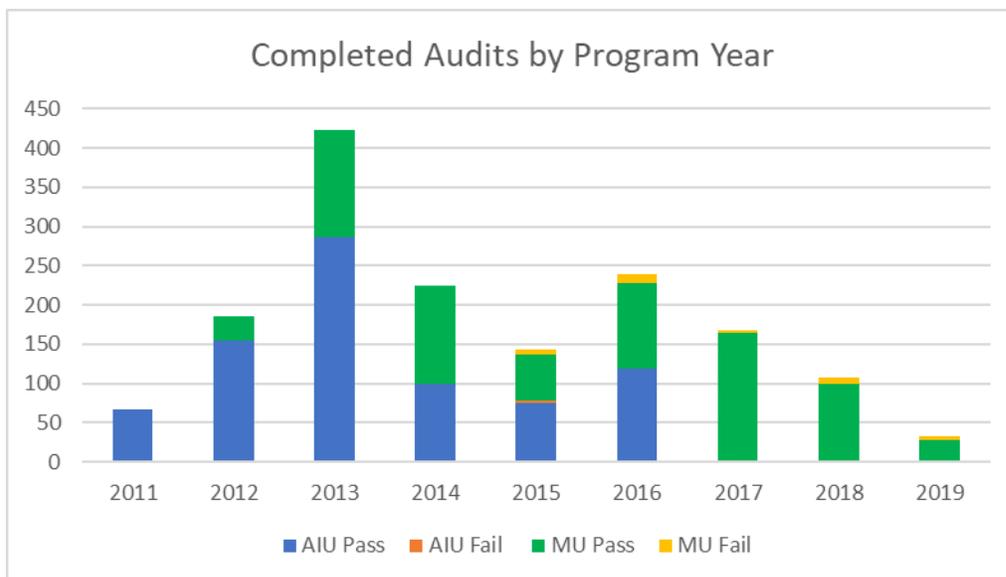
To improve customer service and audit outcomes, beginning with Program Year 2017, program staff emailed all providers after they received the incentive payment to remind them to retain all data supporting their attestation for six years. The email also includes a sample audit letter, so providers are familiar with process. It is hoped that this additional step will make the audit process smoother for the providers eventually selected for audit and that it will further reduce the number of failed audits. Additional details are available in the State's Audit Strategy, NC-2020-05-12-HITECH-Audit Strategy.pdf, approved June 11, 2020.

NC tracks participation and attrition rates to estimate CEHRT adoption and to plan targeted outreach to encourage return participation. The chart below shows number of successful attestations per program year and participation year by first program year of participation. Attrition patterns can be seen in each program year column. For example, of the 1,247 providers who attested in Program Year 2011, 427 returned for

payment year 2 in Program Year 2012, and of those, 266 returned for payment year 3 in Program Year 2013, and of those 118 returned in 2014, etc. About 18 percent participated in all available consecutive program years after the first year of participation.

		2011	2012	2013	2014	2015	2016
2011	Year 1	1247					
2012	Year 1		1917				
	Year 2	427					
2013	Year 1			1240			
	Year 2	310	1110				
	Year 3	266					
2014	Year 1				614		
	Year 2	42	114	437			
	Year 3	207	749				
	Year 4	118					
2015	Year 1					566	
	Year 2	41	62	105	255		
	Year 3	68	148	272			
	Year 4	138	489				
	Year 5	93					
2016	Year 1						574
	Year 2	20	27	46	44	234	
	Year 3	57	67	105	165		
	Year 4	116	188	213			
	Year 5	119	421				
	Year 6	86					
2017	Year 2	13	11	18	15	32	186
	Year 3	27	39	47	51	150	
	Year 4	58	68	88	132		
	Year 5	79	146	172			
	Year 6	97	353				
2018	Year 2	3	10	7	8	4	30
	Year 3	22	24	27	14	33	112
	Year 4	27	47	37	41	105	
	Year 5	60	67	74	105		
	Year 6	53	110	141			
2019	Year 2	1	0	0	2	1	3
	Year 3	1	2	2	3	5	13
	Year 4	5	8	7	9	15	42
	Year 5	15	13	9	16	36	
	Year 6	8	23	19	46		
2020	Year 2	1	1	3	1	6	4
	Year 3	3	1	2	6	1	9
	Year 4	3	6	2	6	7	17
	Year 5	7	10	12	10	16	18
	Year 6	18	7	20	27	27	

NC Medicaid also uses data to track and improve team performance. Examples of this include the NC Medicaid EHR Incentive Program's tracking metrics around attestation processing time. The state strives to make payments within 45 days of successful attestation. For program years 2016 and 2017, our average processing time was less than 45 days, 38 and 32 days respectively. In Program Year 2018, 99 percent of payments issued were issued within 45 days of attestation, and in Program Year 2019, 100 percent of payments were issued within 45 days. While acknowledging that processing time is a joint effort between program staff and attesting providers when there are issues with an attestation, program staff has put systems in place to proactively track attestations requiring provider action. Progress on processing time improvement is shown in the table below. The maximums reflect attestations with more complex issues, such as claims lag preventing patient volume validation and transaction problems.

Number of Days Between Attestation and Payment by Program Year

	Min	Median	Max
2012	13	81	399
2013	8	58	632
2014	19	63	290
2015	15	77	259
2016	17	38	431
2017	14	32	105
2018	13	23	68
2019	14	23	43
2020	3	19	50

Appendix 1 - Acronyms and Abbreviations

Acronyms and Abbreviations	
ACA	Accountable Care Act
ADT	Admission, Discharge and Transfer
AHEC	Area Health Education Centers
AHRQ	Agency for Healthcare Research and Quality
AIU	Adopt, Implement, Upgrade
ARRA	American Recovery and Reinvestment Act
AVP	Attestation Validation Portal
BCBSNC	Blue Cross Blue Shield of North Carolina
BTOP	Broadband Technology Opportunities Program
CAH	Critical Access Hospital
CAI	Community Anchor Institution
CBOC	Community Based Outpatient Clinic
CCD	Continuity of Care Document
CCHA	Coastal Carolinas Health Alliance
CCHIE	Coastal Connect Health Information Exchange
CCME	Carolinas Center for Medical Excellence
CCN	CMS Certified Number
CCNC	Community Care of North Carolina
CCNC-UP	CCNC for Uninsured Parents
CCofSP	Community Care of the Southern Piedmont
CCR	Central Cancer Registry
CDC	Centers for Disease Control
CDSA	Child Development Service Agency

CEHR	Children's Electronic Health Record
CHA	Cabarrus Health Alliance
CEHRT	Certified Electronic Health Record Technology
CHC	Community Health Center
CHIP	Children's Health Insurance Program
CHIPRA	Children's Health Insurance Program Reauthorization Act
CHOW	Change of Ownership
CIH	Cherokee Indian Hospital
CIP	Capital Improvement Program
CIS	Credentialing Information System
CMIS	Case Management Information System
CMS	Centers for Medicare & Medicaid Services
CMS R&A	CMS Registration and Attestation System
CPOE	Computerized Physician Order Entry
CQM	Clinical Quality Measure
CRH	Central Regional Hospital
CSC	Computer Sciences Corporation
DCHI	Duke University Center for Health Informatics
DDR	Daily Disease Reporting
Department	North Carolina Department of Health and Human Services
DHHS	North Carolina Department of Health and Human Services
DHB	Division of Health Benefits (NC Medicaid), formerly Division of Medical Assistance (DMA)
DMH/DD/SAS	Division of Mental Health/Developmental Disabilities/Substance Abuse Services

DPH	Department of Public Health
DRIVE	Data Retrieval and Information Validation Engine
DSOHF	Division of State Operated Healthcare Facilities
ED	Emergency Department
EFT	Electronic Funds Transfer
EH	Eligible Hospital
EHR	Electronic Health Record
EMSPIC	EMS Performance Improvement Center
EMR	Electronic Medical Record
EMS	Emergency Medical Services
e-NC	e-North Carolina Authority
EP	Eligible Professional
EPSDT	Early and Periodic Screening, Diagnostic and Treatment
ESB	Enterprise Service Bus
EVC	NC Medicaid's Enrollment, Verification, and Credentialing System/Center
FFP	Federal Financial Participation
FFS	Fee-For-Service
FIP	Facilities Investment Programs
FPL	Federal Poverty Level
FQHC	Federally Qualified Health Center
FRC	Financial Responsibility Center
FTE	Full-time Employee
GLRBI	Golden LEAF Rural Broadband Initiative
GUI	Graphical User Interface

HHS	Health and Human Services
HIE	Health Information Exchange
HIO	Health Information Organization
HIPAA	Health Insurance Portability and Accountability Act
HIS	Health Information System
HIT	Health Information Technology
HIT Plan	NC Medicaid Health Information Technology Plan
HITECH	Health Information Technology for Economic and Clinical Health Act
HIT Task Force	North Carolina HIT Strategic Planning Task Force
HO	Hearing Office
HP	Hewlett Packard
HPES	Hewlett Packard Enterprise System
HRSA	Health Resources Services Administration
HSIS	Health Services Information System
HWTFC	Health and Wellness Trust Fund
HWTFC	Health and Wellness Trust Fund Commission
I-APD	Implementation Advanced Planning Document
IC	Informatics Center
IDN	Integrated Delivery Networks
IDS	Increased Demand for Community Health Center Services
IHS	Indian Health Services
IPH	Institute for Public Health
IPIP	Improving Performance in Practice
IT	Information Technology

ITS	Information Technology Services
LHD	Local Health Department
LME	Local Management Entities
LMFT	Licensed Marriage and Family Therapist
MCNC	Microelectronics Center of North Carolina
MCO	Managed Care Organization
MFCU	Medicaid Fraud Control Unit
MITA	Medicaid Information Technology Architecture
MMIS	Medicaid Management Information System
MPN	Medicaid Provider Number
MSA	Master Service Agreement
MU	Meaningful Use
NC	North Carolina
N3CN	North Carolina Community Care Networks
NC EDSS	NC Electronic Disease Surveillance System
NC HIE	North Carolina Health Information Exchange
NC OEMS	The North Carolina Office of Emergency Services
NCAC	North Carolina Administrative Code
NCAS	North Carolina Accounting System
NCB-Prepared	North Carolina Bio-Preparedness Collaborative
NCCHCA	North Carolina Community Health Center Association
NC DETECT	NC Disease Event Tracking and Epidemiologic Collection Tool
NCHA	North Carolina Hospital Association
NCHESS	North Carolina Hospital Emergency Surveillance System

NCHEx	North Carolina Healthcare Exchange
NCHICA	North Carolina Healthcare Information and Communications Alliance
NCID	North Carolina Identifier
NCIR	North Carolina Immunization Registry
NC-MIPS	NC Medicaid Incentive Payment System
NCMS	North Carolina Medical Society
NCMSF	North Carolina Medical Society Foundation
NC PATH	North Carolina Program to Advance Technology for Health
NCREN	North Carolina Research and Education Network
NCRHC	North Carolina Rural Health Center
NCTN	North Carolina TeleHealth Network
NCTN-H	North Carolina TeleHealth Network - Hospitals
NC TRACKS	NC Transparent Reporting, Accounting, Collaboration, and Knowledge Management System
NHIN	Nationwide Health Information Network
NPI	National Provider Identifier
NTIA	National Telecommunications and Information Administration
NwHIN	Nationwide Health Information Network
OHIT	Office of Health Information Technology
OMMISS	Office of Medicaid Management Information System Services
ORH	Office of Rural Health (formerly Office of Rural Health and Community Care)
ONC	Office of the National Coordinator
OSC	Office of the State Chief Information Officer
PA	Physician Assistant

PAC	Picture Archiving and Communication
PAM	Patient Activation Measure
PBH	Piedmont Behavioral Health
PCG	Public Consulting Group
PCHP	Piedmont Cardinal Health Plan
PECOS	Provider Enrollment, Chain, and Ownership System
PI	Program Integrity
PMO	Project Management Office
PreMIS	Pre-Hospital Medical Information System
Program	North Carolina Medicaid EHR Incentive Program
PSO	Patient Safety Organization
QI	Quality Improvement
QIC	Quality Improvement Consultants
QIS	Quality Improvement Specialists
QMAF	Quality Measures and Feedback
QO	Qualified Organization
RAID	Redundant Array of Independent Disks
RCHD	Rowan County Health Department
REC	Regional Extension Center
RFP	Request for Proposal
RHC	Rural Health Center
RPMS	Resource Patient Management System
SCHIEx	South Carolina Health Information Exchange
SCHIP	State Children's Health Insurance Program

SCIO	State Chief Information Officer
SERCH	Southeast Regional HIT-HIE Collaboration
SFTP	Secure File Transfer Process
SHAP	State Health Access Program
SL	Session Law
SMARTT	State Medical Asset Resource Tracking Tool
SMHP	State Medicaid HIT Plan
SNG	Strategic Networks Group
SOA	Service-Oriented Architecture
SOW	Statement of Work
SPBC	Southern Piedmont Beacon Community
SS-A	State Self-Assessment
STEMI	EMS response time, acute trauma care, acute cardiac care
TIN	Taxpayer Identification Number
UBT	University Based Training
UNC-CH	University of North Carolina at Chapel Hill
UPI	Unique Patient Identifier
VA	Veterans Affairs
VistA	Veterans Administration Electronic Health Record
vSPR	Virtual Single Patient Record
WIC	Women, Infant, and Children
WNCHN	Western North Carolina Health Network

Appendix 2 - NC-MIPS Portal 2.0 Screenshots

Welcome to the NC-MIPS Portal

NC-MIPS is North Carolina's Medicaid EHR Incentive Payment System.

EPs new to NC: Providers who successfully participated at least once in the Medicaid EHR Incentive Program in another state are eligible to attest with the NC Medicaid EHR Incentive Program if they meet all program requirements and 1) have not already received six payments or a total of $63,750 2) did not switch from the Medicaid to the Medicare EHR Incentive Program prior to program year 2015. Please email NCMedicaid.HIT@dhhs.nc.gov, and include your NPI in the message, to get started.

NC-MIPS is now accepting attestations for Program Year 2021. Please see the Meaningful Use (MU) tab on our Program site for more details on attesting to MU in Program Year 2021. Please email the Program help desk for assistance.

If your NCID username has been changed on ncid.nc.gov since creating your First Time Account Setup with NC-MIPS, please use the NC-MIPS NCID Username Update tool to update your username in NC-MIPS to match your current NCID as it appears on ncid.nc.gov. NCID usernames will not automatically sync on NC-MIPS. The NC-MIPS NCID Username Update Tool will only allow you to update the username for NC-MIPS to update your NCID from ncid.nc.gov – it does not change your NCID or NCID password on ncid.nc.gov. If you need to update your NCID username and password with ncid.nc.gov, please visit their website. If you are unable to login to NC-MIPS, but you are able to log on to ncid.nc.gov, please try using the NCID username update tool to update your NCID username.

Sign In

NCID Username

testmips230

NCID Password

Login

First time Account Setup?
Forgot Username or Password?
NCID Username Update

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Contact Information

NC-MIPS Help Desk
NCMedicaid.HIT@dhhs.nc.gov

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Status

Provider Name John27780 Public27780
CMS Registration ID 1000000001
NPI 1234567890

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Program Year	Payment Year	Current Status	Payment Date	
2021	3	Ready to Attest		Proceed
2020	2	Paid	03/22/2021	View/Print
2019	2	Closed - No Attestation Submitted		
2018	2	Closed - No Attestation Submitted		
2017	2	Closed - No Attestation Submitted		
2016	2	Closed - No Attestation Submitted		
2015	2	Closed - No Attestation Submitted		
2014	2	Closed - No Attestation Submitted		
2013	1	Paid	06/11/2014	View/Print
2012	1	Closed - No Attestation Submitted		
2011	1	Attestation Denied		View/Print

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Assistance from NC AHEC

* indicates a required field

* 1) Have you received any assistance related to health information technology (HIT) and/or electronic health record (EHR) technology since January 1, 2021 from the North Carolina Area Health Education Centers (AHEC)?

○ Yes ○ No

The NC Area Health Education Centers Program (NC AHEC) provides individualized, on-site electronic health record (EHR) consulting tailored to meet a practice's specific needs at no cost to the practice. The NC AHEC staff can also assist providers in meeting Meaningful Use.

In addition to helping your practice meet Meaningful Use, the NC AHEC REC staff can also help select, implement and optimize EHRs, help the practice use EHRs to improve the quality of patient care, and assist the practice in attesting for an NC Medicaid EHR Incentive payment.

Area L AHEC - serving Edgecombe, Halifax, Nash, Northampton, and Wilson counties
Charlotte AHEC - serving Anson, Cabarrus, Cleveland, Gaston, Lincoln, Mecklenburg, Stanly, and Union counties
Eastern AHEC - serving Beaufort, Bertie, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Greene, Hertford, Hyde, Jones, Lenoir, Martin, Onslow, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, Washington, and Wayne counties
Greensboro AHEC - serving Alamance, Caswell, Chatham, Guilford, Montgomery, Orange, Randolph, and Rockingham counties
MAHEC - serving Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, and Yancey counties
Northwest AHEC - serving Alexander, Alleghany, Ashe, Avery, Burke, Caldwell, Catawba, Davidson, Davie, Forsyth, Iredell, Rowan, Stokes, Surry, Watauga, Wilkes, and Yadkin counties
SEAHEC - serving Brunswick, Columbus, Duplin, New Hanover, and Pender counties
Southern Regional AHEC and Duke AHEC - serving Bladen, Cumberland, Harnett, Hoke, Moore, Richmond, Robeson, Sampson, and Scotland counties
Wake AHEC - serving Durham, Franklin, Granville, Johnston, Lee, Person, Vance, Wake, and Warren counties

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Assistance from NC AHEC

* indicates a required field

* 1) Have you received any assistance related to health information technology (HIT) and/or electronic health record (EHR) technology since January 1, 2021 from the North Carolina Area Health Education Centers (AHEC)?

  ● Yes   ○ No

* 2) Since January 1, 2021, have you received general EHR consulting (e.g., selecting, implementing, or optimizing your EHR; enhancing practice workflows related to your EHR; assisting with health information exchange; etc.) from the NC AHEC?

  ○ Yes   ○ No

* 3) Since January 1, 2021, have you received assistance from the NC AHEC with understanding and/or meeting meaningful use or other program requirements for any of the following? Select all that apply.

No
Yes, for Medicaid EHR Incentive Program
Yes, for Merit-based Incentive Payment System (MIPS)
Yes, for Advanced Alternative Payment Models (APMs) ▼

  Please use "Ctrl" key to select multiple options from the list box.

* 4) Since January 1, 2021, have you received assistance from the NC AHEC with attesting for the NC Medicaid EHR Incentive Program?

  ○ Yes   ○ No

* 5) Since January 1, 2021, have you utilized any of the following services NC AHEC provides in support of NC HealthConnex? Select all that apply.

No
Training at your practice location on NC HealthConnex features and/or specific use cases
Virtual training on NC HealthConnex features and specific use cases
Video tutorials on using specific features of NC HealthConnex for patient care and/or quality improvement ▼

  Please use "Ctrl" key to select multiple options from the list box.

* 6) Which regional office of the NC AHEC assisted you?

  [Select ▼]

The NC Area Health Education Centers Program (NC AHEC) provides individualized, on-site electronic health record (EHR) consulting tailored to meet a practice's specific needs at no cost to the practice. The NC AHEC staff can also assist providers in meeting Meaningful Use.

In addition to helping your practice meet Meaningful Use, the NC AHEC REC staff can also help select, implement and optimize EHRs, help the practice use EHRs to improve the quality of patient care, and assist the practice in attesting for an NC Medicaid EHR Incentive payment.

Area L AHEC - serving Edgecombe, Halifax, Nash, Northampton, and Wilson counties
Charlotte AHEC - serving Anson, Cabarrus, Cleveland, Gaston, Lincoln, Mecklenburg, Stanly, and Union counties
Eastern AHEC - serving Beaufort, Bertie, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Greene, Hertford, Hyde, Jones, Lenoir, Martin, Onslow, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, Washington, and Wayne counties
Greensboro AHEC - serving Alamance, Caswell, Chatham, Guilford, Montgomery, Orange, Randolph, and Rockingham counties
MAHEC - serving Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, and Yancey counties
Northwest AHEC - serving Alexander, Alleghany, Ashe, Avery, Burke, Caldwell, Catawba, Davidson, Davie, Forsyth, Iredell, Rowan, Stokes, Surry, Watauga, Wilkes, and Yadkin counties
SEAHEC - serving Brunswick, Columbus, Duplin, New Hanover, and Pender counties
Southern Regional AHEC and Duke AHEC - serving Bladen, Cumberland, Harnett, Hoke, Moore, Richmond, Robeson, Sampson, and Scotland counties
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NCMedicaid.HIT@dhhs.nc.gov

Demographics

NC requires the provider's demographic data on file with NCTracks match the provider's demographic data received from CMS' Registration & Attestation System (Details).

Please note that the Payee NPI cannot be changed once the attestation has been approved and submitted for payment. If an NPI is not correct, please update it on **CMS' R&A System** before proceeding.

	Provider	Payee
NPI	1234567890	9876543210

If there are discrepancies between the information on file with CMS or NCTracks, please visit CMS' R&A System or NCTracks to update the information.

From CMS

First Name	John27780
Middle Name	Q
Last Name	Public27780
Address	27780 Main street27780 Raleigh NC 27609 6816

Does the information above from CMS match that which is on file with NCTracks?

○ Yes　○ No

[Previous]　　　　[Next]

Contact Information

* indicates a required field

Please complete the requested information for the primary contact person completing the attestation process for the provider.

* Contact Name [   ]
* Phone Number [   ]
* Email Address [   ]

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* **Effective Date**   [   ] 📅
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Practice Predominantly/Hospital-Based

* indicates a required field

* Did you practice predominantly (greater than 50% of all patient encounters during a 6-month period) at a Federally Qualified Health Center or Rural Health Clinic?

○ Yes   ○ No

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Practice Predominantly/Hospital-Based

* indicates a required field

* Did you practice predominantly (greater than 50% of all patient encounters during a 6-month period) at a Federally Qualified Health Center or Rural Health Clinic?

◉ Yes   ○ No

Please enter information for practice predominantly assertion:

* Select the date range [Select ▾]

* Start Date of 6-month Period [   ] 📅

End Date of 6-month Period

* Total Patient Encounters at FQHC/RHC [   ]

* Total Patient Encounters at all Locations [   ]

Your ratio of encounters at a Federally Qualified Health Center or Rural Health Clinic to your total patient encounters is   0%

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Practice Predominantly/Hospital-Based

* indicates a required field

* Did you practice predominantly (greater than 50% of all patient encounters during a 6-month period) at a Federally Qualified Health Center or Rural Health Clinic?

○ Yes ● No

* Did you provide 90% or more of your Medicaid-covered patient encounters in a hospital setting?

● Yes ○ No

* Can you demonstrate that you have funded the acquisition, implementation and maintenance of certified EHR technology?

● Yes ○ No

Please NOTE: You will be required to submit documentation/proof to support this, along with your signed attestation.

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Practice Predominantly/Hospital-Based

* indicates a required field

* Did you practice predominantly (greater than 50% of all patient encounters during a 6-month period) at a Federally Qualified Health Center or Rural Health Clinic?

○ Yes ● No

* Did you provide 90% or more of your Medicaid-covered patient encounters in a hospital setting?

○ Yes ● No

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Patient Volume

* indicates a required field

Enter the start and end dates of the consecutive 90-day period for your patient volume reporting period.

* Select the date range [Select ▼]
* Start Date [   ] 📅
* End Date [   ] 📅
* Patient Volume Reporting Method ⦿ Individual ◯ Group

You may use your individual patient volume from multiple practices where you worked to meet the threshold. It is not required to report on more than one practice.

* Do your patient volume numbers come from your work with more than one practice?

◯ Yes ◯ No

Enter the patient volume information for your selected 90-day period below. Add a separate line for each billing NPI if the practice used more than one during the 90-day period.

Medicaid patient volume from eligible billable services that were not billed or were not reimbursed ('zero-pay') should be included separately from Medicaid patient volume from paid claims. Enter the 'zero-pay' portion of your numerator in the 'zero-pay' column below.

Practice Name	Your Total Encounters at Practice
[ ]	[ ]

Practice's Billing NPI	Medicaid Encounters Billed under this NPI	Medicaid Enrolled Zero Pay Encounters
[ ]	[ ]	[ ]

Add another NPI for this Practice

Add Another Practice Name

Medicaid Patient Encounters (Numerator)   0
Total Patient Encounters (Denominator)   0
Medicaid Patient Volume Percentage (Medicaid / Total) 0%

1) When using individual methodology, the numerator and denominator should include only encounters where the EP was the attending or supervising provider. Did you enter only those encounters attributable to the individual EP in the numerator and denominator, NOT the patient volume numbers for the entire group?   ◯ Yes   ◯ No

2) An EP must report all NPI(s) under which encounters were billed during the 90-day reporting period from all locations on which the EP is reporting, even if one or more NPIs is no longer used. Did you report all NPI(s) under which the EP's encounters were billed during the 90-day reporting period, even those not currently in use?   ◯ Yes   ◯ No

3) A Medicaid encounter is defined as services rendered on any one day to an individual where Medicaid or a Medicaid demonstration project under Section 1115 of the Social Security Act paid for part or all of the service.

   a) Did you include in the numerator all encounters covered by Medicaid, even where Medicaid paid for only part of a service?   ◯ Yes   ◯ No

   b) Did you exclude from the Medicaid Encounters Billed under this NPI denied claims that were never paid at a later date?   ◯ Yes   ◯ No

4) Encounters included in the patient volume numbers must have occurred during the 90-day period attested to above, regardless of when any claims were submitted or paid. Are your patient volume numbers based on date of service and not date of claim or date of payment?   ◯ Yes   ◯ No

5) An encounter is one patient per provider per day and may be different from the number of claims. Do the numbers you entered represent encounters and not claims?   ◯ Yes   ◯ No

6) The denominator must include all encounters regardless of payment method. Did you include encounters in the denominator where services were provided at no charge?   ◯ Yes   ◯ No

7) If you had a different NPI (from the NPI you listed for the provider on the demographics screen) or more than one NPI during the 90-day period, enter that NPI here.   [   ]

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Patient Volume

* indicates a required field

Enter the start and end dates of the consecutive 90-day period for your patient volume reporting period.

* Select the date range Select
* Start Date
* End Date
* Patient Volume Reporting Method ○ Individual ● Group

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Enter the patient volume information for your selected 90-day period below. Add a separate line for each billing NPI if the group used more than one during the 90-day period.

Medicaid patient volume from eligible billable services that were not billed or were not reimbursed ('zero-pay') should be included separately from Medicaid patient volume from paid claims. Enter the 'zero-pay' portion of your numerator in the 'zero-pay' column below.

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Group Name	Number of Group Members During 90-day Period	Total Encounters for All Group Members

Group's Billing NPI	Medicaid Encounters Billed under this NPI	Medicaid Enrolled Zero Pay Encounters

Add another Group NPI

Medicaid Patient Encounters (Numerator)   0
Total Patient Encounters (Denominator)   0
Medicaid Patient Volume Percentage (Medicaid / Total) 0%

1) When using group methodology, the patient volume must include all patient encounters with both EPs and non-eligible provider types (e.g., RNs, phlebotomists). Did you include all encounters? ○ Yes ○ No

2) A Medicaid encounter is defined as services rendered on any one day to an individual where Medicaid or a Medicaid demonstration project under Section 1115 of the Social Security Act paid for part or all of the service.

a) Did you include in the numerator all encounters covered by Medicaid, even where Medicaid paid for only part of a service? ○ Yes ○ No

b) Did you exclude from the Medicaid Encounters Billed under this NPI denied claims that were never paid at a later date? ○ Yes ○ No

3) Encounters included in the patient volume must have occurred during the 90-day reporting period, regardless of when claims were submitted or paid. Are your reported encounters based on date of service and not date of claim or date of payment? ○ Yes ○ No

4) The denominator must include all encounters regardless of payment method. Did you include all encounters in the denominator where services were paid by Medicaid, by any payer other than Medicaid, self-paid, and provided at no charge? ○ Yes ○ No

5) An encounter is one patient per provider per day and may be different from the number of claims. Do the numbers you entered represent encounters and not claims? ○ Yes ○ No

6) If the group's reported encounters span more than one location and/or were billed with Medicaid under multiple NPIs, NC requires reporting of all NPIs associated with each location under which Medicaid claims were billed during the 90-day reporting period.

a) If you are reporting patient encounters from multiple locations, have you provided all associated NPIs? ○ Yes ○ No ○ N/A

b) During the 90-day reporting period, did the group have a different (outdated) billing NPI or more than one billing NPI? ○ Yes ○ No ○ N/A

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Patient Volume

* indicates a required field

Enter the start and end dates of the continuous 90-day period for your patient volume reporting period.

* **Select the date range** [Select ▼]
* **Start Date** [_____]
* **End Date** [_____]
* **Patient Volume Reporting Method** ⦿ Individual ○ Group

You may use your individual patient volume from multiple practices where you worked to meet the threshold. It is not required to report on more than one practice.

* **Do your patient volume numbers come from your work with more than one practice?**

○ Yes ○ No

Enter the patient volume information for your selected 90-day period below. Add a separate line for each billing NPI if the practice used more than one during the 90-day period.

Medicaid patient volume from eligible billable services that were not billed or were not reimbursed ('zero-pay') should be included separately from Medicaid patient volume from paid claims. Enter the 'zero-pay' portion of your numerator in the 'zero-pay' column below.

Practice Name	Your Total Encounters at Practice	
[_____]	[_____]	
Practice's Billing NPI	**Medicaid Encounters Billed under this NPI**	**Medicaid Enrolled Zero Pay Encounters**
[_____]	[_____]	[_____]

Add another NPI for this Practice
Add Another Practice Name

Medicaid Patient Encounters (Numerator)   0
Total Patient Encounters (Denominator)   0
Medicaid Patient Volume Percentage (Medicaid / Total) 0%

1) When using individual methodology, the numerator and denominator should include only encounters where the EP was the attending or supervising provider. Did you enter only those encounters attributable to the individual EP in the numerator and denominator, NOT the patient volume numbers for the entire group?   ○ Yes   ○ No

2) An EP must report all NPI(s) under which encounters were billed during the 90-day reporting period from all locations on which the EP is reporting, even if one or more NPIs is no longer used. Did you report all NPI(s) under which the EP's encounters were billed during the 90-day reporting period, even those not currently in use?   ○ Yes   ○ No

3) A Medicaid encounter is defined as services rendered on any one day to an individual where Medicaid or a Medicaid demonstration project under Section 1115 of the Social Security Act paid for part or all of the service.

    a) Did you include in the numerator all encounters covered by Medicaid, even where Medicaid paid for only part of a service?   ○ Yes   ○ No

    b) Did you exclude from the Medicaid Encounters Billed under this NPI denied claims that were never paid at a later date?   ○ Yes   ○ No

4) Encounters included in the patient volume numbers must have occurred during the 90-day period attested to above, regardless of when any claims were submitted or paid. Are your patient volume numbers based on date of service and not date of claim or date of payment?   ○ Yes   ○ No

5) An encounter is one patient per provider per day and may be different from the number of claims. Do the numbers you entered represent encounters and not claims?   ○ Yes   ○ No

6) The denominator must include all encounters regardless of payment method. Did you include encounters in the denominator where services were provided at no charge?   ○ Yes   ○ No

7) If you had a different NPI (from the NPI you listed for the provider on the demographics screen) or more than one NPI during the 90-day period, enter that NPI here.   [_____]

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Patient Volume

* indicates a required field

Enter the start and end dates of the continuous 90-day period for your patient volume reporting period.

* Select the date range	Select ▼
* Start Date	
* End Date	
* Patient Volume Reporting Method	○ Individual ⦿ Group

Enter the patient volume information for your selected 90-day period below. Add a separate line for each billing NPI if the group used more than one during the 90-day period.

Medicaid patient volume from eligible billable services that were not billed or were not reimbursed ('zero-pay') should be included separately from Medicaid patient volume from paid claims. Enter the 'zero-pay' portion of your numerator in the 'zero-pay' column below.

Group Name	Number of Group Members During 90-day Period	Total Encounters for All Group Members
Group's Billing NPI	**Medicaid Encounters Billed under this NPI**	**Medicaid Enrolled Zero Pay Encounters**

Add another Group NPI

Medicaid Patient Encounters (Numerator)	0
Total Patient Encounters (Denominator)	0
Medicaid Patient Volume Percentage (Medicaid / Total)	0%

1) When using group methodology, the patient volume must include all patient encounters with both EPs and non-eligible provider types (e.g., RNs, phlebotomists). Did you include all encounters?   ○ Yes ○ No

2) A Medicaid encounter is defined as services rendered on any one day to an individual where Medicaid or a Medicaid demonstration project under Section 1115 of the Social Security Act paid for part or all of the service.

a) Did you include in the numerator all encounters covered by Medicaid, even where Medicaid paid for only part of a service?   ○ Yes ○ No

b) Did you exclude from the Medicaid Encounters Billed under this NPI denied claims that were never paid at a later date?   ○ Yes ○ No

3) Encounters included in the patient volume must have occurred during the 90-day reporting period, regardless of when claims were submitted or paid. Are your reported encounters based on date of service and not date of claim or date of payment?   ○ Yes ○ No

4) The denominator must include all encounters regardless of payment method. Did you include all encounters in the denominator where services were paid by Medicaid, by any payer other than Medicaid, self-paid, and provided at no charge?   ○ Yes ○ No

5) An encounter is one patient per provider per day and may be different from the number of claims. Do the numbers you entered represent encounters and not claims?   ○ Yes ○ No

6) If the group's reported encounters span more than one location and/or were billed with Medicaid under multiple NPIs, NC requires reporting of all NPIs associated with each location under which Medicaid claims were billed during the 90-day reporting period.

a) If you are reporting patient encounters from multiple locations, have you provided all associated NPIs?   ○ Yes ○ No ○ N/A

b) During the 90-day reporting period, did the group have a different (outdated) billing NPI or more than one billing NPI?   ○ Yes ○ No ○ N/A

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Measure Reporting Period Page

* indicates a required field

EHR Certification Number: 0015E16KRU6FKF2

In Program Year 2021, providers must attest to Stage 3 using a 2015 Edition of certified EHR technology. Please check ONC's certified Health IT Product List to ensure your EHR meets all program requirements.

Please enter your 90-day MU reporting period date range.

* Start Date [   ] 🗓

* End Date   [   ] 🗓

* Is your CQM reporting period different from your MU reporting period?   ● Yes ○ No

Please enter your 90-day CQM reporting period date range.

* Start Date [   ] 🗓

* End Date   [   ] 🗓

Please enter all locations where you had encounters during the MU reporting period.

* Practice Name	* Address	* EPs individual encounters for the MU (not PV) reporting period	* CEHRT?
[ ]	[ ]	[ ]	○ Yes ○ No

Add a location

◄   ►

Percentage of encounters at a location with certified EHR technology: 0%

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Measure Navigation Home Page

Measure Set	Actions		Complete	Valid
Meaningful Use Objectives	Begin	Review	✖	✖
Clinical Quality Measures	Begin	Review	✖	✖
Percentage at location with CEHRT				✔

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Meaningful Use Objectives

Objective 1 of 8 - Protect Patient Health Information

* indicates a required field

Objective: Protect electronic protected health information (ePHI) created or maintained by the certified electronic health record technology (CEHRT) through the implementation of appropriate technical, administrative, and physical safeguards.

Measure: Conduct or review a security risk analysis in accordance with the requirements under 45 CFR 164.308(a)(1), including addressing the security (including encryption) of data created or maintained by CEHRT in accordance with requirements under 45 CFR 164.312(a)(2)(iv) and 45 CFR 164.306(d)(3), implement security updates as necessary, and correct identified security deficiencies as part of the provider's risk management process.

* Between January 1, 2021 and today, did you conduct or review a security risk analysis and implement security updates as necessary and correct identified security deficiencies?

○ Yes ● No

* I attest that I will complete my 2021 SRA prior to December 31, 2021.

○ Yes ○ No

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Meaningful Use Objectives

Objective 2 of 8 - Electronic Prescribing (eRx)

* indicates a required field

Objective:	Generate and transmit permissible prescriptions electronically.
Measure:	More than 60 percent of all permissible prescriptions written by the eligible professional (EP) are queried for a drug formulary and transmitted electronically using CEHRT.
Exclusions:	An EP may take an exclusion if any of the following apply:

- Writes fewer than 100 permissible prescriptions during the Meaningful Use (MU) reporting period; or
- Does not have a pharmacy within their organization and there are no pharmacies that accept electronic prescriptions within 10 miles of the EP's practice location at the start of her or his MU reporting period.

* Do either of these exclusions apply to you?

○ Yes   ● No

Patient Records: The provider is permitted, but not required, to limit the measure of this objective to those patients whose records are maintained using certified EHR technology.

* Please select whether the data used to support the measure was extracted from ALL patient records or only from patient records maintained using certified EHR technology.

○ This data was extracted from ALL patient records, not just those maintained using certified EHR technology.

○ This data was extracted only from patient records maintained using certified EHR technology.

* Numerator: [_____]

The number of prescriptions in the denominator generated, queried for a drug formulary, and transmitted electronically using CEHRT.

* Denominator: [_____]

Number of prescriptions written for drugs requiring a prescription in order to be dispensed other than controlled substances during the MU reporting period; or number of prescriptions written for drugs requiring a prescription in order to be dispensed during the MU reporting period.

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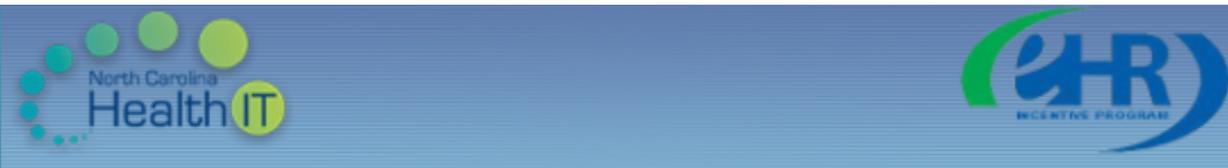
Meaningful Use Objectives

Objective 3 of 8 - Clinical Decision Support

* indicates a required field

Objective: Implement clinical decision support (CDS) interventions focused on improving performance on high-priority health conditions.

An EP must satisfy both measures for this objective through a combination of meeting the thresholds and exclusions.

Measure 1: Implement five CDS interventions related to four or more clinical quality measures (CQMs) at a relevant point in patient care for the entire MU reporting period. Absent four CQMs related to an EP's scope of practice or patient population, the CDS interventions must be related to high-priority health conditions.

Measure 2: The EP has enabled and implemented the functionality for drug-drug and drug-allergy interaction checks for the entire MU reporting period.

Measure 2 Exclusion: Any EP who writes fewer than 100 medication orders during the MU reporting period.

* Does this exclusion apply to you?
○ Yes   ● No

* Did you implement five clinical decision support interventions related to four or more CQMs at a relevant point in patient care for the entire MU reporting period?
○ Yes   ○ No

* Did you enable and implement the functionality for drug-drug and drug-allergy interaction checks for the entire MU reporting period?
○ Yes   ○ No

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Meaningful Use Objectives

Objective 4 of 8 - Computerized Provider Order Entry (CPOE)

* indicates a required field

Objective: Use CPOE for medication, laboratory, and diagnostic imaging orders directly entered by any licensed healthcare professional, credentialed medical assistant, or a medical staff member credentialed to and performing the equivalent duties of a credentialed medical assistant, who can enter orders into the medical record per state, local, and professional guidelines.

An EP must satisfy all three measures for this objective through a combination of meeting the thresholds and exclusions.

Measure 1: More than 60 percent of medication orders created by the EP during the MU reporting period are recorded using CPOE.

Measure 2: More than 60 percent of laboratory orders created by the EP during the MU reporting period are recorded using CPOE.

Measure 3: More than 60 percent of diagnostic imaging orders created by the EP during the MU reporting period are recorded using CPOE.

Measure 1 Exclusion: Any EP who writes fewer than 100 medication orders during the MU reporting period.

* Does this exclusion apply to you?
○ Yes ● No

Measure 2 Exclusion: Any EP who writes fewer than 100 laboratory orders during the MU reporting period.

* Does this exclusion apply to you?
○ Yes ● No

Measure 3 Exclusion: Any EP who writes fewer than 100 diagnostic imaging orders during the MU reporting period.

* Does this exclusion apply to you?
○ Yes ● No

Patient Records: The provider is permitted, but not required, to limit the measure of this objective to those patients whose records are maintained using certified EHR technology.

* Please select whether the data used to support the measure was extracted from ALL patient records or only from patient records maintained using certified EHR technology.

○ This data was extracted from ALL patient records, not just those maintained using certified EHR technology.

○ This data was extracted only from patient records maintained using certified EHR technology.

Measure 1: Medication
*Numerator 1:
[   ]
The number of orders in the denominator recorded using CPOE.

*Denominator 1:
[   ]
Number of medication orders created by the EP during the MU reporting period.

Measure 2: Laboratory
*Numerator 2:
[   ]
The number of orders in the denominator recorded using CPOE.

*Denominator 2:
[   ]
Number of laboratory orders created by the EP during the MU reporting period.

Measure 3: Diagnostic Imaging
*Numerator 3:
[   ]
The number of orders in the denominator recorded using CPOE.

*Denominator 3:
[   ]
Number of diagnostic imaging orders created by the EP during the MU reporting period.

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Meaningful Use Objectives

Objective 5 of 8 - Patient Electronic Access to Health Information

* indicates a required field

Objective: The EP provides patients (or patient-authorized representative) with timely electronic access to their health information and patient-specific education.

An EP must satisfy both measures for this objective through a combination of meeting the thresholds and exclusions.

Measure 1: For more than 80 percent of all unique patients seen by the EP:
(1) The patient (or the patient-authorized representative) is provided timely access to view online, download, and transmit her or his health information; and
(2) The provider ensures the patient's health information is available for the patient (or patient-authorized representative) to access using any application of their choice that is configured to meet the technical specifications of the Application Programming Interface (API) in the provider's CEHRT.

Measure 2: The EP must use clinically relevant information from CEHRT to identify patient-specific educational resources and provide electronic access to those materials to more than 35 percent of unique patients seen by the EP during the MU reporting period.

Measure 1 and Measure 2 Exclusion : An EP may take the exclusion for either measure, or both, if they have no office visits during the MU reporting period.

* Does this exclusion apply to you?
○ Yes   ● No

Measure 1 and Measure 2 Exclusion : An EP may take the exclusion for either measure, or both, if they conduct 50 percent or more of her or his patient encounters in a county that does not have 50 percent or more of its housing units with 4Mbps broadband availability according to the latest information available from the FCC on the first day of the MU reporting period.
NOTE: There are no counties in NC that are eligible for this exclusion.

* Does this exclusion apply to you?
○ Yes   ● No

*Measure 1 Numerator: [   ]
The number of patients in the denominator (or patient authorized representative) who are provided timely access to health information to view online, download, and transmit to a third party and to access using an application of their choice that is configured to meet the technical specifications of the API in the provider's CEHRT.

*Measure 1 Denominator: [   ]
The number of unique patients seen by the EP during the MU reporting period.

*Measure 2 Numerator: [   ]
The number of patients in the denominator who were provided electronic access to patient-specific educational resources using clinically relevant information identified from CEHRT during the MU reporting period.

*Measure 2 Denominator: [   ]
The number of unique patients seen by the EP during the MU reporting period.

If the action for Measure 2 occurred in a reporting period other than the one entered on the Measure Reporting Period Page, please report that here:
Start Date: [   ]
End Date: [   ]

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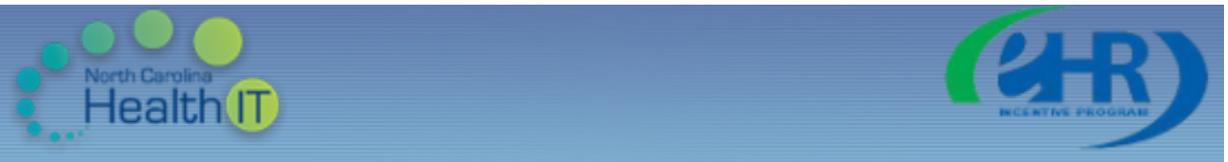
Meaningful Use Objectives

Objective 6 of 8 - Coordination of Care through Patient Engagement

* indicates a required field

Objective: Use CEHRT to engage with patients or their authorized representatives about the patient's care.

An EP must attest to all three measures and meet the threshold for two measures for this objective. If the EP meets the criteria for exclusion from two measures, they must meet the threshold for the one remaining measure. If they meet the criteria for exclusion from all three measures, they may be excluded from meeting this objective.

Measure 1: More than 5 percent of all unique patients (or their authorized representatives) seen by the EP actively engage with the EHR made accessible by the EP and either—
(1) View, download or transmit to a third party their health information; or
(2) Access their health information through the use of an Application Programming Interface (API) that can be used by applications chosen by the patient and configured to the API in the EP's CEHRT; or
(3) A combination of (1) and (2).

Measure 2: For more than 5 percent of all unique patients seen by the EP during the MU reporting period, a secure message was sent using the electronic messaging function of CEHRT to the patient (or the patient-authorized representative), or in response to a secure message sent by the patient or their authorized representative.

Measure 3: Patient generated health data or data from a nonclinical setting is incorporated into the CEHRT for more than 5 percent of all unique patients seen by the EP during the MU reporting period.

Measure 1, 2 and 3 Exclusion: An EP may take an exclusion for any or all measures if they have no office visits during the MU reporting period.

* Does this exclusion apply to you?
○ Yes ● No

Measure 1, 2 and 3 Exclusion: An EP may take an exclusion for any or all measures if they conduct 50 percent or more of their patient encounters in a county that does not have 50 percent or more of its housing units with 4Mbps broadband availability according to the latest information available from the Federal Communications Commission (FCC) on the first day of the MU reporting period.
NOTE: There are no counties in NC that are eligible for this exclusion.

* Does this exclusion apply to you?
○ Yes ● No

*Measure 1 Numerator:

The number of unique patients (or their authorized representatives) in the denominator who have viewed online, downloaded, or transmitted to a third party the patient's health information during the MU reporting period and the number of unique patients (or their authorized representatives) in the denominator who have accessed their health information through the use of an API during the MU reporting period.

*Measure 1 Denominator:

Number of unique patients seen by the EP during the MU reporting period.

If the action for Measure 1 occurred in a reporting period other than the one entered on the Measure Reporting Period Page, please report that here:

Start Date:

End Date:

*Measure 2 Numerator:

The number of patients in the denominator for whom a secure electronic message is sent to the patient (or patient-authorized representative) or in response to a secure message sent by the patient (or patient-authorized representative), during the MU reporting period.

*Measure 2 Denominator:

Number of unique patients seen by the EP during the MU reporting period.

If the action for Measure 2 occurred in a reporting period other than the one entered on the Measure Reporting Period Page, please report that here:

Start Date:

End Date:

*Measure 3 Numerator:

The number of patients in the denominator for whom data from non-clinical settings, which may include patient-generated health data, is captured through the CEHRT into the patient record during the MU reporting period.

*Measure 3 Denominator:

Number of unique patients seen by the EP during the MU reporting period.

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Meaningful Use Objectives

Objective 7 of 8 - Health Information Exchange

* indicates a required field

Objective:	The EP provides a summary of care record when transitioning or referring their patient to another setting of care, receives or retrieves a summary of care record upon the receipt of a transition or referral or upon the first patient encounter with a new patient, and incorporates summary of care information from other providers into their EHR using the functions of CEHRT.

An EP must attest to all three measures and meet the threshold for two measures for this objective. If the EP meets the criteria for exclusion from two measures, they must meet the threshold for the one remaining measure. If they meet the criteria for exclusion from all three measures, they may be excluded from meeting this objective.

Measure 1:	For more than 50 percent of transitions of care and referrals, the EP that transitions or refers their patient to another setting of care or provider of care: (1) Creates a summary of care record using CEHRT; and (2) Electronically exchanges the summary of care record.
Measure 2:	For more than 40 percent of transitions or referrals received and patient encounters in which the EP has never encountered the patient before, they incorporate into the patient's EHR an electronic summary of care document.
Measure 3:	For more than 80 percent of transitions or referrals received and patient encounters in which the EP has never encountered the patient before, they perform a clinical information reconciliation. The EP must implement clinical information reconciliation for the following three clinical information sets: (1) Medication. Review of the patient's medication, including the name, dosage, frequency, and route of each medication. (2) Medication allergy. Review of the patient's known medication allergies. (3) Current Problem list. Review of the patient's current and active diagnoses.
Measure 1 Exclusion:	An EP may take an exclusion if either or both of the following apply: • They transfer a patient to another setting or refers a patient to another provider fewer than 100 times during the EHR reporting period.

* Does this exclusion apply to you?

○ Yes   ○ No

- They conduct 50 percent or more of their patient encounters in a county that does not have 50 percent or more of its housing units with 4Mbps broadband availability according to the latest information available from the Federal Communications Commission (FCC) on the first day of the EHR reporting period. NOTE: Not applicable.

* Does this exclusion apply to you?

○ Yes   ○ No

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Measure 2 Exclusion: An EP may take an exclusion if either or both of the following apply:

- The total transitions or referrals received and patient encounters in which they have never before encountered the patient, is fewer than 100 during the MU reporting period.

* Does this exclusion apply to you?

○ Yes   ● No

- They conduct 50 percent or more of their patient encounters in a county that does not have 50 percent or more of its housing units with 4Mbps broadband availability according to the latest information available from the FCC on the first day of the MU reporting period.
NOTE: There are no counties in NC that are eligible for this exclusion.

* Does this exclusion apply to you?

○ Yes   ● No

Measure 3 Exclusion: An EP may take an exclusion if the total transitions or referrals received and patient encounters in which they have never encountered the patient before, is fewer than 100 during the MU reporting period.

* Does this exclusion apply to you?

○ Yes   ● No

*Measure 1 Numerator: [   ]

The number of transitions of care and referrals in the denominator where a summary of care record was created using CEHRT and exchanged electronically.

*Measure 1 Denominator: [   ]

Number of transitions of care and referrals during the MU reporting period for which the EP was the transferring or referring provider.

For Measure 1, if the exchange occurred in a reporting period other than the one entered on the Measure Reporting Period Page, please report that here:

Start Date: [   ] 🗓

End Date: [   ] 🗓

*Measure 2 Numerator: [   ]

The number of patient encounters in the denominator where an electronic summary of care record received is incorporated by the provider into the CEHRT.

*Measure 2 Denominator: [   ]

Number of patient encounters during the MU reporting period for which an EP was the receiving party of a transition or referral or has never before encountered the patient and for which an electronic summary of care record is available.

*Measure 3 Numerator: [   ]

The number of transitions of care or referrals in the denominator where the following three clinical information reconciliations were performed: medication list, medication allergy list, and current problem list.

*Measure 3 Denominator: [   ]

Number of transitions of care or referrals during the MU reporting period for which the EP was the recipient of the transition or referral or has never before encountered the patient.

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* indicates a required field

Objective: The EP is in <u>active engagement</u> with a public health agency (PHA) or clinical data registry (CDR) to submit electronic public health data in a meaningful way using CEHRT, except where prohibited, and in accordance with applicable law and practice.

An EP must satisfy two measures for this objective. If the EP cannot satisfy at least two measures, they may take exclusions from all measures they cannot meet.

Measure 1: Immunization Registry Reporting: The EP is in active engagement with a PHA to submit immunization data and receive immunization forecasts and histories from the public health immunization registry/immunization information system (IIS)

Measure 2: Syndromic Surveillance Reporting: The EP is in active engagement with a PHA to submit syndromic surveillance data.

Measure 3: Electronic Case Reporting: The EP is in active engagement with a PHA to submit case reporting of reportable conditions.

Measure 4: Public Health Registry Reporting: The EP is in active engagement with a PHA to submit data to public health registries.

Measure 5: CDR Reporting: The EP is in active engagement to submit data to a CDR.

Measure 1 Exclusion: An EP may take an exclusion if any of the following apply:
(1) They do not administer immunizations to any of the populations for which data is collected by their jurisdiction's immunization registry or IIS during the MU reporting period;
(2) They practice in a jurisdiction for which no immunization registry or IIS is capable of accepting the specific standards required to meet the CEHRT definition at the start of the MU reporting period; or
(3) They practice in a jurisdiction where no immunization registry or IIS has declared readiness to receive immunization data as of six months prior to the start of the MU reporting period.

* Does this exclusion apply to you?

○ Yes ● No

* Are you in active engagement with a PHA to submit immunization data and receive immunization forecasts and histories from the public health immunization registry/immunization information system (IIS)?

● Yes ○ No

* Select your stage of active engagement:

○ **Completed Registration to Submit Data:** The EP registered to submit data with the PHA or, where applicable, the CDR to which the information is being submitted; registration was completed within 60 days after the start of the MU reporting period; and the EP is awaiting an invitation from the PHA or CDR to begin testing and validation. This option allows EPs to meet the measure when the PHA or the CDR has limited resources to initiate the testing and validation process. EPs that have registered in previous years do not need to submit an additional registration to meet this requirement for each MU reporting period.

○ **Testing and Validation:** The EP is in the process of testing and validation of the electronic submission of data. EPs must respond to requests from the PHA or, where applicable, the CDR within 30 days; failure to respond twice within an MU reporting period would result in that EP not meeting the measure.

○ **Production:** The EP has completed testing and validation of the electronic submission and is electronically submitting <u>production data</u> to the PHA or CDR.

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Measure 2 Exclusion: An EP may take an exclusion if any of the following apply:
(1) They are not in a category of providers from which ambulatory syndromic surveillance data is collected by their jurisdiction's syndromic surveillance system;
(2) They practice in a jurisdiction for which no PHA is capable of receiving electronic syndromic surveillance data from EPs in the specific standards required to meet the CEHRT definition at the start of the MU reporting period; or
(3) They practice in a jurisdiction where no PHA has declared readiness to receive syndromic surveillance data from EPs as of six months prior to the start of the MU reporting period.

* Does this exclusion apply to you?
○ Yes   ● No

* Are you in active engagement with a PHA to submit syndromic surveillance data from an urgent care setting?
● Yes   ○ No

* Enter the name of the public health agency you are in active engagement with to submit syndromic surveillance data:
[   ]

* Select your stage of active engagement:

○ **Completed Registration to Submit Data:** The EP registered to submit data with the PHA or, where applicable, the CDR to which the information is being submitted; registration was completed within 60 days after the start of the MU reporting period; and the EP is awaiting an invitation from the PHA or CDR to begin testing and validation. This option allows EPs to meet the measure when the PHA or the CDR has limited resources to initiate the testing and validation process. EPs that have registered in previous years do not need to submit an additional registration to meet this requirement for each MU reporting period.

○ **Testing and Validation:** The EP is in the process of testing and validation of the electronic submission of data. EPs must respond to requests from the PHA or, where applicable, the CDR within 30 days; failure to respond twice within an MU reporting period would result in that EP not meeting the measure.

○ **Production:** The EP has completed testing and validation of the electronic submission and is electronically submitting production data to the PHA or CDR.

Measure 3 Exclusion: An EP may take an exclusion if any of the following apply:
(1) They do not diagnose or directly treat any reportable diseases for which data is collected by their jurisdiction's reportable disease system during the MU reporting period;
(2) They practice in a jurisdiction for which no PHA is capable of receiving electronic case reporting data in the specific standards required to meet the CEHRT definition at the start of the MU reporting period; or
(3) They practice in a jurisdiction where no PHA has declared readiness to receive electronic case reporting data as of six months prior to the start of the MU reporting period.

* Does this exclusion apply to you?
○ Yes   ● No

* Are you in active engagement with a PHA to submit case reporting of reportable conditions?
● Yes   ○ No

* Select your stage of active engagement:

○ **Completed Registration to Submit Data:** The EP registered to submit data with the PHA or, where applicable, the CDR to which the information is being submitted; registration was completed within 60 days after the start of the MU reporting period; and the EP is awaiting an invitation from the PHA or CDR to begin testing and validation. This option allows EPs to meet the measure when the PHA or the CDR has limited resources to initiate the testing and validation process. EPs that have registered in previous years do not need to submit an additional registration to meet this requirement for each MU reporting period.

○ **Testing and Validation:** The EP is in the process of testing and validation of the electronic submission of data. EPs must respond to requests from the PHA or, where applicable, the CDR within 30 days; failure to respond twice within an MU reporting period would result in that EP not meeting the measure.

○ **Production:** The EP has completed testing and validation of the electronic submission and is electronically submitting production data to the PHA or CDR.

* Select the name of the public health registry that you are in active engagement with to submit data.
[Please choose specialized registry   ▼]

Measure 4 Exclusion: An EP may take an exclusion if any of the following apply:
(1) They do diagnose or directly treat any disease or condition associated with a public health registry in their jurisdiction during the MU reporting period;
(2) They practice in a jurisdiction for which no PHA is capable of accepting electronic registry transactions in the specific standards required to meet the CEHRT definition at the start of the MU reporting period; or
(3) They practice in a jurisdiction where no PHA for which the EP is eligible to submit data has declared readiness to receive electronic registry transactions as of six months prior to the start of the MU reporting period.

* Does this exclusion apply to you?

○ Yes   ● No

* Are you in active engagement with a PHA to submit data to public health registries?

● Yes   ○ No

* Select your stage of active engagement:

○ **Completed Registration to Submit Data:** The EP registered to submit data with the PHA or, where applicable, the CDR to which the information is being submitted; registration was completed within 60 days after the start of the MU reporting period; and the EP is awaiting an invitation from the PHA or CDR to begin testing and validation. This option allows EPs to meet the measure when the PHA or the CDR has limited resources to initiate the testing and validation process. EPs that have registered in previous years do not need to submit an additional registration to meet this requirement for each MU reporting period.

○ **Testing and Validation:** The EP is in the process of testing and validation of the electronic submission of data. EPs must respond to requests from the PHA or, where applicable, the CDR within 30 days; failure to respond twice within an MU reporting period would result in that EP not meeting the measure.

○ **Production:** The EP has completed testing and validation of the electronic submission and is electronically submitting production data to the PHA or CDR.

* Select the name of the public health registry that you are in active engagement with to submit data.

ABFM (American Board of Family Medicine) PRIME ⌄

* Are you actively engaged with more than one public health registry?

● Yes   ○ No

* Select the name of the second public health registry with which you are actively engaged.

Please choose specialized registry ⌄

Measure 5 Exclusion: An EP may take an exclusion if any of the following apply:
(1) They do diagnose or directly treat any disease or condition associated with a CDR in their jurisdiction during the MU reporting period;
(2) They practice in a jurisdiction for which no CDR is capable of accepting electronic registry transactions in the specific standards required to meet the CEHRT definition at the start of the MU reporting period; or
(3) They practice in a jurisdiction where no CDR for which the EP is eligible to submit data has declared readiness to receive electronic registry transactions as of six months prior to the start of the MU reporting period.

* Does this exclusion apply to you?

○ Yes   ● No

* Are you in active engagement to submit data to a CDR?

● Yes   ○ No

* Select your stage of active engagement:

○ **Completed Registration to Submit Data:** The EP registered to submit data with the PHA or, where applicable, the CDR to which the information is being submitted; registration was completed within 60 days after the start of the MU reporting period; and the EP is awaiting an invitation from the PHA or CDR to begin testing and validation. This option allows EPs to meet the measure when the PHA or the CDR has limited resources to initiate the testing and validation process. EPs that have registered in previous years do not need to submit an additional registration to meet this requirement for each MU reporting period.

○ **Testing and Validation:** The EP is in the process of testing and validation of the electronic submission of data. EPs must respond to requests from the PHA or, where applicable, the CDR within 30 days; failure to respond twice within an MU reporting period would result in that EP not meeting the measure.

○ **Production:** The EP has completed testing and validation of the electronic submission and is electronically submitting production data to the PHA or CDR.

* Select the name of the clinical data registry that you are in active engagement.

| Please choose specialized registry ⌄ |

* Are you actively engaged with more than one clinical data registry?

● Yes   ○ No

* Select the name of the second clinical data registry with which you are actively engaged.

| Please choose specialized registry ⌄ |

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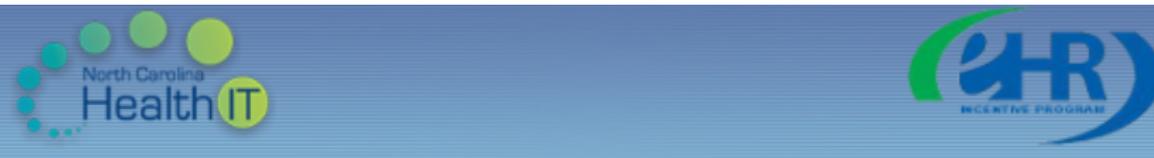
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Meaningful Use Objectives Table
Please select the *Edit* link next to the Objective you wish to update. If you do not wish to edit your Objectives, you may select *Next* button to continue.

Objective	Data Entered	Edit
Protect electronic protected health information (ePHI) created or maintained by the certified electronic health record technology (CEHRT) through the implementation of appropriate technical, administrative, and physical safeguards.	Yes	Edit
Generate and transmit permissible prescriptions electronically.	Excluded	Edit
Implement clinical decision support (CDS) interventions focused on improving performance on high-priority health conditions.	Yes Excluded	Edit
Use CPOE for medication, laboratory, and diagnostic imaging orders directly entered by any licensed healthcare professional, credentialed medical assistant, or a medical staff member credentialed to and performing the equivalent duties of a credentialed medical assistant, who can enter orders into the medical record per state, local, and professional guidelines.	Excluded Excluded Excluded	Edit
The EP provides patients (or patient-authorized representative) with timely electronic access to their health information and patient-specific education.	Excluded	Edit
Use CEHRT to engage with patients or their authorized representatives about the patient's care.	Excluded	Edit
The EP provides a summary of care record when transitioning or referring their patient to another setting of care, receives or retrieves a summary of care record upon the receipt of a transition or referral or upon the first patient encounter with a new patient, and incorporates summary of care information from other providers into their EHR using the functions of CEHRT.	Excluded Excluded Excluded	Edit
The EP is in active engagement with a public health agency (PHA) or clinical data registry (CDR) to submit electronic public health data in a meaningful way using CEHRT, except where prohibited, and in accordance with applicable law and practice.	Excluded Excluded Excluded Excluded Excluded	Edit

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Clinical Quality Measure Instructions

From the 47 CQMs listed below, you must submit data for six CQMs relevant to your scope of practice. Per CMS, at least one of the CQMs must be an outcome measure, if any are relevant. If no outcome measures are relevant, you must select at least one other high priority measure. If no high priority measures are relevant, you may report on any six CQMs that are relevant to your scope of practice.

After selecting the "Next" button below, you will be prompted to enter numerator(s), denominator(s), and exclusion(s), for all selected CQMs.

At least one selection must be made for each section. If there are no outcome and/or high priority CQMs that are relevant to your scope of practice, please select N/A for that section.

Section 1: Outcome Measures
Of your six CQMs, select at least one outcome measure that is relevant to your scope of practice.

☐ **CMS 75v9**	Children Who Have Dental Decay or Cavities
☐ **CMS 122v9**	Diabetes: Hemoglobin A1c (HbA1c) Poor Control (> 9%)
☐ **CMS 133v9/NQF 0565e**	Cataracts: 20/40 or Better Visual Acuity within 90 Days Following Cataract Surgery
☐ **CMS 159v9/NQF 0710e**	Depression Remission at Twelve Months
☐ **CMS 165v9**	Controlling High Blood Pressure
☐ **CMS 771v2**	Urinary Symptom Score Change 6-12 Months After Diagnosis of Benign Prostatic Hyperplasia
☐ **N/A**	None of these CQMs are relevant to my scope of practice

Section 2: High Priority Measures
If there are no outcome measures that are relevant to your scope of your practice, select at least one high priority measure.

☐ **CMS 2v10/NQF 0418e**	Preventative Care and Screening: Screening for Depression and Follow-Up Plan
☐ **CMS 50v9**	Closing the Referral Loop: Receipt of Specialist Report
☐ **CMS 56v9**	Functional Status Assessment for Total Hip Replacement
☐ **CMS 66v9**	Functional Status Assessment for Total Knee Replacement
☐ **CMS 68v10/NQF 0419e**	Documentation of Current Medications in the Medical Record
☐ **CMS 90v10**	Functional Status Assessments for Congestive Heart Failure
☐ **CMS 125v9**	Breast Cancer Screening
☐ **CMS 128v9**	Anti-depressant Medication Management
☐ **CMS 129v10/NQF 0389e**	Prostate Cancer: Avoidance of Overuse of Bone Scan for Staging Low Risk Prostate Cancer Patients
☐ **CMS 136v10**	Follow-Up Care for Children Prescribed ADHD Medication (ADD).
☐ **CMS 137v9**	Initiation and Engagement of Alcohol and Other Drug Dependence Treatment
☐ **CMS 139v9**	Falls: Screening for Future Fall Risk

☐ CMS 142v9	Diabetic Retinopathy: Communication with the Physician Managing Ongoing Diabetes Care
☐ CMS 146v9	Appropriate Testing for Pharyngitis
☐ CMS 153v9	Chlamydia Screening for Women
☐ CMS 154v9	Appropriate Treatment for Upper Respiratory Infection (URI)
☐ CMS 155v9	Weight Assessment and Counseling for Nutrition and Physical Activity for Children and Adolescents
☐ CMS 156v9	Use of High-Risk Medications in Older Adults
☐ CMS 157v9/NQF 0384e	Oncology: Medical and Radiation - Pain Intensity Quantified
☐ CMS 177v9/NQF 1365e	Child and Adolescent Major Depressive Disorder (MDD): Suicide Risk Assessment
☐ CMS 249v3/NQF 3475e	Appropriate Use of DXA Scans in Women Under 65 Years Who Do Not Meet the Risk Factor Profile for Osteoporotic Fracture
☐ N/A	None of these CQMs are relevant to my scope of practice
Section 3: If there are not six outcome or high priority CQMs that are relevant to your scope of practice, report on any six CQMs from the following list that are relevant to your scope of practice:	
☐ CMS 22v9	Preventive Care and Screening: Screening for High Blood Pressure and Follow-Up Documented
☐ CMS 69v9	Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up Plan
☐ CMS 74v10	Primary Caries Prevention Intervention as Offered by Primary Care Providers, including Dentists
☐ CMS 117v9	Childhood Immunization Status
☐ CMS 124v9	Cervical Cancer Screening
☐ CMS 127v9	Pneumococcal Vaccination Status for Older Adults
☐ CMS 130v9	Colorectal Cancer Screening
☐ CMS 131v9	Diabetes: Eye Exam
☐ CMS 134v9	Diabetes: Medical Attention for Nephropathy
☐ CMS 135v9/NQF 0081e	Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) or Angiotensin Receptor-Neprilysin Inhibitor (ARNI) Therapy for Left Ventricular Systolic Dysfunction (LVSD)
☐ CMS 138v9/NQF 0028e	Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention
☐ CMS 143v9/NQF 0086e	Primary Open-Angle Glaucoma (POAG): Optic Nerve Evaluation
☐ CMS 144v9/NQF 0083e	Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)
☐ CMS 145v9/NQF 0070e	Coronary Artery Disease (CAD): Beta-Blocker Therapy-Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)
☐ CMS 147v10/NQF 0041e	Preventive Care and Screening: Influenza Immunization
☐ CMS 149v9/NQF 2872e	Dementia: Cognitive Assessment
☐ CMS 161v9/NQF 0104e	Adult Major Depressive Disorder (MDD): Suicide Risk Assessment
☐ CMS 347v4	Statin Therapy for the Prevention and Treatment of Cardiovascular Disease
☐ CMS 349v3	HIV Screening
☐ CMS 645v4	Bone density evaluation for patients with prostate cancer and receiving androgen deprivation therapy

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Clinical Quality Measures Summary

Clinical Quality Measures Summary Table
Please select the *Edit* link next to the measure you wish to update. If you do not wish to edit your measures, you may select *Next* button to continue.

| Objective	Data Entered	Edit
CMS 122v9	Numerator = 1 Denominator = 1	Edit
CMS 50v9	Numerator = 0 Denominator = 0	Edit
CMS 22v9	Numerator = 5 Denominator = 5	Edit
CMS 74v10	Numerator = 8 Denominator = 8	Edit
CMS 135v9/NQF 0081e	Numerator = 0 Denominator = 0	Edit
CMS 145v9/NQF 0070e	Numerator = 1 Denominator = 1	Edit

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Congratulations

Congratulations! You have completed all the attestation questions. Only two steps remain: submitting the attestation electronically (next screen) and emailing a PDF of the signed copy to NCMedicaid.HIT@dhhs.nc.gov.

The State of North Carolina looks forward to working with you as our State moves towards improving patient care through the adoption of electronic health records and health information exchange.

Thank you for your participation in this program!

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Electronic Submission

Concealment or falsification of material facts regarding incentive payment can result in Medicaid Provider Payment suspension, civil prosecution pursuant to the False Claims Act (31 USC 3729-3733), Medical Assistance Provider Fraud (N.C.G.S. 108A-63), Medical Assistance Provider False Claims Act (N.C.G.S. 108A-70.10 to 70-16), the North Carolina False Claims Act (N.C.G.S. 1-605 to 1-618), and/or criminal prosecution pursuant to criminal fraud statutes of North Carolina.

This is to certify that the foregoing information is true, accurate, and complete. I understand that Medicaid EHR incentive payments submitted under this provider number will be from Federal funds, and that any falsification, or concealment of a material fact may be prosecuted under Federal and State law.

☐ I have read the above statements and attest to my responses.

Previous   **Submit**
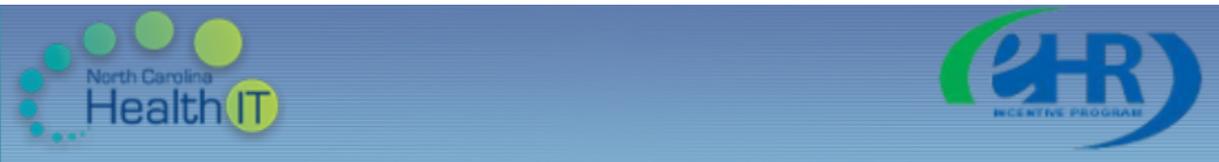
Print, Sign, and Send Attestation

You have completed the online attestation for the NC Medicaid EHR Incentive Program. In order to have the attestation validated for payment, we need a signed copy of your attestation.

Please follow the steps listed below:

1. **Print** a copy of your attestation. Attestations may also be printed from the status page.

2. The attesting provider must manually sign and date each of the three sections of the attestation. Stamps and electronic signatures are not accepted.

3. Email all pages of the signed attestation along with CQM report and any supporting documentation (what's this?) to the NC-MIPS Help Desk at NCMedicaid.HIT@dhhs.nc.gov Hard copies are not accepted.

Please maintain a copy of your attestation, and all documentation used to arrive at the information reported on your attestation, for six years in case of post-payment audit.

The State of North Carolina looks forward to working with you on this important program. Please refer to the NC Medicaid EHR Incentive Program Website for more information on the attestation validation process. You may also track the status of your attestation on the status page.

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Provider Name	John27780 Public27780
CMS Registration ID	1000000001
NPI	1234567890

Program Year	Payment Year	Current Status	Payment Date		
2021	3	Waiting for Signed Attestation		View/Print	Withdraw
2020	2	Paid	03/22/2021	View/Print	
2019	2	Closed - No Attestation Submitted			
2018	2	Closed - No Attestation Submitted			
2017	2	Closed - No Attestation Submitted			
2016	2	Closed - No Attestation Submitted			
2015	2	Closed - No Attestation Submitted			
2014	2	Closed - No Attestation Submitted			
2013	1	Paid	06/11/2014	View/Print	

Appendix 3 - Meaningful Use Objectives

- 2021 Stage 3 Specification Sheets for EPs

- 2020 Stage 3 Specification Sheets for EPs

- 2019 Stage 3 Specification Sheets for EPs and hospitals

- 2018 Stage 3 Specification Sheets for EPs and hospitals

- 2018 Modified Stage 2 Specification Sheets for EPs and hospitals

- 2017 Stage 3 Specification Sheets for EPs and hospitals

- 2017 Modified Stage 2 Specification Sheets for EPs and hospitals

- 2016 Specification Sheets for EPs and hospitals and CAHs

- 2015 Specification Sheet for Eligible Professionals

- 2015 Specification Sheet for Eligible Hospitals and CAHs

- Stage 2 Specification Sheet Table of Contents for Eligible Professionals

- Stage 2 Specification Sheet Table of Contents for Eligible Hospitals and CAHs

- Stage 1 Eligible Professional Attestation Worksheet (2014 Definition)

- Stage 1 Eligible Hospital and CAH Attestation Worksheet (2014 Definition)

- Eligible Professional 2013 Definition Spec Sheets

- Eligible Hospital 2013 Definition Spec Sheets

Group Methodology for Patient Volume Reporting

'**Group**' means one or more eligible professionals practicing together at one practice location or at multiple practice locations within a logical geographical region under the same healthcare organization.

At a single location...

Dr. Jones works here

Dr. Jones

Raleigh location of ABC Healthcare
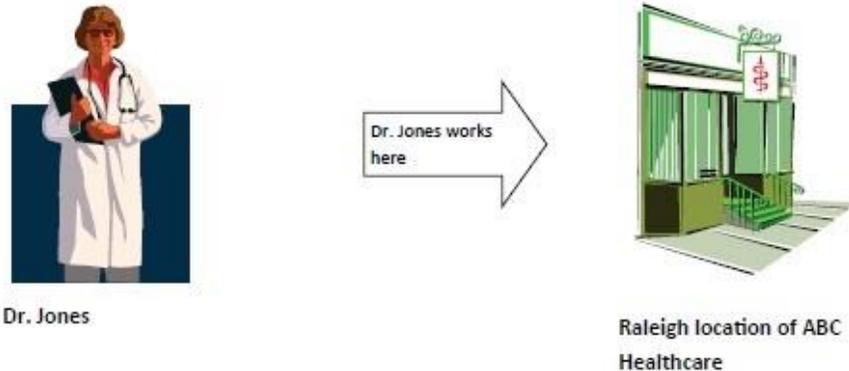
If Dr. Jones chooses group methodology and defines the group as a single practice location (the Raleigh location of ABC Healthcare), she must attest using the encounters from EVERY professional (eligible professionals such as MDs and non-eligible professionals such as RNs, phlebotomists, etc.) at this location who provided services within the group's consecutive 90-day reporting period from the prior year.

In other words, if an eligible professional defines the group as a single practice location, every professional's encounters at that location must be accounted for when calculating patient volume.

Please note, so long as a new provider has an 'appropriate' current affiliation with a practice, they do not need to have been with the group during the group's selected reporting period to attest using group methodology.

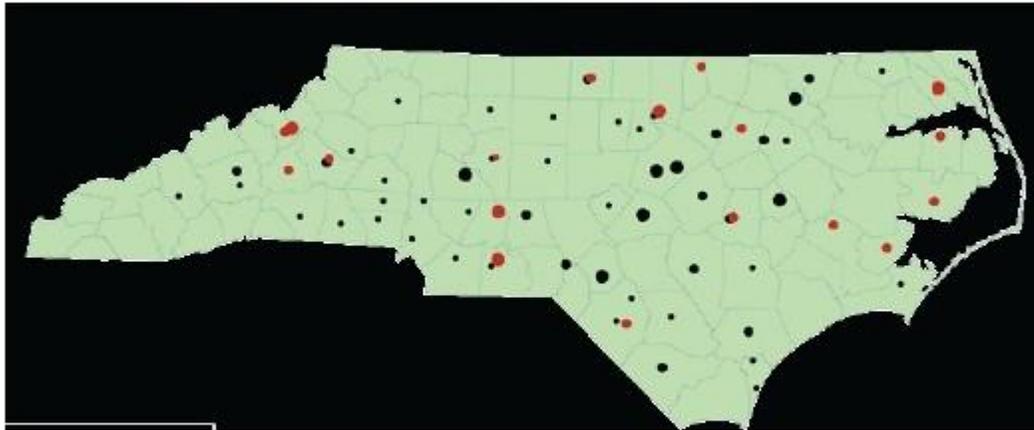**Figure 13 - Group Method - One Location**

Group Methodology for Patient Volume Reporting

'**Group**' means one or more eligible professionals practicing together at one practice location or at multiple practice locations within a logical geographical region under the same healthcare organization.

At several practice locations in the same town, city, region or part of the state...

Triangle
Region
(4 locations)

Raleigh location of ABC Healthcare   Durham location of ABC Healthcare   Cary location of ABC Healthcare   Chapel Hill location of ABC Healthcare

If Dr. Jones chooses group methodology and defines the group so that it consists of the practice locations within a logical geographical region (the Triangle Region), she must attest using the encounters from EVERY professional (eligible professionals such as MDs and non-eligible professionals such as RNs, phlebotomists, etc.) at the locations within her defined region who provided services the group's chosen consecutive 90-day reporting period from the prior year. Please note, EPs are required to report on at least one location with certified EHR technology.

In other words, if an eligible professional defines the group so that it consists of the practices within a logical geographical region, every professional's encounters within the practice locations in this region must be accounted for when calculating patient volume.

Please note, so long as a new provider has an 'appropriate' current affiliation with a practice, they do not need to have been with the group during the group's selected reporting period to attest using group methodology.
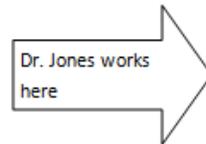
Figure 14 - Group Method - Same Region

Figure 15 - Group Method - Statewide

Figure 16 - Individual Method - One Location

Individual Methodology for Patient Volume Reporting

At more than one location...

Dr. Jones

Dr. Jones works at two locations
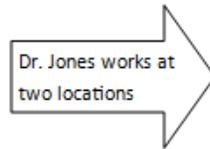
Raleigh location of ABC Healthcare

Durham location of ABC Healthcare

Dr. Jones may use encounters from multiple locations, but is not required to report on more than one location, but it is required to report on at least one location with certified EHR technology. She has two options for reporting patient volume from either or both locations using individual methodology for multiple locations:

1. She can report the number of encounters she (and she alone) has had in a consecutive 90-day period from the prior year; or,

2. She can report the number of patient encounters that she has had, **and** the patient encounters of staff she directly supervises, during the same consecutive 90-day period from the prior year.

In other words, if Dr. Jones supervises any staff, such as X-Ray Technicians, Registered Nurses, Lab Technicians, etc., she can count their total patient encounters toward meeting her patient volume threshold. Please note, EPs are required to report on at least one location with certified EHR technology.

Regardless of the encounters Dr. Jones chooses to count toward patient volume, she will need to be consistent in applying the encounters in both the numerator and denominator.

Figure 17 - Individual Method - Multiple Locations

Appendix 5 – Webinar Library

2021 Webinar series

On the Program's home page, there are quick-tip webinars, which are 2-7 minutes videos covering the basics on a wide variety of EHR Incentive Program topics. There are also several 10-15-minute webinars that provide in-depth information and attestation guidance.

Introduction to the NC Medicaid EHR Incentive Program (Run time: 4:10)

Tips for Returning Providers in Program Year 2021 (Run time: 4:25)

Attesting in NC-MIPS (Run time: 10:26)

Patient Volume Basics for the NC Medicaid EHR Incentive Program (Run time: 7:19)

Patient Volume Reporting Periods in Program Year 2021 (Run time: 2:38)

Stage 3 Meaningful Use in Program Year 2021 (Run time: 7:58)

Clinical Quality Measures in Program Year 2021 (Run time: 3:50)

Submitting an NC Medicaid EHR Incentive Program Attestation (Run time: 4:59)

Processing an NC Medicaid EHR Incentive Program Attestation (Run time: 4:40)

NC Medicaid EHR Incentive Program Outreach (Run time: 5:20)

NC Medicaid EHR Incentive Program Payments (Run time: 4:24)

NC Medicaid EHR Incentive Program Resources (Run time: 5:38)

NC Medicaid EHR Incentive Program Audits (Run time: 5:17)

Post-Payment Audit and the Security Risk Assessment (Run time: 4:20)

CMS' Registration & Attestation System (Run time: 6:44)

NCID and the NC Medicaid EHR Incentive Program (Run time: 2:44)

NCID Username Update Tool in NC-MIPS (Run time: 2:20)

NC-MIPS First Time Account Setup (Run time: 2:39)

NC-MIPS, NCID, NCTracks and CMS' R&A System Explained (Run time: 3:14)

What to do When Your Name Changes (Run time: 2:31)

Payee NPI Explained (Run time: 3:06)

Medicaid-verified PV number is lower than the attested PV number (Run time: 12:06)

Medicaid verified PV number is higher than the attested PV number for individual providers (Run time: 7:23)

Medicaid-verified PV number is higher than the attested PV number for group providers (Run time: 8:26)

An Overview of CMS EHR Certification ID Numbers (Run time: 2:41)

A Detailed Look at CMS EHR Certification ID Numbers (Run time: 4:52)

Behavioral Health Template Overview webinar (Run Time: 6:11)

Appendix 6 – Final Participation Year Outreach Campaign

Appendix 6 describes outreach efforts undertaken to remind Medicaid providers that Program Year 2016 was the last opportunity to begin participating in the Medicaid EHR Incentive Program.

Program Year 2016 Outreach

6/22/16 - Developed communication plan for Program Year 2016 AIU outreach campaign.

> The intent of the Program Year 2016 AIU outreach campaign is to spread awareness to providers that Program Year 2016 is the last year to begin participating in the Program and that the deadline to attest is April 30, 2017.

> The outreach message was distributed through partner and stakeholder groups:

> 8/16/16 – Email on 2016 deadline sent to partner organizations, including representatives from the organizations below, to share with their constituents:

- NC AHEC;
- NC HIE;
- NC Office of Rural Health;
- NC Community Health Centers Association;
- NC Medical Society;
- NC Dental Society;
- NC Medical Group Managers;
- NC Healthcare Information & Communications Alliance;
- NC Pediatric Society;
- NC Psychiatric Association;
- NC Academy of Family Practice;
- NC Academy of Physicians Assistants;
- NC Psychiatric Association; and,
- NC Council of Nurse Practitioners.

> 8/17/16 – Article on 2016 deadline posted on NC AHEC's website and news feed.

> 8/24/16 – Condensed 2016 outreach message added to every member of the NC Medicaid EHR Incentive Program team's signature line.

> 8/29/16 – Article on 2016 deadline posted in SEAHEC's Practice Newsletter.

> 9/21/16 – Article on 2016 deadline posted to NCTracks' Provider Announcements webpage.

> 9/21/16 - NC Providers Council 2016 Annual Conference at the Greensboro Sheraton Hotel at Four Seasons. NC OHIT director's presentation included information on the NC Medicaid EHR Incentive Program and a reminder that Program Year 2016 is the last opportunity to begin participating.

> 9/22/16 – Blast email on 2016 deadline sent through NCTracks to reach all Medicaid providers.

> 10/28/16 – Article on 2016 deadline distributed in NCHICA's October Newsletter.

> 11/1/16 – Email on 2016 deadline sent to representatives from large groups, including:

1. UNC Health Care;
2. Duke Health;

3. Brody School of Medicine at ECU;
4. Goshen Medical Center;
5. Daymark Recovery Services;
6. Wake Med Health and Hospitals;
7. Novant Health;
8. Carolinas Healthcare System; and,
9. Wake Forest Baptist Health.

1/17/17 – Program manager presented program overview for NC Association of Public Health Nurse Administrators and emphasized that Program Year 2016 is the last opportunity to begin participating.

1/31/17 – Article on 2016 deadline posted in the LME-MCO Joint Communication Bulletin.

2/1/17 – Article on 2016 deadline posted in the NC Dental Society's e-newsletter.

2/17/17 – Article on 2016 deadline distributed through ORHCC.

3/1/17 – Worked with NC AHEC liaison to post 2016 outreach message in all NC AHEC newsletters.

4/7/17 – Email sent to previously denied participants encouraging them to re-attest for Program Year 2016 before the end of our attestation tail period on 4/30/17.

Program updates and 2016 outreach message included in the NC Medicaid Provider Bulletin (archived copies available here):
   o August 2016
   o September 2016
   o October 2016
   o November 2016
   o December 2016
   o January 2017
   o February 2017
   o March 2017
   o April 2017

Appendix 7 - Denial for EHR Incentive Program Payment

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES
Division of Health Benefits

ROY COOPER • Governor
MANDY COHEN, MD, MPH • Secretary
DAVE RICHARD • Deputy Secretary, NC Medicaid

TO:
FROM: The NC Medicaid EHR Incentive Program, Provider Relations Team
DATE: May 21, 2019
SUBJECT: Denial of Program Year 2018 Payment

The NC Medicaid Electronic Health Record (EHR) Incentive Program's team is granted the authority to administer the NC Medicaid EHR Incentive Program per 42 CFR Parts 412, 413 and 495. The Centers for Medicare and Medicaid Services' (CMS) 42 CFR 495 requires each state to submit and receive CMS approval for all pre-payment validations. The Program's team is required to follow the same procedure for each attestation received and is not permitted to deviate from the CMS-approved validation process. If an eligible professional (EP) does not meet the eligibility requirements, and the information provided in NC-MIPS is not accurate and valid, federal funds cannot be issued.

In response to the attestation last submitted on April 30, 2019, the Program's team has denied your request for an NC Medicaid EHR incentive payment. The request is being denied because:

- your reported site address does not match between NCTracks and CMS
- you did not attest with a valid certified EHR technology
- you did not provide the required attestation documentation

As you did not meet eligibility requirements for meaningful use (MU), you fail to meet EHR program eligibility pursuant to CFR 42 495.366 (c). For additional information, please refer to the outreach emails sent on 5/1/19 and 5/13/19.

Even though you were denied for Program Year 2018, you may attest for a later program year without penalty.

In other words, though you were denied for a third-year payment for Program Year 2018, you will have the opportunity to attest and receive the third-year payment of $8,500 in Program Year 2019.

If you have questions regarding this denial, please contact the Program Help Desk by email at NCMedicaid.HIT@dhhs.nc.gov.

If additional assistance is needed within your practice, please contact one of our technical assistance partners, located on the 'Technical Assistance' tab of the NC Medicaid EHR Incentive Program's website.

If you disagree with this decision you may request a hearing within fifteen (15) working days of the date of this letter by submitting a request to:

Chief Hearing Officer
DHHS Hearing Office

NC MEDICAID
NC DEPARTMENT OF HEALTH AND HUMAN SERVICES • DIVISION OF HEALTH BENEFITS
MAILING ADDRESS: 2501 Mail Service Center, Raleigh NC 27699-2001
www.ncdhhs.gov
AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

2501 Mail Service Center
Raleigh, North Carolina 27699-2501
Fax: 919-814-0032

You may request a telephone or personal hearing. Please include a copy of this denial letter and any written documentation for review. The documentation must be received within fifteen (15) working days from the date of this letter in order to be considered.

If you request a personal hearing, the hearing will be scheduled in the DHHS Raleigh office. Following reconsideration review, you will be notified in writing of the decision.

If you do not request a reconsideration review or if you disagree with the reconsideration review decision, you may file a petition for a contested case hearing with the Office of Administrative Hearings (OAH) in accordance with G.S. § 150B-23(a). You have sixty (60) calendar days from the date of this letter or the date of the reconsideration review decision to file a contested case petition with the OAH. Petition forms are available on the OAH website at http://www.oah.state.nc.us/forms.html. There may be a fee associated with filing a petition at OAH. If you have questions about the OAH appeal process or the filing fee, OAH can be reached directly at (919) 431-3000.

You **must** file the contested case petition form with the Office of Administrative Hearings, either in person at 1711 New Hope Church Road, Raleigh, NC 27609, by mail at 6714 Mail Service Center, Raleigh, NC 27699-6714, by fax during normal business hours by faxing the petition to the Clerk's Office at (919) 431-3100, or by electronic mail by an attached file either in PDF format or a document that is compatible with or convertible to the most recent version of Word for Windows by sending the electronic transmission to: oah.clerks@oah.nc.gov. Electronic mail without attached file shall not constitute a valid filing. OAH must receive the original signed document and one copy along with the appropriate fee, within seven (7) business days following the fax or electronic transmission date. In addition, you must mail a copy to Legal Counsel, NC Department of Health and Human Services. 101 Blair Drive, Raleigh, NC 27603.

Figure 18 - Sample Denial Letter