State of North Carolina Department of Health and Human Services

Division of Medical Assistance

North Carolina Medicaid Electronic Health Record Incentive Program Implementation Advance Planning Document-Update – FFYs 2017-2018

Submitted by:

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1 Executive Summary

This Implementation Advance Planning Document (I-APD) is being submitted by the North Carolina Department of Health and Human Services (NC DHHS), Division of Medical Assistance (DMA) to request Federal Financial Participation (FFP) from the Centers for Medicare and Medicaid Services (CMS) for administrative costs to support design, development, testing, implementation, administration, and audit activities for the North Carolina Medicaid Electronic Health Record (EHR) Incentive Program authorized by the American Recovery and Reinvestment Act of 2009 (ARRA), (Pub. L. 111-5) enacted on February 17, 2009. The Health Information Technology (HIT) Incentive Program Title IV of this law established a 10-year program to promote the use of HIT and certified electronic health record technology (CEHRT) among Medicaid providers. This I-APD describes the activities and funding to implement and administer the program during its seventh and eighth years, Federal Fiscal Years (FFYs) 2017-2018.

NC DHHS has a vested interest in the progress of HIT both at the state and national levels and understands and accepts the responsibility to efficiently utilize available federal dollars for administration of incentive payments to Medicaid providers. NC DHHS commits to use the funds for the purposes of administering the incentive payments and enabling the meaningful use of CEHRT by Medicaid providers. NC DHHS agrees to continue development of appropriate oversight mechanisms, including detailed tracking of provider registration, attestation, and data collection, which will continue beyond implementation of CEHRT to ensure measureable operational value and improved patient care.

This I-APD describes the following areas pertinent to the NC Medicaid EHR Incentive Program implementation:

1. Results of the Medicaid HIT Planning Advanced Planning Document (P-APD);
2. Statement of needs and objectives with an overview of the current environment;
3. Summary of functional, technical, and interface requirements, including an overview of the alternatives analysis;
4. Summary of program management;
5. Proposed activity schedule;
6. Proposed budget, including personnel requirements; and,
7. Prospective cost allocation plan.

This I-APD was constructed and will be updated in parallel with the North Carolina State Medicaid HIT Plan (SMHP).

This I-APD update requests FFP $10,338,314 at 90% in HITECH funds for FFYs 2017-2018.

A total of $40,074,092 (FFP $36,066,682 at 90%) in HITECH (administrative and HIE) and MMIS funds was previously approved by CMS for North Carolina for FFYs 2011-2014. This amount contained $30,118,150 (FFP $27,106,335 at 90%) in administrative funding approved in a CMS letter dated December 27, 2010, and $1,712,196 (FFP $1,540,976 at 90%) in HIE support approved in a CMS letter dated March 1, 2012. CMS re-approved administrative funding for FFYs 2012-2013 in an amount not to exceed $12,079,732 (FFP $10,871,759 at 90%) in a CMS letter dated July 6, 2012. CMS re-approved administrative funding for FFY 2014 in an amount not to exceed $8,243,746 (FFP $7,419,371 at 90%) in a CMS letter dated August 14, 2013. Total project spend in FFY 2011 was $6,240,511 (FFP $5,616,460 at 90%). Total project spend in FFY 2012 was $3,315,286 (FFP $2,983,757 at 90%). Total project spend in FFY 2013 was $4,312,069 (FFP $3,880,862 at 90%). Total project spend in FFY 2014 was $2,258,018 (FFP $2,032,216 at 90%). Total project

spend in FFY 2015 was $3,371,416 (FFP $3,034,274 at 90%). Total project spend in FFY 2016 as of June 6, 2016 was $4,071,977 (FFP $3,664,779 at 90%).

NOTE: The DMA HIT team anticipates working closely with the North Carolina Health Information Exchange Authority (NC HIEA) in FFYs 2017 – 2018. The NC HIEA is currently in a transition phase since the NC HIE's move from the Community Care of North Carolina (CCNC) / North Carolina Community Care Networks (N3CN) structure to the new statewide NC HIEA on February 29, 2016. We will submit an update to this IAPD regarding the NC HIEA at a later date.

2 Results of Activities included in the Planning Advance Planning Document (P-APD) and SMHP

2.1 P-APD Activity Summary

NC DHHS' DMA submitted a HIT Planning APD (P-APD), #20100122P-00, on January 22, 2010. This P-APD was approved by CMS on February 9, 2010, and included the following planning tasks:

1. Provider Outreach to include broad-brushed surveying and input from providers for assessment of provider readiness and "shovel ready" ideas for practical EHR and HIT applications within their professional environments;
2. Consumer Outreach to include focus groups of recipients and/or recipient family members to assess consumer specific educational needs and to develop ideas for consumer educational materials and tools;
3. Development of the North Carolina SMHP, beginning with an "As-Is" landscape assessment and baseline measurement of the current use of HIT in North Carolina to facilitate gap analysis for a "To-Be" vision and roadmap plan, inclusive of the activities necessary to deliver incentive payments to meaningful users of CEHRT who see the requisite Medicaid patient volume;
4. Development of the HIT I-APD to implement activities identified in the SMHP necessary to support the state's HIT "To-Be" vision; and,
5. Creation of a strategy to develop the necessary operational infrastructure support and program audit requirements to monitor results at each step of the operational plan.

The P-APD was officially closed out with CMS on September 26, 2011.

Table 1 below was taken from the P-APD, and outlines the HIT high-level task activities and deliverables. This table has been updated with actual activities completed during the planning phase of Medicaid HIT activities in 2010.

Task	Expected Deliverable	Actual Activity/Deliverable
Coordinate and Prepare SMHP	As part of the creation of the SMHP: 1. "As-Is" and "To-Be" HIT landscapes; and, 2. HIT roadmap outlining tasks and milestones to reach the "To-Be"	SMHP submitted to and approved by CMS.

Task	Expected Deliverable	Actual Activity/Deliverable
	condition over the next five years.	
Prepare an Environmental survey for current status of EHR and Health Information Exchange (HIE) capabilities within North Carolina	An acceptable estimate of the current state of the incidence and use of EHR and HIE within the state. This information will be the basis of the work to be done to achieve the end goal.	To determine the current status of North Carolina's "As-Is" HIT landscape, NC DMA developed and participated in two surveys of NC Medicaid providers. One pertained specifically to EHR usage and the second pertained to broadband availability and included questions on EHR use. As of Nov 1, 2010, 2,133 EHR surveys had been compiled. These surveys indicated that 49 percent of respondents currently used EHRs and an additional 14 percent planned to begin use within a year following survey completion. The broadband survey was not limited to Medicaid or healthcare providers; however, 1,136 of the respondents indicated that their establishments provided healthcare services. Of these, all but six had access to broadband internet connectivity, and 38-73 percent reported use of EHRs (variance based on practice type). Full survey results are described in the SMHP.
Create a methodology to administer the Medicaid EHR Incentive Program	Planning/implementation approach and technical architecture.	High-level definition of NC-MIPS was completed in July 2010, which included an alternatives analysis of software solutions. The selected approach is described in the SMHP and I-APD.
Identify best operational mechanisms for monitoring federal and state-specified meaningful use criteria. Document demonstration of achieving meaningful use at the provider level	A solution that is mainly automated in nature in order to minimize the human labor that is needed to monitor and report on each provider.	The operational strategy and monitoring of meaningful use is under development for implementation in Year 2. Year 1 of the EHR Incentive Program is limited to Adopt, Implement, and Upgrade of CEHRT.
Provider Education	A plan for high-level provider consumer education, to include: 1. Draft of the proposed training curriculum; 2. Draft of high-level samples of training aids	The plan for provider consumer education is described in the SMHP. A provider website has been established for communications and questions regarding the Medicaid EHR Incentive Program, and a program FAQ document has been created. HIT

Task	Expected Deliverable	Actual Activity/Deliverable
	and documentation for presentations; 3. Draft proposal on content of a web-based training program; and, 4. Media campaign plan for provider education.	announcements have been included in monthly Medicaid Bulletins, and information about the program can be found at three different websites: • DMA; • NCTracks (enrollment); and, • State HIT site.

Table 1 - P-APD High Level Task Activity

2.1.1 P-APD Funding Summary

Table 2 below summarizes approved, expended, and remaining P-APD funding. In summary, NC DHHS was more efficient in planning for HIT than originally estimated. For the planning phase of the project, the total cost was $847,012 (FFP $762,311 at 90%). NC DHHS completed the planning phase with $1,708,108 in unspent P-APD funds (FFP $1,537,297 at 90%).

	Approved P-APD		
Activity Type	**State**	**Federal**	**Total**
State Employees	25,190	226,710	251,900
Contracted State Staff	23,760	213,840	237,600
Vendor (CSC)	196,372	1,767,348	1,963,720
Hardware & Software Costs	440	3,960	4,400
Direct Non-Personnel Costs (Rent, Supplies, Telephone, Travel)	19,510	75,590	95,100
Indirect Costs (Allocated Personnel, Furniture)	1,200	1,200	2,400
Total Project Costs	**$266,472**	**$2,288,648**	**$2,555,120**
	P-APD Expenditures to Date		
Activity Type	**State**	**Federal**	**Total**
State Employees	10,213	91,918	102,131
Contracted State Staff	50,804	457,239	508,043
Vendor (CSC)	22,707	204,362	227,069
Hardware & Software Costs	0	0	0
Direct Non-Personnel Costs (Rent, Supplies, Telephone, Travel)	977	8,792	9,769
Indirect Costs (Allocated Personnel, Furniture)	0	0	0
Total Project Costs	**$84,701**	**$762,311**	**$847,012**

Activity Type	Remaining P-APD Funding		
	State	Federal	Total
State Employees	14,977	134,792	149,769
Contracted State Staff	(27,044)	(243,399)	(270,443)
Vendor (CSC)	173,665	1,562,986	1,736,651
Hardware & Software Costs	440	3,960	4,400
Direct Non-Personnel Costs (Rent, Supplies, Telephone, Travel)	8,533	76,798	85,331
Indirect Costs (Allocated Personnel, Furniture)	240	2,160	2,400
Total Project Costs	**$170,811**	**$1,537,297**	**$1,708,108**

Table 2 - P-APD Funding Summary

3 Statement of Needs and Objectives

3.1 Current Environment Summary

The North Carolina Medicaid Incentive Payment Solution (NC-MIPS) was built in 2010-2011 and managed and housed at the Office of Medicaid Management Information Systems Services. North Carolina implemented a replacement MMIS called the NC Transparent Reporting, Accounting, Collaboration, and Knowledge Management system (NCTracks). NCTracks went live in July 2013.

In 2013, NC-MIPS moved to state servers to achieve cost savings. Program support—including policy, outreach, monitoring, and oversight—is provided by the DMA HIT Team. For more about how the HIT program is integrated with NC MMIS and Medicaid Information Technology Architecture (MITA) initiatives, see the *Executive Summary* and *Section A.8* in the NC SMHP. (Note: all SMHP references in this document refer to version 4.1 unless otherwise specified.)

The DMA HIT team anticipates working closely with the North Carolina Health Information Exchange Authority (NC HIEA) in FFYs 2017 – 2018. The 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. On February 29, 2016, the NC HIE transitioned from the Community Care of North Carolina (CCNC) / North Carolina Community Care Networks (N3CN) structure to the new statewide NC HIEA. Currently, the NC HIEA is in the process of establishing new HIE guidelines, services, and stakeholder agreements. NC HIEA is working diligently to onboard current NC HIE participants, and then will shift its focus to health care providers who want to connect for the first time.

We will submit a separate update regarding the NC HIEA at a later date.

3.2 New System Needs, Objectives, and Anticipated Benefits

The DMA HIT team is responsible for planning and executing NC-MIPS development and enhancement efforts. The objectives of the NC-MIPS development effort—past, present, and future—include the following:

- Meet the proposed CMS schedule for testing interfaces with North Carolina in August 2010; meet all CMS interface testing dates for Tier One of states in 2010 and 2011, leading to a go-live of NC-MIPS no later than January 1, 2011 (completed);
- Separate the design and development of NC-MIPS from ongoing NCTracks efforts and avoid any negative impact to the NCTracks implementation schedule (completed);
- Design NC-MIPS to integrate with current systems initially, but to allow easy integration to NCTracks later (completed);
- Make payments at the earliest possible date (achieved in March 2011);
- Enhance NC-MIPS to accommodate Meaningful Use attestation in 2012 (achieved in August 2012);
- Complete changes in MIPS to be in compliance with CMS changes - Stage 1 CQM's- New 64 CQM's replace Core CQM, Alternate CQM & Additional CQM for MU Attestations for Program Year 2014 (achieved in September 2014);
- Complete system changes in NC-MIPS to be in compliance with latest CMS changes for Stage 2 MU measures (achieved in November 2014);
- Enhance NC-MIPS to quickly accommodate state and federal program changes (ongoing);
- Enhance NC-MIPS to accommodate rigorous pre- and post-payment attestation validation workflow documentation (ongoing);
- Enhance NC-MIPS to accommodate near real-time communication with the CMS Registration & Attestation (R&A) System, and thus synced federal and state program databases (ongoing);
- Enhance NC-MIPS to accommodate MU attestation under flex rule (achieved in January 2015);
- Enhance NC-MIPS to accommodate Modified Stage 2 MU (achieved in February 2016);
- System enhancement to coordinate NC-MIPS and NCID for significant time savings for attesting providers and HIT staff (achieved February 2016) and,
- Continue to improve and automate the system for optimal efficiency and cost containment (ongoing).

Tables within NC-MIPS were created to store data elements required for the registration, attestation, and incentive payment calculations, providing a complete audit trail of all activities. A Service Oriented Architecture (SOA) was used to build NC-MIPS, ensuring easy integration with NCTracks in 2013 and other state systems as needed.

Past and future benefits of this approach include:

- A quick and flexible implementation of NC-MIPS (completed);
- Ability to meet an aggressive CMS testing schedule for the National Level Repository (NLR) interfaces (completed);
- Creation of a custom NC solution that can be integrated with NCTracks, while avoiding disruption of the NCTracks implementation (completed); and,
- Accelerated design, development, testing, and implementation by building the solution in overlapping iterative phases (ongoing).

For more on NC-MIPS activities, see *Section C.4* of the SMHP.

3.3 Program Management and Oversight Activities

As stated in the SMHP, the NC Medicaid EHR Incentive Program management and oversight, including policy and outreach around HIT efforts, is carried out by the DMA HIT Team in collaboration with various stakeholder organizations. For more information on the HIT Team structure and roles/responsibilities, please see *Section C.1.2.2* the SMHP. Activities covered in this I-APD for planning, support, and continued definition of the State's ongoing HIT efforts include:

- Updates to the SMHP and I-APD for scope and requirement changes and for subsequent phases, to include meaningful use capture and verification;
- Business process modeling for all phases of the project including provider support for registration and attestation, quality assurance, audit, appeals, payment processing, budget preparation and reporting, clinical oversight, and meaningful use data analysis;
- Planning, design, and integration of NC-MIPS with NCTracks;
- Support of the NC-MIPS Help Desk and provider outreach efforts;
- Planning and execution of an annual state-level HIT/HIE conference;
- Hosting various HIT stakeholder meetings and workgroups;
- Continuous improvement of the quality assurance process used to validate incentive payments pre-payment;
- Program Integrity audits covering verification of eligibility, attestation data, and adopt, implement, or upgrade (A/I/U) and meaningful use requirements;
- Design and implementation of the appeals process for denial of incentive payments;
- Legal support for development/refinement of Data Sharing and Business Associate Agreements (BAA);
- Coordination with the NC HIEA to develop plans to achieve goals such as:
    - Ramp up connectivity between Medicaid provider EHR systems and the NC HIE;
    - Capture and report clinical quality measure data to support incentive payment eligibility;
    - Design, develop, and implement essential public health interfaces to the NC HIE; and,
- Development of a plan for data verification and analysis of reported quality measurements as well as evaluation of the EHR Incentive Program impact on cost and quality outcomes;
- Use of clinical data obtained through EHRs to impact Medicaid policy and patient care, including participation in the Medicaid Evidence-based Decision Project (MED Project) and the Drug Effectiveness Review Project (DERP); and,
- Conducting follow-up environmental scans to track EHR adoption and provider experiences statewide.

For more on HIT program activities, see *Section C* of the SMHP. Updates to the SMHP and this I-APD will occur as needed; for example, an update is planned for a later date regarding the NC HIEA.

3.4 Approved North Carolina HIT Projects and Anticipated Benefits

3.4.1 A New State HIT Website

CMS has approved the use of HITECH funds for the creation of a statewide HIT website. Creation of this website is currently on hold pending adequate staffing in the North Carolina Office of Health Information Technology (OHIT). The site will feature a dashboard to show the progress of all HIT activities within the

state. In a "HITECH" vein, the new website will have modern and edgy aesthetics and will be intuitive and easily navigable. The site will be designed to engage North Carolinians through the dashboard of HITECH progress in NC, blogs on emerging HIT/HIE issues, video presentations, and graphic interfaces for tracking MU of CEHRT and HIT activities across the state. Associated costs can be found in *Section 7.1, Table 10* of this I-APD under line item "NC HIT Website Vendor."

NC DHHS is currently hosting a basic OHIT site with links to HIT initiatives and the NC HIT annual report.

3.5 New North Carolina HIT Projects and Anticipated Benefits

3.5.1 MU^2 and the North Carolina Regional Extension Center

Moving forward with Stages 2 and 3 of Meaningful Use, North Carolina recognizes that HITECH is about much more than just using certified EHR technology to collect and submit clinical data; it's about improving health outcomes. It is with this goal in mind that North Carolina proposes to leverage the North Carolina Area Health Education Centers' (NC AHEC) Regional Extension Center (REC) existing infrastructure and strong history of adult learning to continue the work done in Stage 1 into Stages 2 and 3 of Meaningful Use, promoting the electronic exchange of health information to improve the quality and lower the cost of health care in North Carolina. NC believes these projects will approximate the federal objective of making "meaningful use of Meaningful Use," or MU^2.

The objectives tied to these initiatives are as follows:

- Help NC eligible professionals prepare for Stages 2 and 3 of Meaningful Use;
- Expand the reach of AHEC consultants beyond primary care providers to community-based specialists;
- Continue to promote patient engagement through use of electronic patient portals;
- Remove vendor-specific barriers to the achievement of all stages of Meaningful Use;
- Bring DMA information into quarterly NC AHEC collaborative meetings at targeted AHEC locations to address Medicaid and safety net providers to inform them about DHHS and DMA HIT initiatives.

DMA believes the benefits of these initiatives are substantial and requests funding for participation in these projects in the amount of $4,569,753 over FFYs 2017-2018.

For more detail on each objective, see *Section B.5.1* of the SMHP. Associated costs can be found in *Section 7.1, Table 10* of this I-APD under line item "NC AHEC/REC."

3.5.2 HITECH Safety Net Providers and the North Carolina Office of Rural Health and Community Care

The North Carolina Office of Rural Health (ORH) helps rural and underserved communities to develop innovative strategies for improving access, quality, and cost-effectiveness of health care. ORH heard the call to action of the Office of the National Coordinator for Health IT (ONC) regarding the Meaningful Use Challenge in critical access and small rural hospitals. Together with the REC, ORH has provided the expertise and leadership essential for realizing ONC's goal of 1,000 critical access and rural hospitals participating in the EHR Incentive Programs by the end of 2014.

Now, DMA proposes funding five (5) permanent FTE positions within the ORH: one (1) Rural HIT Program Manager, one (1) Rural Health Clinical Quality Improvement Specialist, one (1) Meaningful Use Specialist,

one (1) Telehealth Specialist, and one (1) Administrative Assistant to address the needs of the rural safety net providers in NC. The Rural Health IT Team will:

- Assess, inventory, anticipate, and prioritize safety net providers' technical, operational, organizational, clinical, hardware, applications, and funding needs; identify services and resources for resolving any gaps and building out needed infrastructure; and minimize risk
- Link multiple efforts such as broad band, Meaningful Use, HIE, development of quality dashboards, building infrastructure to use telehealth to expand access to key missing services (i.e. eye exams for rural diabetic patients)
- Collaborate with key business partners to support the Department's programs and new initiatives
- Contribute to the development of expert knowledge, frameworks, and strategies for quality improvement (QI), analytics, and reporting
- Plan, conduct, arrange, and participate in trainings/webinars and/or identify qualified trainers for key topics (e.g., QI, EHR, MU, MACRA, NC HIE, and maximizing the use of clinical and claims data to improve the quality of patient care)
- Assist safety net providers in attesting to Meaningful Use
- When appropriate, link resources and assist with PCMH certification
- Serve as the primary contact for safety net providers participating in North Carolina's universal EHR platform (if developed).
- Develop, oversee, and monitor all contracts (i.e. providers, HIE)

ORH has committed to providing the 10% state match required by the acceptance of 90% Federal Financial Participation (FFP). The positions are planned for at a combined annual salary and benefit package of $439,277 (benefits calculated at 28%). The budget includes costs for staff travel, training events and materials, equipment, contractual support, and supplies totaling $62,790. The total funding request herein for FFYs 2016-2017 is $502,067 ($451,860 FFP + $50,207 ORH match). NOTE: More detail on the role these five staff would play in engaging rural providers in HIT efforts is provided in the SMHP. Associated costs can be found in Section 7.1, Table 10 of this I-APD under line item "ORH."

3.5.3 MU^2 and the Medicaid Evidence-Based Decision and Drug Effectiveness Review Projects

DMA is requesting funding to continue participation in two initiatives coordinated by the Oregon Health Sciences University's Center for Evidence-based Policy. These are the Medicaid Evidence-based Decision Project (MED Project) and the Drug Effectiveness Review Project (DERP). The MED Project is a collaboration of 11 state agencies, primarily Medicaid, with a mission to provide policy-makers the tools and resources to make evidence-based decisions. The DERP Project is a collaborative of state Medicaid and public pharmacy programs that have joined forces to provide concise, comparative, evidence-based products that assist policymakers 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. Many of these reports and activities dovetail with the clinical quality measures on which EPs and EHs must report for demonstrating Meaningful Use under the Medicaid EHR Incentive Program. Expanding availability of

evidence-based resources provides North Carolina more robust sources of data and information on which to base sound decision-making around best practices.

DMA has participated for three years, 2014 through 2016, and believes the benefits of both MED and DERP are substantial. This update requests that funding continue for FFY 2017 and 2018 in the amount of $95,500/year for DERP and $153,000/year for MED.

For more detail on MED/DERP, see *Section B.5.3* of the SMHP. Associated costs can be found in *Section 7.1, Table 14* of this I-APD under line item "MED/DERP."

4 Statement of Alternative Considerations

In June and July of 2010, North Carolina OMMISS undertook an effort to develop a High-level Definition and Alternative Analysis of NC-MIPS. That document was the basis for much of the information noted above in terms of requirements, functionality, components, and high-level architecture. The conclusion of the analysis was that none of the other state or vendor efforts to create a state-level incentive payment solution were far enough along to either evaluate or estimate effort of trying to share components in order to meet a deadline of August 26, 2010 for CMS interface testing. Therefore, OMMISS decided to move forward with a fast-track design and development effort for NC-MIPS.

In the fall of 2011, DMA developed another alternatives analysis to examine systems and development options moving forward with Phase 3 and beyond of NC-MIPS. After careful consideration of the opportunities afforded by each approach, DMA and OMMISS decided to bring all NC-MIPS future development in-house at OMMISS/DMA and explore leveraging parts of Kentucky's incentive payment solution to enhance and improve the current NC-MIPS. After further research in early 2012, DMA found Kentucky's solution to be a whole-system replacement and opted to move forward instead with planned NC-MIPS enhancements.

In April 2012, DMA assumed management of technical development for NC-MIPS from OMMISS. By this time, the DMA HIT team was fully staffed and both organizations determined it would be more efficient and cost-effective to maintain and enhance NC-MIPS alongside other program staff. This cost savings is reflected in the sharp decrease in MMIS funds requested (largely in the vendor costs category) in Appendix A of this I-APD. The HITECH funding request in Section 7 of this I-APD was adjusted upward in the contract staff and hardware/software line items to accommodate these activities, but at a much lower overall cost.

5 Personnel and Contract Resource Statement

NC DHHS staffs HIT initiatives with a combination of state and contractor resources. DMA staff makes up the majority of personnel contributing to administration and oversight of the NC Medicaid EHR Incentive Program. DMA's Director, along with the Director of IT and the HIT Program Manager, provides executive project management support and represents the project to executive staff. The Assistant Director for Clinical Policy & Programs and the HIT Assistant Program Manager provide policy guidance and work on planning efforts to integrate HIT systems and clinical data into DMA's policy development.

Additional DMA staff in Program Integrity, Finance, Budget Management, and Information Technology, provides program support in the areas of outreach, policy, reporting, operations, management, and oversight.

Figure 1 depicts the organizational structure for the Medicaid HIT Program in the context of the NC Department of Health and Human Services.

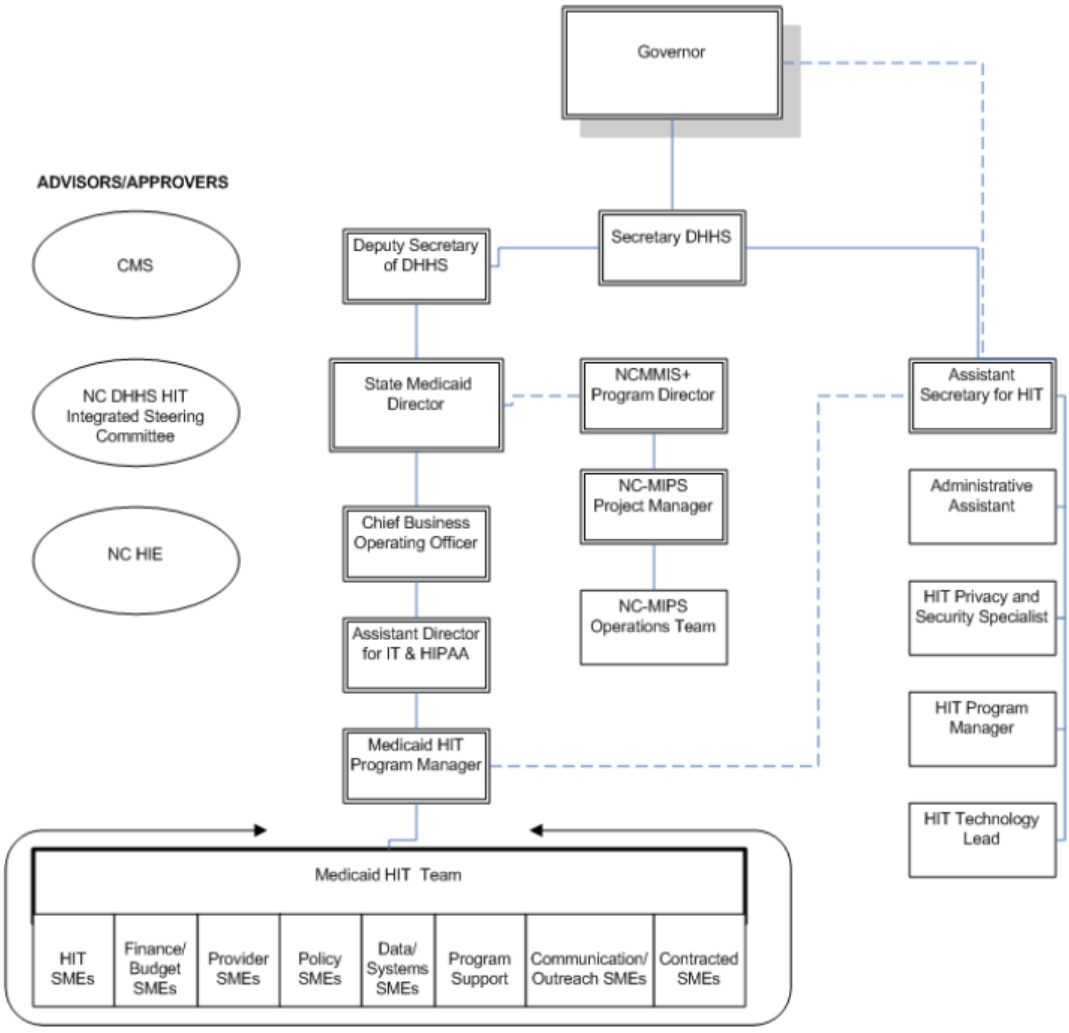


Figure 1 - North Carolina Medicaid HIT Organizational Structure

5.1 State Staffing Requirements

Resource requirements to administer the NC Medicaid EHR Incentive Program include a combination of Department and contractor, full-time and part-time staff. **Table 3** below presents a list of state staffing requirements through FFY 2018. Technical resources for the NC-MIPS development effort at DMA occur via the NC Statewide IT Procurement Short Term IT Staffing Contract. In FFY 2017, DMA will look to create

state positions for a limited number of technical resources to maintain the NC-MIPS system, thereby reducing reliance on contract employees and saving state and federal dollars.

	FFY 2017			FFY 2018		
State Staff Title	**% of Time**	**Project Hours**	**Cost With Benefits**	**% of Time**	**Project Hours**	**Cost With Benefits**
Director	5%	104	17,379	5%	104	17,379
Assistant Director, Clinical Policy	5%	104	7,106	5%	104	7,106
Assistant Director, Budget	5%	104	6,346	5%	104	6,346
Director, IT & HIPAA	10%	208	13,670	10%	208	13,670
Finance Section Chief	5%	104	5,236	5%	104	5,236
IT Special Projects Chief	5%	104	5,765	5%	104	5,765
IT Analytical Chief	5%	104	5,420	5%	104	5,420
Division Program Executive	5%	104	4,764	5%	104	4,764
HIT Program Manager	100%	2,080	92,442	100%	2,080	92,442
HIT Assistant Program Manager	100%	2,080	82,818	100%	2,080	82,818
HIT Data Specialist	100%	2,080	66,409	100%	2,080	66,409
NC-MIPS System Manager	100%	2,080	106,624	100%	2,080	106,624
HIT Communications Specialist	100%	2,080	66,409	100%	2,080	66,409
HIT Provider Relations Lead	100%	2,080	66,409	100%	2,080	66,409
HIT Provider Relations Specialist	100%	2,080	66,409	100%	2,080	66,409
HIT Budget Analyst	50%	1,040	40,632	50%	1,040	40,632
HIT Financial Auditor	50%	1,040	40,315	50%	1,040	40,315
QA Specialist	100%	2,080	99,750	100%	2,080	99,750
HIT Investigator	100%	2,080	66,409	100%	2,080	66,409
HIT Investigator	100%	2,080	66,409	100%	2,080	66,409
HIT Investigator	100%	2,080	66,409	100%	2,080	66,409
OHIT Technology Lead	75%	1,560	113,101	75%	1,560	113,101
OHIT Project Manager	50%	1,040	50,459	50%	1,040	50,459
OHIT Communications Specialist/Webmaster	75%	1,560	75,213	75%	1,560	75,213
Grand Totals	**14.45**	**30,056**	1,231,904	**14.45**	**30,056**	1,231,904

Table 3 - State Staffing Requirements

State Staff Title	Description of Responsibilities
DMA	
Director	Oversees all NC Medicaid activities
Assistant Director, Clinical Policy	Directs all NC Medicaid clinical policy units
Assistant Director, Budget	Directs all NC Medicaid budget activities
Director, IT & HIPAA	Directs all NC Medicaid IT and Health Insurance Portability and Accountability Act (HIPAA) activities
Finance Section Chief	Oversees HIT Financial Auditor, assists with Finance policy creation related to HIT
Program Integrity Chief	Oversees PI auditors' activities related to HIT
IT Special Projects Chief	Directs all NC Medicaid IT related special projects
IT Analytics Chief	Directs all NC Medicaid IT analytic endeavors
Division Program Executive	Serves as a liaison between OMMISS and DMA for HIT activities at the executive level
HIT Program Manager	Oversees NC Medicaid EHR Incentive Program administration
HIT Assistant Program Manager	Leads clinical quality improvement initiatives, including meaningful use planning and performance metrics
HIT Administrative Assistant	Provide administrative support to the DMA HIT Team
HIT Data Specialist	Designs and leads HIT data analytics
NC-MIPS System Manager	Analyzes and directs NC-MIPS development and operations processes at OMMISS on behalf of DMA HIT Team
HIT Communication Specialist	Crafts and executes HIT Communication Plan; maintains the SMHP and program IAPDs
HIT Provider Relations Lead	Subject matter expert (SME) on clinical policy, DMA policy, and all federal regulations governing HIT
HIT Provider Relations Specialist	SME in program eligibility and provider communications; create/implement HIT eligibility appeals process
HIT Budget Analyst	Manages HIT State budget, performs financial reporting and forecasting for CMS
HIT Financial Auditor	SME for hospital payment calculations, hospital outreach, and HIT policy related to hospitals
HIT Program Integrity Auditors	Creates and implements pre- and post-payment audit processes for HIT
OHIT	
OHIT Technology Lead	Advises on technology infrastructure decisions related to integrating state systems with the NC HIE
OHIT Communications/Webmaster	Designs, implements, and manages the enhanced state HIT website
OHIT Project Manager	Manages a diverse portfolio of state HIT initiatives

Table 4 - State Staffing Job Descriptions

5.2 Contractor Staffing Requirements

In addition to state personnel, DMA employs contractors for incentive payment system support. These costs have remained high as we have modified NC-MIPS for Stage 2 and Modified Stage 2 Meaningful Use. DMA plans to streamline technical staff and convert key positions to State Staff in FFYs 2017-2018 to manage updating and ongoing maintenance of NC-MIPS.

	FFY 2015			FFY 2016		
Contractor Staff Title	**% of Time**	**Project Hours**	**Cost With Benefits**	**% of Time**	**Project Hours**	**Cost With Benefits**
.Net UI Developer	100%	2,080	174,720	100%	2080	174,720
.Net Developer	100%	2,080	174,720	100%	2080	174,720
QA Tester	100%	2,080	124,800	100%	2080	124,800
Senior .Net Developer	100%	2,080	174,720	100%	2080	174,720
Database Administrator	100%	2,080	166,400	100%	2080	166,400
QA Specialist	100%	2,080	135,200	100%	2080	135,200
.Net Architect	100%	2,080	176,800	100%	2080	176,800
System Analyst	100%	2,080	135,200	100%	2080	135,200
Total	**8.0**	**16,640**	**$1,262,560**	**8.0**	**16,640**	**$1,262,560**

Table 5 - Contractor Staffing Requirements

Contractor Staff Title	Description of Responsibilities
NC-MIPS System Manager	Analyzes and directs NC-MIPS development and operations processes at OMMISS on behalf of DMA HIT Team
.Net UI Developer	Provide user interface development and enhancement for the NC-MIPS provider and workflow portals
.Net Developer	Provide MIPS .NET server development support
QA Tester	Test management, defect tracking, reporting, & quality assurance
Senior .Net Developer	Lead .NET system development support
Database Administrator	Maintain security of NC-MIPS infrastructure and assist with data and reporting requests as needed
QA Specialist	Test management, defect tracking, reporting, & quality assurance
.Net Architect	Technical leadership, development standards, implementation & successful solution delivery
System Analyst	Elicitation, technical analysis, documentation of design, & functional requirements

Table 6 - Contractor Staffing Job Descriptions (NC-MIPS)

5.3 HIT/HIE Contracts

In addition to the above state and contract staff, NC DMA has engaged with vendors to perform a variety of support functions for the HIT Program. **Table 7** below describes present and draft contracts funded (or where concepts were preliminarily approved for funding in a past SMHP/I-APD) by the HIT I-APDs and administered or funded by the NC Medicaid EHR Incentive Program.

Contract #	Contractor Name	Contract Duration	Contract Start Date	Contract End Date	Total Contract Cost	Responsibilities
1	North Carolina AHEC/REC	2 years	7/1/2016	6/30/2018	$4,569,753	This extends ongoing REC services through FFY 2018. Work focuses on helping NC providers achieve MU and attest for the NC Medicaid EHR Incentive Program.
2	NC ORHCC	2 years	TBD	TBD	$1,004,134	The Rural Health Team will address the needs of the rural safety net providers in NC.

Table 7 - HIT/HIE Contracts

6 Proposed Activity Schedule

The high-level project plan for HIT-related program and system activities for FFYs 2017-2018 is shown below in **Figure 2**. More detail on all of these initiatives can be found in Section 3 of this I-APD and in North Carolina's SMHP.

Task	Start	Finish	FFY 2017	FFY 2018
NC-MIPS and Attestation Validation Portal (AVP)				
System updates for Program Year 2016 MU	5/2016	7/2016		
Complete Prog Year 2015 validations (AVP)	3/2016	10/2016		
Complete transition from MPNs	7/2016	9/2016		
Referral rule updates (AVP only)	7/2016	12/2016		
Enhancement of documentation	7/2013	ongoing		
System updates for Program Year 2017 MU	9/2016	9/2016		
System updates for Stage 3 MU	10/2016	4/2017		
System updates as required by CMS	2011	ongoing		
Program Oversight & Outreach				
Provider outreach via Help Desk	11/2010	ongoing		
Pre-payment validation	2/2011	ongoing		
Post-payment auditing	2/2013	ongoing		
Enhancement of program website	8/2013	ongoing		
Outreach project for final year of AIU	7/2016	4/30/2017		
Other Projects				
NC Regional Extension Center	2014	ongoing		
NC Office of Rural Health and Community Care	2017	ongoing		
MED/DERP	2014	ongoing		

Figure 2 - High Level Activity Schedule 2017-2018

In the first three quarters of FFY 2017, the NC Medicaid Incentive Program will focus on a final outreach push to providers who have not yet attested, because Program Year 2016 is the last program year to begin participation. The program will continue with Modified Stage 2 MU and gear up for Stage 3 MU.

7 Proposed Budget

7.1 Proposed HITECH Project Budget

This section details former projected budget and actuals for FFYs 2011-2015, actuals for FFY 2016 through June 6, 2016, and an estimated budget for FFYs 2017-2018 of the implementation phase of the NC Medicaid EHR Incentive Program. This section includes a summary of state and federal funding distribution and applicable planning assumptions.

Tables 8, 9, 10 and 11 below summarize approved, expended, and remaining I-APD HITECH-only funds for FFYs 2011-2015. FFY 2016 reflects actuals through June 6, 2016. Note that the majority of expended funds for building NC-MIPS and launching the program in FFYs 2011-2012 are represented in **Tables 15 and 16** in Appendix A of this I-APD. Delays in hiring state staff and procuring vendor services (line items: State Personnel and Vendors) accounted for the largest planned but unexpended cost categories for FFYs 2011-2012.

	Approved I-APD		
Activity Type	**State**	**Federal**	**Total**
State Personnel	164,803	1,483,229	1,648,032
Contracted State Staff	21,600	194,400	216,000
Vendors	260,050	2,340,450	2,600,500
Hardware & Software Costs	2,500	22,500	25,000
Direct Non-Personnel Costs	16,400	147,600	164,000
Total Project Spend	**$465,353**	**$4,188,179**	**$4,653,532**
	I-APD Expenditures to Date		
Activity Type	**State**	**Federal**	**Total**
State Personnel	47,076	423,686	470,762
Contracted State Staff	0	0	0
Vendors	0	0	0
Hardware & Software Costs	100	900	1,000
Direct Non-Personnel Costs	100	900	1,000
Total Project Spend	**$47,276**	**$425,486**	**$472,762**
	Remaining I-APD Funding		
Activity Type	**State**	**Federal**	**Total**
State Personnel	117,727	1,059,543	1,177,270
Contracted State Staff	21,600	194,400	216,000
Vendors	260,050	2,340,450	2,600,500
Hardware & Software Costs	2,400	21,600	24,000
Direct Non-Personnel Costs	16,300	146,700	163,000
Total Project Spend	**$418,077**	**$3,762,693**	**$4,180,770**

Table 8 - I-APD HITECH Spending Summary, FFY 2011

Total project spend in FFY 2011, including HITECH and MMIS expenditures, was $6,240,511 (FFP $5,616,460 at 90%).

Activity Type	Approved I-APD		
	State	Federal	Total
State Personnel	184,211	1,657,900	1,842,111
Contracted State Staff	0	0	0
Vendors	270,050	2,430,450	2,700,500
Hardware & Software Costs	18,500	166,500	185,000
Direct Non-Personnel Costs	5,760	51,840	57,600
Total Project Spend	**$478,521**	**$4,306,690**	**$4,785,211**
Activity Type	**I-APD Expenditures to Date**		
	State	**Federal**	**Total**
State Personnel	35,087	315,781	350,868
Contracted State Staff	9,698	87,278	96,975
Vendors	0	0	0
Hardware & Software Costs	1,296	11,666	12,962
Direct Non-Personnel Costs	1,268	11,408	12,676
Total Project Spend	**$47,349**	**$426,133**	**$473,481**
Activity Type	**Remaining I-APD Funding**		
	State	**Federal**	**Total**
State Personnel	149,124	1,342,119	1,491,243
Contracted State Staff	-9,698	-87,278	-96,975
Vendors	270,050	2,430,450	2,700,500
Hardware & Software Costs	17,204	154,834	172,038
Direct Non-Personnel Costs	4,492	40,432	44,924
Total Project Spend	**$431,172**	**$3,880,557**	**$4,311,730**

Table 9 - I-APD HITECH Funding Summary, FFY 2012

Total project spend in FFY 2012, including HITECH and MMIS expenditures, was $3,315,286 (FFP $2,983,757 at 90%). Costs incurred in the Contracted State Staff line item were due to a contractor budgeted with MMIS funds that were transferred under DMA in early FFY 2012.

As noted above, in previous versions of this I-APD, NC-MIPS was developed and maintained at OMMISS and utilized MMIS funding; for this reason, the MMIS funding request and spend was previously larger than the HITECH funding request. Over 2012 and into early 2013, NC transferred ongoing development, hosting, and maintenance activities associated with NC-MIPS and its operations to DMA, resulting in a transfer of contract staff from OMMISS to DMA and thus a reallocation of approved MMIS funding to the below HITECH categories. These changes have resulted in improved organizational efficiencies and overall cost savings to NC and CMS, as represented by the total funding request (HITECH and MMIS combined) for FFYs 2013-2014 related to state personnel, contract personnel, and hardware and software needs.

Activity Type	Approved I-APD		
	State	Federal	Total
State Personnel	107,998	971,984	1,079,982
Contracted State Staff	104,434	939,906	1,044,340
Hardware & Software Costs	15,639	140,753	156,392
Direct Non-Personnel Costs	4,884	43,959	48,843
Vendors/State Partners:			
N3CN	245,050	2,205,450	2,450,500
NC HIT Website	10,000	90,000	100,000
DPH	85,962	773,662	859,624
NC AHEC/REC	62,883	565,942	628,825
ORHHC	8,477	76,292	84,769
MED & DERP Projects	0	0	0
HIT Conference	206	1,858	2,064
PCG	18,600	167,400	186,000
HIT HIE	171,220	1,540,976	1,712,196
Total Project Costs	**$835,353**	**$7,518,182**	**$8,353,535**
Activity Type	**I-APD Expenditures to Date**		
	State	**Federal**	**Total**
State Personnel	77,097	693,873	770,970
Contracted State Staff	115,986	1,043,876	1,159,862
Hardware & Software Costs	1,154	10,384	11,538
Direct Non-Personnel Costs	1,815	16,331	18,146
Vendors/State Partners:			
N3CN	20,336	183,024	203,360
NC HIT Website	0	0	0
DPH	0	0	0
NC AHEC/REC	0	0	0
ORHHC	0	0	0
MED & DERP Projects	0	0	0
HIT Conference	0	0	0
PCG	0	0	0
HIT HIE	171,220	1,540,976	1,712,196
Total Project Costs	**$387,608**	**$3,488,464**	**$3,876,072**
Activity Type	**Remaining I-APD Funding**		
	State	**Federal**	**Total**
State Personnel	30,901	278,111	309,012
Contracted State Staff	-11,552	-103,970	-115,522

Hardware & Software Costs	14,485	130,369	144,854
Direct Non-Personnel Costs	3,069	27,628	30,697
Activity Type	**Remaining I-APD Funding**		
Vendors/State Partners:			
N3CN	224,714	2,022,426	2,247,140
NC HIT Website	10,000	90,000	100,000
DPH	85,962	773,662	859,624
NC AHEC/REC	62,883	565,942	628,825
ORHHC	8,477	76,292	84,769
MED & DERP Projects	0	0	0
HIT Conference	206	1,858	2,064
PCG	18,600	167,400	186,000
HIT HIE	0	0	0
Total Project Costs	**$447,745**	**$4,029,718**	**$4,477,463**

Table 10 - I-APD HITECH Funding Summary, FFY 2013

Total project spend in FFY 2013, including HITECH and MMIS expenditures, was $4,312,069 (FFP $3,880,862 at 90%).

On January 13, 2012, a separate I-APD to support Medicaid's fair share of NC HIE core services development and implementation was submitted to CMS. On March 1, 2012, CMS approved this request in the amount of $1,712,196 (FFP $1,540,976 at 90%) for FFY 2012 and FFY 2013. That amount has been added to the HIT HIE Approved line above.

Activity Type	**Approved I-APD**		
	State	**Federal**	**Total**
State Personnel	112,095	1,008,855	1,120,950
Contracted State Staff	61,152	550,368	611,520
Hardware & Software Costs	15,889	143,003	158,892
Direct Non-Personnel Costs	4,180	37,620	41,800
Vendors/State Partners:			
N3CN	228,540	2,056,860	2,285,400
NC HIT Website	10,000	90,000	100,000
DPH	86,212	775,912	862,124
NC AHEC/REC	249,863	2,248,770	2,498,633
ORHHC	8,477	76,292	84,769
MED & DERP Projects	24,366	219,291	243,657
HIT Conference	5,000	45,000	50,000
PCG	18,600	167,400	186,000
HIT HIE	0	0	0

Oregon Health	0	0	0
Total Project Costs	**$824,375**	**$7,419,371**	**$8,243,745**
Activity Type	**I-APD Expenditures to Date**		
	State	**Federal**	**Total**
State Personnel	55,292	497,624	552,916
Contracted State Staff	52,617	473,557	526,174
Hardware & Software Costs	1,183	10,648	11,831
Direct Non-Personnel Costs	3,772	33,952	37,725
Vendors/State Partners:			
N3CN	82,480	742,320	824,800
NC HIT Website	0	0	0
DPH	0	0	0
NC AHEC/REC	0	0	0
ORHHC	0	0	0
MED & DERP Projects	30,457	274,115	304,572
HIT Conference	0	0	0
PCG	0	0	0
HIT HIE	0	0	0
Total Project Costs	**$225,802**	**$2,032,216**	**$2,258,018**
Activity Type	**Remaining I-APD Funding**		
	State	**Federal**	**Total**
State Personnel	56,803	511,231	568,034
Contracted State Staff	8,535	76,811	85,346
Hardware & Software Costs	14,706	132,355	147,061
Direct Non-Personnel Costs	408	3,668	4,075
Vendors/State Partners:			
N3CN	146,060	1,314,540	1,460,600
NC HIT Website	10,000	90,000	100,000
DPH	86,212	775,912	862,124
NC AHEC/REC	249,863	2,248,770	2,498,633
ORHHC	8,477	76,292	84,769
MED & DERP Projects	-6,092	-54,824	-60,915
HIT Conference	5,000	45,000	50,000
HIT HIE	0	0	0
Total Project Costs	**$579,973**	**$5,219,755**	**$5,799,727**

Table 11 - I-APD HITECH Funding Summary, FFY 2014

The above table contains actuals for FFY 2014.

Hardware & Software Costs include PC and printer equipment, NC-MIPS hosting costs, and DPH/HIE software and IT equipment.

*Direct Non-Personal Costs include items such as rent, supplies, telephone, travel, conference registration fees, professional development for staff, office furniture, etc.

Activity Type	Approved I-APD		
	State	Federal	Total
State Personnel	117,324	1,055,918	1,173,242
Contracted State Staff	126,256	1,136,304	1,262,560
Hardware & Software Costs	8,700	78,300	87,000
Direct Non-Personnel Costs	7,660	68,940	76,600
Vendors/State Partners:			
N3CN	248,540	2,236,860	2,485,400
NC AHEC/REC	249,863	2,248,770	2,498,633
ORHHC	8,477	76,292	84,769
MED & DERP Projects	24,366	219,291	243,657
HIT Conference	5,000	45,000	50,000
Total Project Costs	**$796,186**	**$7,165,675**	**$7,961,861**
Activity Type	**I-APD Expenditures to Date**		
	State	**Federal**	**Total**
State Personnel	70,443	633,988	704,432
Contracted State Staff	80,015	720,137	800,152
Hardware & Software Costs	73	656	729
Direct Non-Personnel Costs	4,838	43,544	48,382
Vendors/State Partners:			
N3CN	73,300	659,700	733,000
NC AHEC/REC	83,864	754,779	838,643
ORHHC	0	0	0
MED & DERP Projects	24,608	221,471	246,079
HIT Conference	0	0	0
Total Project Costs	**$337,142**	**$3,034,274**	3,371,416
Activity Type	**Remaining I-APD Funding**		

	State	Federal	Total
State Personnel	46,881	421,930	468,810
Contracted State Staff	46,241	416,167	462,408
Hardware & Software Costs	8,627	77,644	86,271
Direct Non-Personnel Costs	2,822	25,396	28,218
Vendors/State Partners:			
N3CN	175,240	1,577,160	1,752,400
NC AHEC/REC	165,999	1,493,991	1,659,990
ORHHC	8,477	76,292	84,769
MED & DERP Projects	-242	-2,180	-2,422
HIT Conference	5,000	45,000	50,000
Total Project Costs	**$459,044**	**$4,131,401**	**$4,590,445**

Table 12 - I-APD HITECH Funding Summary, FFY 2015

Activity Type	**Approved I-APD**		
	State	**Federal**	**Total**
State Personnel	117,324	1,055,918	1,173,242
Contracted State Staff	126,256	1,136,304	1,262,560
Hardware & Software Costs	8,700	78,300	87,000
Direct Non-Personnel Costs	7,660	68,940	76,600
Vendors/State Partners:			
N3CN	248,540	2,236,860	2,485,400
NC AHEC/REC	249,863	2,248,770	2,498,633
ORHHC	8,477	76,292	84,769
MED & DERP Projects	24,366	219,291	243,657
HIT Conference	5,000	45,000	50,000
Total Project Costs	**$796,186**	**$7,165,675**	**$7,961,861**
Activity Type	**I-APD Expenditures to Date**		
	State	**Federal**	**Total**
State Personnel	72,888	655,993	728,881
Contracted State Staff	64,965	584,683	649,648
Hardware & Software Costs	0	0	0
Direct Non-Personnel Costs	4,096	36,866	40,962
Vendors/State Partners:			
N3CN	67,260	605,343	672,603

NC AHEC/REC	165,913	1,493,220	1,659,133
ORHHC	0	0	0
MED & DERP Projects	27,075	243,675	270,750
HIT Conference	5,000	45,000	50,000
Total Project Costs	**$407,198**	**$3,664,779**	**$4,071,977**
Activity Type	**Remaining I-APD Funding**		
	State	**Federal**	**Total**
State Personnel	44,436	399,925	444,361
Contracted State Staff	61,291	551,621	612,912
Hardware & Software Costs	8,700	78,300	87,000
Direct Non-Personnel Costs	3,564	32,074	35,638
Vendors/State Partners:			
N3CN	181,280	1,631,517	1,812,797
NC AHEC/REC	83,950	755,550	839,500
ORHHC	8,477	76,292	84,769
MED & DERP Projects	-2,709	-24,384	-27,093
HIT Conference	0	0	0
Total Project Costs	**$388,988**	**$3,500,896**	**$3,889,884**

Table 13 - I-APD HITECH Funding Summary, FFY 2016 as of 6/6/16

HITECH funds are requested for FFYs 2017-2018 as described below.

FFY 2017					
Cost Category	**90% Federal Share**	**75% Federal Share**	**50% Federal Share**	**10% State Share**	**Total**
State Personnel	1,108,714	-	0	123,190	1,231,904
Contract Personnel	1,136,304	0	0	126,256	1,262,560
Hardware & Software Costs	78,300	0	0	8,700	87,000
Direct Non-Personnel Costs	68,940	0	0	7,660	76,600
Vendors/State Partners:					
NC AHEC/REC	2,025,439	0	0	225,049	2,250,488
ORHHC	451,860	0	0	50,207	502,067
MED & DERP Projects	223,650	0	0	24,850	248,500
HIT Conference	45,000	0	0	5,000	50,000
Total Costs	**$5,138,207**	**$0**	**$0**	**$570,911**	**$5,709,119**
FFY 2018					
Cost Category	**90% Federal Share**	**75% Federal Share**	**50% Federal Share**	**10% State Share**	**Total**
State Personnel	1,108,714	-	0	123,190	1,231,904
Contract Personnel	1,136,304	0	0	126,256	1,262,560
Hardware & Software Costs	78,300	0	0	8,700	87,000
Direct Non-Personnel Costs	68,940	0	0	7,660	76,600
Vendors/State Partners:					
NC AHEC/REC	2,087,339	0	0	231,927	2,319,265
ORHHC	451,860	0	0	50,207	502,067
MED & DERP Projects	223,650	0	0	24,850	248,500
HIT Conference	45,000	0	0	5,000	50,000
Total Costs	**$5,200,106**	**$0**	**$0**	**$577,790**	**$5,777,896**

Table 14 - Proposed HITECH Budget, FFYs 2017-2018

7.1.1 Total Funding Request

A HITECH project cost of $11,487,015 (FFP $10,338,314 at 90%) is estimated to support the Medicaid EHR Incentive Program for FFYs 2017-2018. Incentive payment projections for FFYs 2017-2018 can be found in Appendix B of this I-APD.

The state share of this project will be satisfied with state appropriations and in-kind funding sources. NC DHHS certifies that it has available its share of the funds required to complete the activities described in this I-APD. The state requests approval to proceed with federal funding at the below levels.

FFY	MMIS @ 90% FFP	HITECH @ 90% FFP	HITECH @ 100% FFP (Incentive Payments)	Total
FFY 17	$0	$5,138,207	$36,994,283	$42,132,490
FFY 18	$0	$5,200,106	$22,657,237	$27,857,343
Total Costs	$0	$11,487,015	$59,651,520	$71,138,534
Federal Share	$0	$10,338,314	$59,651,520	$69,989,833

Table 15 - Total Federal Funding Request, FFYs 2017-2018

Budget Assumptions

The following budget assumptions were made in compiling the projected cost of the NC Medicaid HIT Program:

- Only costs associated with activities and functionalities addressed in North Carolina's SMHP are included in this I-APD. To the extent possible, existing state staff is utilized. Travel costs have been included for various stakeholder and professional development meetings.
- Vendor costs represent a total solution cost (i.e., including travel, hardware, software, networking, etc.). Vendor costs were given by vendors as high-level, unbinding estimates.
- Provider incentive payments have been requested on the CMS-37 report and were estimated to be approximately $351 million for FFYs 2011-2016 (the program's first six years). The amount of funding requested for incentive payments in FFYs 2017-2018 is $59,651,520 (100% FFP).

The total project cost for incentive payment and all activities related to the EHR Incentive Program in FFYs 2017-2018 is $71,138,534 (FFP $69,989,833 at 90% and 100%).

8 Cost Allocation Plan for Implementation Activities

8.1 Prospective Cost Allocation

NC is not receiving funding from other sources at this time; thus, the 90/10 FFP cost allocation method is the only one that applies to the HIT Program. The below table shows the 90% FFP cost allocation on a quarterly basis.

	FFY 2017					FFY 2018				
State Cost Category- HITECH	Oct - Dec	Jan - Mar	Apr - Jun	Jul - Sep	**Total**	Oct - Dec	Jan - Mar	Apr - Jun	Jul - Sep	**Total**
State Personnel	277,179	277,179	277,179	277,179	**1,108,714**	277,178	277,178	277,178	277,178	**1,108,714**
Contracted State Staff	284,076	284,076	284,076	284,076	**1,136,304**	284,076	284,076	284,076	284,076	**1,136,304**
Vendors	686,487	686,487	686,487	686,487	**2,745,949**	701,962	701,962	701,962	701,962	**2,807,849**
Hardware & Software Costs	19,575	19,575	19,575	19,575	**78,300**	19,575	19,575	19,575	19,575	**78,300**
Direct Non-Personnel Costs	17,235	17,235	17,235	17,235	**68,940**	17,235	17,235	17,235	17,235	**68,940**
Total Costs	**$1,284,552**	**$1,284,552**	**$1,284,552**	**$1,284,552**	**$5,138,207**	**$1,300,027**	**$1,300,027**	**$1,300,027**	**$1,300,027**	**$5,200,106**

Table 16 - Quarterly Incentive Program Administrative Costs (90% FFP)

9 Assurances, Security, Interface Requirements, and Disaster Recovery Procedures

9.1 Assurances, Security, and Disaster Recovery Procedures

NC DHHS confirms that it will adhere to the CMS required assurances identified from Federal regulations as marked below:

Procurement Standards (Competition/Sole Source)

- 42 CFR Part 495.348 ☑ Yes ☐ No
- SMM Section 11267 ☑ Yes ☐ No
- 45 CFR Part 95.615 ☑ Yes ☐ No
- 45 CFR Part 92.36 ☑ Yes ☐ No

Access to Records, Reporting and Agency Attestations

- 42 CFR Part 495.350 ☑ Yes ☐ No
- 42 CFR Part 495.352 ☑ Yes ☐ No
- 42 CFR Part 495.346 ☑ Yes ☐ No
- 42 CFR Part 433.112(b)(5) – (9) ☑ Yes ☐ No
- 45 CFR Part 95.615 ☑ Yes ☐ No
- SMM Section 11267 ☑ Yes ☐ No

Software & Ownership Rights, Federal Licenses, Information Safeguarding, HIPAA Compliance, and Progress Reports

- 42 CFR Part 495.360 ☑ Yes ☐ No
- 45 CFR Part 95.617 ☑ Yes ☐ No
- 42 CFR Part 431.300 ☑ Yes ☐ No
- 42 CFR Part 433.112 ☑ Yes ☐ No

Security and interface requirements to be employed for all State HIT systems

- 45 CFR 164 Securities and Privacy ☑ Yes ☐ No

9.1.1 HIPAA Compliance

NC DHHS requires its systems be fully HIPAA-compliant as mandated, including the Transaction and Code Sets Rule, Privacy Rule, Security Rule, as well as the National Provider ID and other rules that may be established. Contractors will be required to demonstrate HIPAA compliance.

9.1.2 Statewide Technical Architecture Compliance

Compliance with the North Carolina Statewide Technical Architecture (NCSTA) policies, standards and best practices as well as the all other Federal requirements and specifications as mentioned above, are mandatory for all solutions and implementations completed by this Department.

The NCSTA includes eight distinct technology domains including Application, Data, System Integration, Collaboration, Network, Security, Enterprise Management and Platform Domains. With NCTracks aligned with the CMS-defined MITA currently underway, the NC-MIPS application design addressed each of these domains separately during the design, development and implementation cycle.

9.1.3 Application & System Integration Domains

The NC-MIPS application components are implemented with an SOA and N-tier architecture design. The services infrastructure uses standards-based .NET elements that allow seamless service process integration and data sharing with other organizations and agencies. SOA is a well-suited framework for building an architecture that is flexible, agile, and able to take advantage of new technologies. The design lends itself especially well to application integration efforts due to its flexibility to accommodate both batch and real-time integration from external and internal systems.

Section 3 of the I-APD provides further details on the application and system requirements, but it can be noted here that the NC-MIPS application design considers the following as primary integration or interface points with other state and CMS applications:

- CMS R&A: The NC-MIPS application uses CMS defined messaging formats and the prescribed secure file transfer protocol to integrate with the CMS Registration & Attestation System.
- Provider Enrollment, Credentialing and Verifications Application: The Enrollment, Credentialing and Verifications Application (EVC) system serves as the authoritative source for the state's provider base information. This solution is currently running on a .NET/MS SQL Server architecture. The NC-MIPS application leverages the same technologies to establish real-time interfaces with the EVC database.
- MMIS: Once NCTracks is made operational, the NC-MIPS application will have a close coupling with its databases, and will use secure ODBC/JDBC access methods.

9.1.4 Data and Security Domains

NC-MIPS utilizes a Microsoft SQL Server platform to take advantage improved integration, data processing and analysis. The design includes all data, at rest, in use, and in motion, to be protected from unauthorized access and unauthorized disclosure by multiple layers of the security structure. Stored data (at rest) will be kept in controlled-access buildings or rooms, where access is restricted to authorized users and all access events are logged. Where appropriate and authorized by design, stored data can also be encrypted to render unusable any data obtained illegitimately from the servers.

Direct server access will not be allowed to networked users; only authorized technical staff will be able to access the servers for support and maintenance purposes. Networked access to servers (data in use) will be indirect; users will first be authenticated by a tier of access control servers (authorization and authentication services) and requests for information (data, reports, etc.) will be fulfilled by middle-tier servers which will accept the queries and retrieve appropriately authorized data from the file and data servers.

Transmitted data (in motion) will be encrypted, either by message layer security or transport layer security (TLS). Messages can be directly encrypted by clients/users before transmission, or the transport itself can be encrypted using Virtual Private Network (VPN) or Transport Layer Security (TLS/SSL) methodologies. The intent will be to enable end-to-end consistency in the encryption technologies eliminating conflicting protocols, encryption keys and mechanisms. All encryption mechanisms will be FIPS 140-2 approved, such as the Federal Advanced Encryption Standard (AES). Data transmitted in response to authorized requests will be copies of the data/file/report; no single-copy, original source data will be transmitted.

User provisioning, authorization and access control for the NC-MIPS application is based on Roles Based Access Control design, Single Sign-on and User provisioning workflows.

9.1.5 Collaboration & Platform Domains

The NC-MIPS application is a web-based solution that complies with the Section 508 Web accessibility standards as well as W3C standards. The Section 508 compliance is measured through the use of HiSoftware's AccVerify compliance testing and reporting tool. W3C compliance is measured through the use of Adobe and Total Validator tools. For provider and public facing user interfaces, the NC-MIPS application is design to be compatible with modern browsers whose usage exceeds 500,000 users nationally and at least two percent of the traffic to the NC DHHS home Web site. As of the writing of this document the top four browsers by market share include Internet Explorer, Firefox, Safari, and Google Chrome.

9.1.6 Network and Enterprise Management Domains

The NC-MIPS networked components are protected by intrusion detection and intrusion prevention technologies (e.g., network access control devices, firewalls, host intrusion prevention systems (HIPS)). Requirements include logs of network and server activities to be collected, stored and reviewed for anomalous or unauthorized activities.

Server administration includes change management (patches and system upgrades) and active monitoring of all processes and protection technologies 24 hours a day, 7 days a week.

For system failure and disaster recovery purposes, the design includes redundancy and fail-over capabilities where possible. All data storage devices are configured at a minimum RAID Level 5 configuration to facilitate the replacement of damaged storage units without loss of data. The design includes all databases and data stores to be fully backed up at least once a week with daily incremental back-ups during the week (depending on size/amount of the data). The backed-up data will be encrypted, and the back-up media will be stored off-site and rotated on a designed and tested pattern to ensure recoverability of the data. Servers, workstations, and storage media which reach out-of-service limitations will be deactivated and any internal storage media will be "wiped" clean and/or destroyed before external disposal.

The NC-MIPS solution was hosted by the CSC Albany Data Center, but for easier access and cost savings purposes, moved to North Carolina Information Technology Services (ITS) servers in 2013. Staff within the NC-MIPS Help Desk will utilize an incident response plan that details recognition of problems and authorized response activities to reduce the effects, control the spread, determine the root cause, and document the details of all detected incidents. The incident response plan will feed into the business continuity/disaster recovery plan if an incident, or several incidents, reaches the pre-determined

threshold for initiating a plan to relocate to an alternate data center requiring the restoration of the most recent data backups.

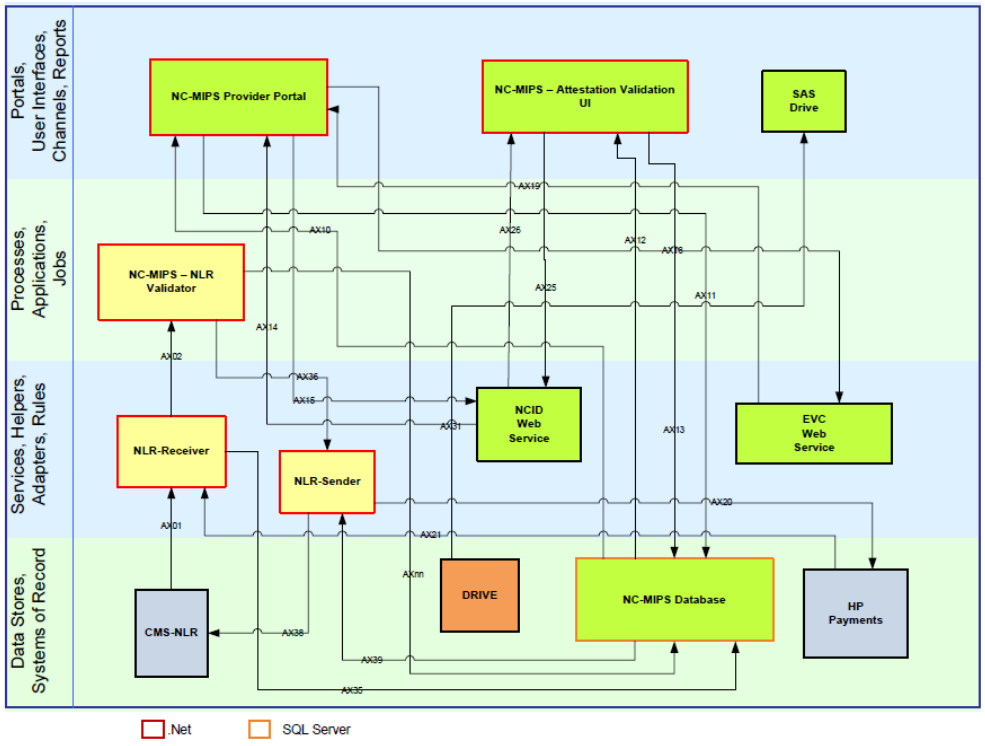
9.2 Interface Requirements

As depicted documented in the CMS "HITECH Interface Control Document," there are six interfaces between CMS and the state:

1. Interface B-6: CMS to state to send registration data;
2. Interface B-7: State to CMS for state to update CMS on registration status;
3. Interface C-5: CMS to state to send attestation information for dually eligible EHs;
4. Interface D-16: State to CMS to check for duplicate payments and exclusions;
5. Interface D-17: NLR to state to send dually eligible hospital cost report data;
6. Interface D-18: State to CMS to update CMS with state incentive payment data;

Extensible Markup Language (XML) is used as the communication protocol for interfacing with CMS through a Gentran mailbox. NC-MIPS also interfaces with the current EVC and will interface with NCTracks through web services. NC-MIPS accesses historical claims data from the legacy MMIS data warehouse (DRIVE) through asynchronous batch calls (or other comparable protocols). Relevant claims data fields are stored in the NC-MIPS database. NC-MIPS accesses data for sanctions or recoupments owed to the state via API calls or other comparable protocols.

Figure 3 below depicts NC-MIPS' system architecture components.



Appendix A: MMIS Expenditures

This section details former budgets for the implementation phase of the NC Medicaid EHR Incentive Program.

Note that there is no MMIS funding request for FFY 2017-18, as system and operations activities related to the NC Medicaid EHR Incentive Program were brought in-house to NC Medicaid during FFYs 2012-2013 and have been supported from FFY 2014 and beyond with HITECH funds.

The below is a summary of state and federal funding distribution.

Tables 17 and 18 below summarize approved, expended, and remaining MMIS-only I-APD funds for FFYs 2011-2012.

	Approved I-APD		
Activity Type	**State**	**Federal**	**Total**
State Personnel	64,645	581,809	646,454
System Hardware & Software	0	0	0
Supplies / Miscellaneous	650	5,850	6,500
Contract Personnel	31,680	285,120	316,800
Contract Services	400,915	3,608,231	4,009,146
Total Project Spend	**$497,890**	**$4,481,010**	**$4,978,900**
	I-APD Expenditures to Date		
Activity Type	**State**	**Federal**	**Total**
State Personnel	15,517	139,650	155,167
System Hardware & Software	0	0	0
Supplies / Miscellaneous	1,084	9,758	10,842
Contract Personnel	57,930	521,373	579,303
Contract Services	502,244	4,520,193	5,022,437
Total Project Spend	**$576,775**	**$5,190,974**	**$5,767,749**
	Remaining I-APD Funding		
Activity Type	**State**	**Federal**	**Total**
State Personnel	49,129	442,158	491,287
System Hardware & Software	0	0	0
Supplies / Miscellaneous	-434	-3,908	-4,342
Contract Personnel	-26,250	-236,253	-262,503
Contract Services	-101,329	-911,962	-1,013,291
Total Project Spend	**($78,885)**	**($709,964)**	**($788,849)**

Table 17 - I-APD MMIS Funding Summary, FFY 2011

Total project spend in FFY 2011, including HITECH and MMIS expenditures, was $6,240,511 (FFP $5,616,460 at 90%). OMMIS was not able to hire state staff as planned and instead saw overages in the areas of contract personnel and services.

Activity Type	Approved I-APD		
	State	Federal	Total
State Personnel	261,006	2,349,056	2,610,062
System Hardware & Software	155,145	1,396,308	1,551,453
Supplies / Miscellaneous	5,000	45,000	50,000
Contract Personnel	52,930	476,373	529,303
Contract Services	55,333	498,000	553,333
Total Project Spend	**$529,414**	**$4,764,737**	**$5,294,151**
Activity Type	**I-APD Expenditures to Date**		
	State	**Federal**	**Total**
State Personnel	84	757	841
System Hardware & Software	2,880	25,916	28,796
Supplies / Miscellaneous	643	5,790	6,433
Contract Personnel	104,336	939,019	1,043,355
Contract Services	176,238	1,586,142	1,762,380
Total Project Spend	**$284,181**	**$2,557,624**	**$2,841,805**
Activity Type	**Remaining I-APD Funding**		
	State	**Federal**	**Total**
State Personnel	260,922	2,348,299	2,609,221
System Hardware & Software	152,265	1,370,392	1,522,657
Supplies / Miscellaneous	4,357	39,210	43,567
Contract Personnel	-51,406	-462,646	-514,052
Contract Services	-120,905	-1,088,142	-1,209,047
Total Project Spend	**$245,233**	**$2,207,113**	**$2,452,346**

Table 18 - I-APD MMIS Funding Summary, FFY 2012

Total project spend in FFY 2012, including HITECH and MMIS expenditures, was $3,315,286 (FFP $2,983,757 at 90%). OMMIS was not able to hire state staff as planned and instead saw overages in the areas of contract personnel and services.

Tables 19, 20, 21, and 22 below summarize MMIS-only I-APD funds for FFYs 2013-2014.

	FFY 2013			FFY 2014		
Contractor Staff Title	**% of Time**	**Project Hours**	**Cost With Benefits**	**% of Time**	**Project Hours**	**Cost With Benefits**
NC-MIPS/NCTracks Project Manager	0.75	1,560	148,606	0.00	0	0
Operations Manager	0.40	832	80,622	0.00	0	0
Total	**1.15**	**2,392**	**$229,228**	**0.00**	**0**	**$0**

Table 19 - MMIS Budget – Contractor Personnel

Contractor Staff Title	Description of Responsibilities
NC-MIPS/NCTracks Project Manager	FFY 2013: Oversee NC-MIPS Operations Team and Help Desk FFY 2013-2014: Manage OMMISS and CSC relationship in relation to NC-MIPS/ NCTracks integration
Operations Manager	Provide overall management support and escalate appropriate issues to OMMISS and CSC executive management

Table 20 - MMIS Contractor Personnel Job Descriptions

FFY 2013					
State Cost Category	**90% Federal Share**	**75% Federal Share**	**50% Federal Share**	**10% State Share**	**Total**
State Personnel	0	0	0	0	0
System Hardware	4,500	0	0	500	5000
System Software	4,500	0	0	500	5000
Training	0	0	0	0	0
Supplies	4,500	0	0	500	5000
Total Costs	**$13,500**	**0**	**0**	**$1,500**	**$15,000**
FFY 2014					
State Cost Category	**90% Federal Share**	**75% Federal Share**	**50% Federal Share**	**10% State Share**	**Total**
State Personnel	0	0	0	0	0
System Hardware	0	0	0	0	0
System Software	0	0	0	0	0
Training	0	0	0	0	0
Supplies	0	0	0	0	0
Total Costs	**$0**	**0**	**0**	**$0**	**$0**

Table 21 - MMIS Proposed State Budget

FFY 2013					
Cost Category	**90% Federal Share**	**75% Federal Share**	**50% Federal Share**	**10% State Share**	**Total**
Contract Personnel	206,305	0	0	22,923	229,228
Contract Services	613,805	0	0	68,201	682,006
Total Costs	**$820,110**	**0**	**0**	**$91,124**	**$911,234**
FFY 2014					

FFY 2013					
Cost Category	**90% Federal Share**	**75% Federal Share**	**50% Federal Share**	**10% State Share**	**Total**
Cost Category	**90% Federal Share**	**75% Federal Share**	**50% Federal Share**	**10% State Share**	**Total**
Contract Personnel	0	0	0	0	0
Contract Services	0	0	0	0	0
Total Costs	**$0**	**0**	**0**	**$0**	**$0**

Table 22 - MMIS Proposed Contract Budget

For the reasons described in *Section 7* of this document, the total MMIS project cost for the items described in this document for FFYs 2013-2014 is $926,234 (FFP $833,610 at 90%). The $92,624 state share of this project will be satisfied with MMIS state appropriations and in-kind funding sources.

MMIS actuals for FFY 2013 were $435,997. MMIS actuals for FFY 14 through April 30, 2014 were $4,261.

No additional MMIS funding has been requested since 2014.

Appendix B: Estimates of Provider Incentive Payments by Quarter

Projected Medicaid Incentive Payments – 100% FFP HITECH Funding

The total payout of Medicaid incentives through FFY 2018 is estimated at $362 million, including $147 million to EHs and $215 million to EPs. These estimates are to be included in the CMS-37 report, but may change depending on such variables as EP and EH participation, adoption rates, and the impact of healthcare reform on the Incentive Programs. Estimates for FFYs 2017 and 2018 are based on trends from previous FFYs. Note that while the number of incentive payments shown in **Tables 23 and 24** are estimates, the numbers for FFY 2011-15 and through the second quarter of FFY 2016 reflect actuals.

FFY 2011					
	Q1	Q2	Q3	Q4	Total
EH	0	0	0	1	**1**
EP	0	0	2	53	**55**
EP - Pediatric	0	0	0	0	**0**
FFY 2012					
	Q1	Q2	Q3	Q4	Total
EH	20	0	9	6	**35**
EP	194	555	282	557	**1588**
EP - Pediatric	16	24	16	12	**68**
FFY 2013					
	Q1	Q2	Q3	Q4	Total
EH	19	22	14	5	**60**
EP	474	607	718	371	**2170**
EP - Pediatric	24	11	23	16	**74**
FFY 2014					
	Q1	Q2	Q3	Q4	Total
EH	12	21	16	16	**65**
EP	535	606	791	361	**2293**
EP - Pediatric	18	6	28	33	**85**
FFY 2015					
	Q1	Q2	Q3	Q4	Total
EH	0	35	27	7	**69**
EP	221	526	1334	198	**2279**
EP - Pediatric	4	2	47	18	**71**
FFY 2016					
	Q1	Q2	Q3	Q4	Total
EH	6	3	*12*	*2*	***23***
EP	95	206	*896*	*1003*	***2200***
EP - Pediatric	2	4	*17*	*17*	***40***
FFY 2017					
	Q1	Q2	Q3	Q4	Total
EH	*6*	*6*	*6*	*6*	***24***
EP	*550*	*550*	*550*	*550*	***2200***
EP - Pediatric	*10*	*10*	*10*	*10*	***40***
FFY 2018					
	Q1	Q2	Q3	Q4	Total
EH	*3*	*3*	*3*	*3*	***12***
EP	*525*	*525*	*525*	*525*	***2100***
EP - Pediatric	*10*	*10*	*10*	*10*	***40***
Total for FFYs 2011-2018					
EH					***253***
EP					***10585***
EP - Pediatric					***338***
Grand Total					***11,176***

Table 23 - Incentive Payments by Number per Quarter

FFY 2011					
	Q1	Q2	Q3	Q4	Total
EH	0	0	0	275,226	**275,226**
EP	0	0	42,500	1,126,250	**1,168,750**
EP - Pediatric	0	0	0	0	**0**
FFY 2012					
	Q1	Q2	Q3	Q4	Total
EH	17,582,908	0	8,391,282	2,533,126	**28,507,316**
EP	4,080,000	11,772,500	5,985,417	11,836,250	**33,674,167**
EP - Pediatric	226,672	340,008	226,672	170,004	**963,356**
FFY 2013					
	Q1	Q2	Q3	Q4	Total
EH	13,398,226	15,596,546	8,539,106	3,724,893	**41,258,771**
EP	9,328,750	11,122,250	12,154,809	5,730,417	**38,336,226**
EP - Pediatric	289,008	138,837	266,341	184,172	**878,358**
FFY 2014					
	Q1	Q2	Q3	Q4	Total
EH	5,932,315	12,571,703	7,151,090	7,238,841	**32,893,949**
EP	7,140,806	7,708,886	11,262,500	11,262,500	**37,374,691**
EP - Pediatric	153,006	59,502	255,010	247,928	**715,446**
FFY 2015					
	Q1	Q2	Q3	Q4	Total
EH	0	11,474,846	7,312,161	2,812,228	**21,599,235**
EP	2,962,250	6,587,500	15,023,750	2,970,750	**27,544,250**
EP - Pediatric	48,168	11,334	334,349	119,006	**512,857**
FFY 2016					
	Q1	Q2	Q3	Q4	Total
EH	4,429,160	1,492,144	2,047,029	*1,192,780*	***9,161,113***
EP	1,572,500	2,847,500	9,375,500	*13,748,750*	***27,544,250***
EP - Pediatric	28,334	39,668	104,839	*116,079*	***288,920***
FFY 2017					
	Q1	Q2	Q3	Q4	Total
EH	*2,290,278*	*2,290,278*	*2,290,278*	*2,290,278*	***9,161,113***
EP	*6,886,063*	*6,886,063*	*6,886,063*	*6,886,063*	***27,544,250***
EP - Pediatric	*72,230*	*72,230*	*72,230*	*72,230*	***288,920***
FFY 2018					
	Q1	Q2	Q3	Q4	Total
EH	*1,145,139*	*1,145,139*	*1,145,139*	*1,145,139*	***4,580,557***
EP	*4,462,500*	*4,462,500*	*4,462,500*	*4,462,500*	***17,850,000***
EP - Pediatric	*56,670*	*56,670*	*56,670*	*56,670*	***226,680***
Total for FFYs 2011-2016					
EH					***147,437,280***
EP					***211,036,584***
EP - Pediatric					***3,874,537***
Grand Total					***$362,348,401***

Table 244 - Incentive Payments by Dollar Amount per Quarter

Appendix C: Grants or Other Funding

There are currently no other funding sources for the program outlined in the request.

Appendix D: FFP for HIE

On January 13, 2012, a separate I-APD to support Medicaid's fair share of NC HIE core services development and implementation was submitted to CMS. On March 1, 2012, CMS approved this request in the amount of $1,712,196 (FFP $1,540,976 at 90%) for FFY 2012 and FFY 2013.

We are not requesting federal funds for FFY 2017 and 2018 at this time. However, we do anticipate working closely with the North Carolina Health Information Exchange Authority (NC HIEA) in FFYs 2017 – 2018, and will submit an update to this IAPD at a later date.

Appendix E: Center for Medicare and Medicaid Services Seven Conditions & Standards

Yes ☑ **No** ☐ **Modularity Condition.** Use of a modular, flexible approach to systems development, including the use of open interfaces and exposed API; the separation of business rules from core programming; and the availability of business rules in both human and machine readable formats.

Modularity in the Medicaid Electronic Health Record Incentive program is achieved in several ways:

- In order to adjust to the upcoming MMIS system replacement, a modular, decoupled approach was seen as necessary from the outset. Tight linkage to the existing or forthcoming MMIS system is not a practical solution.
- The software is built using best practice design patterns such as separating the data, business, and presentation layers within the application.
- The solution leverages data from documented, well-defined interfaces to communicate with other systems (CMS R&A, enrollment/credentialing, payment, claims data, authentication, I certification number verification, etc.). Where possible, new technologies supporting more flexible interfaces (XML, web services, etc.) are used.
- Attestations, attestation validation, and meaningful use all benefit from leveraging metadata driven rules for processing.

For a software development life cycle, the key components of the NC-MIPS approach are to:

- Generate finalized business requirements through frequent short meetings between the business and development teams.
- Implement some SCRUM tactics to ensure a strong development process, avoid pitfalls commonly associated with the waterfall approach, and realize other benefits of agile development.

Yes ☑ **No** ☐ **MITA Condition.** Align to and advance increasingly in MITA maturity for business, architecture, and data.

As a decoupled solution relying on data mastered in multiple other systems, the Medicaid Electronic Health Record Incentive Solution is architected to participate as a data consumer and producer within a larger service-oriented architecture. The solution aligns with the state's MITA goals.

Yes ☑ **No** ☐ **Industry Standards Condition.** Ensure alignment with, and incorporation of, industry standards: the Health Insurance Portability and Accountability Act of 1996 security, privacy and transaction standards; accessibility standards established under section 508 of the Rehabilitation Act, or standards that provide greater accessibility for individuals with disabilities, and compliance with Federal civil rights laws; standards adopted by the Secretary under section 1104 of the Affordable Care Act; and standards and protocols adopted by the Secretary under section 1561 of the Affordable Care Act.

Taking advantage of industry standards is a key goal of the Medicaid Electronic Health Record Incentive Solution. Attention to industry standards is specifically included in all phases of the software development process including requirements gathering/design, development, system integration testing, and user acceptance testing. Particular attention is being paid to section 508 of the Rehabilitation Act. No software will be released without achieving compliance for the user interface. Each failure to comply with an applicable standard will result in a critical bug being logged for immediate remediation.

Yes ☑ **No** ☐ **Leverage Condition.** Promote sharing, leverage, and reuse of Medicaid technologies and systems within and among states.

North Carolina's Medicaid Electronic Health Record Incentive Solution is being built to both leverage capabilities from other states and to be leveraged by other states. We also have been using CMS's program portals to review material from other states. North Carolina's approach to attestation validation and reporting may be of interest to some states.

Yes ☑ **No** ☐ **Business Results Condition.** Support accurate and timely processing of claims (including claims of eligibility), adjudications, and effective communications with providers, beneficiaries, and the public.

A guiding principle in developing the Medicaid Electronic Health Record Incentive Solution is to have clear communication with the provider community on requirements and status. A second principle is to reduce the administrative time for processing attestations through bringing together the disparate data sets required for attestation validation, providing the ability to monitor the overall attestation validation process, and allowing flexibility in data capture during validation to support process management and improvement.

Yes ☑ **No** ☐ **Reporting Condition.** Produce transaction data, reports, and performance information that would contribute to program evaluation, continuous improvement in business operations, and transparency and accountability.

The approach to North Carolina's Medicaid Electronic Health Record Incentive Solution is consistent with the more recent best practices of building the monitoring and support of the solution into the solution itself. By maintaining a centralized activity log, the solution is able to provide stakeholders (providers, management, and program operations) insight into current or historical activity. A separate audit log maintains detailed information that can be used for troubleshooting or performance analysis. Together, both logs may be used for reporting metrics or derived key

performance indicators allowing SLAs to be monitored and corrective actions to be developed as necessary.

Yes ☑ **No** ☐ **Interoperability Condition.** Ensure seamless coordination and integration with the Exchange (whether run by the state or federal government), and allow interoperability with health information exchanges, public health agencies, human services programs, and community organizations providing outreach and enrollment assistance services.

North Carolina's Medicaid Electronic Health Record Solution is designed and executed with reuse in mind. It is intended to be a system with suitable exposure to multiple enterprise service buses, including but not limited to both the NC Health Information Exchange and the NC Division of Department of Health and Human Services buses.

Appendix F: Acronyms and Abbreviations

Acronyms and Abbreviations	
A/I/U	Adopt, Implement, or Upgrade
API	Application Programming Interface
ARRA	American Recovery and Reinvestment Act
BAA	Business Associate Agreement
CMS	Centers for Medicare and Medicaid Services
CSC	Computer Sciences Corporation
NC DHHS	North Carolina Department of Health and Human Services
DMA	Division of Medical Assistance
DRIVE	MMIS Data Warehouse
EH	Eligible Hospital
EHR	Electronic Health Record
EP	Eligible Professional
EVC	Enrollment, Verification, and Credentialing
FFP	Federal Financial Participation
FFY	Federal Fiscal Year
HIE	North Carolina Health Information Exchange
HIPAA	Health Insurance Portability and Accountability Act
HIT	Health Information Technology
HITECH	Health Information Technology for Economic and Clinical Health
I-APD	Implementation Advance Planning Document
IC	Informatics Center
ITS	North Carolina Information Technology Services
MITA	Medicaid Information Technology Architecture
MMIS	Medicaid Management Information System
MS SQL	Microsoft Structured Query Language
MU	Meaningful Use

Acronyms and Abbreviations	
MU^2	Meaningful use of Meaningful Use
NC AHEC	North Carolina Area Health Education Center
N3CN	North Carolina Community Care Networks
NC-MIPS	North Carolina Medicaid Incentive Payment System
NCTRACKS	NC Transparent Reporting, Accounting, Collaboration, and Knowledge Management System
NLR	National Level Repository
OMMISS	Office of Medicaid Management Information System Services
ONC	Office of the National Coordinator
P-APD	Planning Advanced Planning Document
PCG	Public Consulting Group
REC	Regional Extension Center
SMD	State Medicaid Director
SME	Subject Matter Expert
SMHP	State Medicaid HIT Plan
SOA	Service Oriented Architecture
XML	Extensible Markup Language