



# **Community Care of North Carolina**

## **Clinical Program Analysis**

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Division of Medical Assistance  
North Carolina Department of Health and  
Human Services

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## TABLE OF CONTENTS

<b>TABLE OF CONTENTS.....</b>	<b>2</b>
<b>BACKGROUND AND EXECUTIVE SUMMARY .....</b>	<b>4</b>
<b>NCCCN PROGRAM OVERVIEW .....</b>	<b>11</b>
CARE MANAGEMENT .....	11
PRACTICE SUPPORT .....	12
OPERATIONS AND ADMINISTRATION .....	13
NCCCN INFORMATICS CENTER (IC).....	14
<b>RETURN ON INVESTMENT .....</b>	<b>14</b>
OVERALL COST AVOIDANCE.....	14
ADDITIONAL SUPPORTING EVIDENCE OF OVERALL SAVINGS ESTIMATES.....	15
SAVINGS DRIVERS.....	17
TABLE 5: RETURN ON INVESTMENT SUMMARY.....	23
<b>APPENDIX A: NCCCN ROI ANALYSIS AND RISK-ADJUSTMENT METHODOLOGY .....</b>	<b>31</b>
RISK-ADJUSTMENT METHODOLOGY: CLINICAL RISK GROUPS AND AGGREGATED CLINICAL RISK GROUPS.....	31
SAVINGS CALCULATION .....	32
<b>APPENDIX B: NCCCN STAFFING AND COST ALLOCATION .....</b>	<b>34</b>
<b>APPENDIX C: CARE MANAGEMENT PROGRAM ANALYSIS .....</b>	<b>38</b>
DESCRIPTION AND BACKGROUND .....	38
STRUCTURE.....	42
PERFORMANCE MEASUREMENT .....	42
RETURN ON INVESTMENT.....	43
FUTURE DIRECTION .....	44
<b>APPENDIX D: PRACTICE SUPPORT AND PROVIDER SERVICES PROGRAM ANALYSIS .....</b>	<b>46</b>
DESCRIPTION AND BACKGROUND .....	46
STRUCTURE.....	47
PERFORMANCE MEASUREMENT .....	48
RETURN ON INVESTMENT.....	50
FUTURE DIRECTION .....	51
<b>APPENDIX E: PREGNANCY PROGRAM ANALYSIS .....</b>	<b>53</b>
DESCRIPTION AND BACKGROUND .....	53
STRUCTURE.....	54
PERFORMANCE MEASUREMENT .....	55
FUTURE DIRECTION .....	57
<b>APPENDIX F: PHARMACY PROGRAM ANALYSIS .....</b>	<b>58</b>
DESCRIPTION AND BACKGROUND .....	58
STRUCTURE.....	58
PERFORMANCE MEASUREMENT .....	60
RETURN ON INVESTMENT.....	60
FUTURE DIRECTION .....	66
<b>APPENDIX G: BEHAVIORAL HEALTH PROGRAM ANALYSIS.....</b>	<b>68</b>

## Table of Contents

DESCRIPTION AND BACKGROUND .....	68
STRUCTURE .....	71
PERFORMANCE MEASUREMENT .....	74
RETURN ON INVESTMENT.....	75
FUTURE DIRECTION .....	76
<b>APPENDIX H: PEDIATRIC PROGRAM ANALYSIS.....</b>	<b>79</b>
DESCRIPTION AND BACKGROUND .....	79
STRUCTURE .....	80
PERFORMANCE MEASUREMENT .....	81
RETURN ON INVESTMENT.....	82
FUTURE DIRECTION .....	82
CARE COORDINATION FOR CHILDREN PROGRAM OVERVIEW .....	84
<b>APPENDIX I: NCCCN INFORMATICS CENTER OVERVIEW .....</b>	<b>86</b>
<b>APPENDIX J: NCCCN 2015 QUALITY MEASURES.....</b>	<b>89</b>
<b>APPENDIX K: PEDIATRIC CLINICAL QUALITY MEASURES LIST.....</b>	<b>91</b>

## BACKGROUND AND EXECUTIVE SUMMARY

### History of North Carolina Community Care Networks (NCCCN)

The origins of North Carolina Community Care Networks (NCCCN), also referred to as Community Care, date back to 1990 when, under Governor Jim Martin's administration, a 12-county pilot was launched to provide "medical homes" for certain Medicaid beneficiaries as a means of addressing inappropriate emergency room (ER) utilization. Private foundations supported the early costs of the pilot; but as it proved its success and expanded into additional areas, on-going financial support shifted to governmental resources (state and federal Medicaid dollars). DMA submitted a federal 1915(b) waiver in 1991 and again in 1998 to cover the costs of the program. In 2004, the federal Centers for Medicare and Medicaid Services (CMS) approved a request from DMA to shift this program from a 1915(b) initiative to a program authorized by a Medicaid State Plan Amendment (SPA). By 2007, NCCCN and its medical home model had become statewide (present in all 100 counties).

Oversight of the program has also evolved over time. Initially, the program was managed through a series of contracts executed/administered between each Network and the DHHS Office of Rural Health and Community Care. By 2002, DMA became a third party to those contracts – an arrangement that continued until 2011 when Rural Health ceased being a party. DMA alone began contracting directly with each of the 14 Networks that same year. On January 1, 2013, DMA contracted for the first time with NCCCN who, in turn, now contracts with each of the 14 Networks and 1,882 participating primary care provider (PCP) practices that provide a medical home. These practices represent roughly 6,000 pediatricians, family practice doctors and general practitioners, including obstetricians. They also comprise 90-95% of those enrolled in North Carolina as a Medicaid provider.

Since its inception, a fundamental principle of Community Care has been "Quality First." We believe that by focusing on quality, health outcomes improve, care delivery improves, and costs go down.

### Overall Return on Investment

In State Fiscal Year (SFY) 2014, NCCCN saved the Medicaid program \$336,375,995 in total dollars. This figure is risk-adjusted and is net of the per member, per month (PMPM) payments to NCCCN, its Networks and participating primary care practices. **Overall, this means the NC Medicaid program saves over \$3 for every \$1 invested in North Carolina Community Care Networks, Inc. (NCCCN).**

The overall savings estimate of the NCCCN program has been determined by calculating the difference in actual Medicaid costs for NCCCN-enrolled beneficiaries versus those not enrolled in NCCCN. The savings in Table 1 are based on Medicaid claims data paid through September 2014 for services delivered between

## *Key Takeaways*

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- NCCCN saves \$3 for every \$1 invested in the program – a net savings of \$336,375,995 in SFY 2014.
- Savings have been achieved by reducing unnecessary hospital and ED utilization and improving disease management.
- There are 1,882 primary care practices (representing ~ 6,000 providers) enrolled in NCCCN, and there are 1,754 FTEs employed by this contract in all 100 counties across the state.

July 2013 and June 2014. All costs are included except for LME/MCO capitation fees. Results are reported for non-dual Medicaid recipients, excluding beneficiaries receiving care in nursing homes during the report period. (Note that beneficiaries in the Pregnancy and Care Coordination for Children (CC4C) programs are included in this calculation if they are enrolled in NCCCN, but the independent impact of those programs is not fully accounted for here since some of the beneficiaries in those programs are not enrolled).

**Table 1: NCCCN Net Savings SFY 2014**

<b>Gross Risk-Adjusted Savings</b>	<b>\$ 490,599,073</b>
<b>Total Program Costs</b>	<b>\$ 154,223,078</b>
<i>Payments to NCCCN Central Organization and Networks</i>	<i>\$ 104,650,095</i>
<i>Payments to NCCCN-enrolled practices</i>	<i>\$ 49,572,983</i>
<b>Net Program Savings</b>	<b>\$ 336,375,995</b>

In order to accurately compare enrolled beneficiaries to those who are not enrolled, the two populations must be separated into similar clinical risk groups so that differences can be taken into account. Failing to undertake this important step would over-state Community Care's financial impact or ROI.

NCCCN relies upon a nationally recognized product - developed by 3M Health Information Systems - to take all available information from claims, including demographics, chronic conditions, medications, treatments, duration, intensity, etc. and assign all Medicaid beneficiaries to one of 44 mutually exclusive clinical "buckets". These buckets are referred to as Aggregated Clinical Risk Groups or ACRGs. Beneficiaries within each ACRG have the same set of chronic conditions and level of severity, so a beneficiary who is enrolled with NCCCN can be compared with an unenrolled beneficiary with similar clinical conditions and severity of disease (e.g. the cost of an enrolled beneficiary with poorly controlled diabetes is compared to an unenrolled beneficiary with poorly controlled diabetes).

The next step in calculating a ROI involves summing up the ACRGs within each Medicaid program aid category (Aged, Blind and Disabled (ABD) and non-ABD), and comparing the total PMPM spending for unenrolled members versus the NCCCN-enrolled population. The difference between the two numbers is then multiplied by the number of member months for the enrolled population within each program/risk strata, and subsequently summed up across program/risk strata to arrive at the risk-adjusted gross savings of \$490,599,073.

**See Appendix A for more detail on NCCCN's risk-adjustment methodology and the detailed calculation of each Aggregated Clinical Risk Group strata.**

The final step recognizes the payments made to the Community Care Program and subtracting that amount from the risk-adjusted gross savings. Specifically, NCCCN program costs are categorized as payments to NCCCN and payments to NCCCN-enrolled practices, and were pulled from the North Carolina Accounting System (NCAS) report BD701-03. In SFY 2014, payments to NCCCN Central Organization and Networks totaled to \$104,650,095. This figure differs slightly from the total payment to NCCCN listed in

Appendix B because it represents SFY 2014, whereas the figure in Appendix B is SFY 2015. Payments to NCCCN-enrolled practices in SFY 2014 total to \$49,572,983.

Subtracting total program costs of \$154,223,078 from the risk-adjusted, gross savings figure of \$490,599,073 yields a net savings of \$336,375,995.

#### Primary Care Case Management (PCCM)

The rising cost of health care is a concern for every purchaser, including government programs like Medicaid and Medicare that have near-exclusive responsibility for the aged, blind and disabled populations. It is this group that accounts for nearly two-thirds of all NC Medicaid spending.

Over the years, states have undertaken a variety of initiatives to curb the rising cost of their Medicaid programs. Chief among those efforts has been managed care. According to an October 2014 report jointly published by the Kaiser Family Foundation and the National Association of Medicaid Directors (NAMC), 47 of 50 states have in place some form of managing the care of their Medicaid population<sup>1</sup>. Federal regulations at 42 CFR 438 provide Medicaid programs with two options for managed care: (1) risk-based managed care organizations (MCOs); and (2) Primary Care Case Management (PCCM) programs. Whether a state pursues either or both options is voluntary. Also voluntary is which Medicaid services and which segments of the Medicaid population are to be managed.

Various State Medicaid Director (SMD) Letters, as well as the federal regulations found at 42 CFR 438.2, define “Primary Care Case Management” (PCCM) as the means of furnishing care management, coordination and monitoring of primary care services to Medicaid recipients.

In late 2012, DMA submitted SPA #12-022 to CMS to implement an enhanced PCCM program in North Carolina and named NCCCN and its fourteen (14) networks as the provider of this service. The SPA was approved with an effective date of January 1, 2013 – the same effective date of DMA’s contract with NCCCN (contract #28023).

North Carolina’s enhanced PCCM program is carried out chiefly through: (a) the development and support of medical homes; and (b) a data-driven, statewide care management program. In fulfilling these two broad functions, the approved SPA calls upon NCCCN to provide:

- Care management
- Transitional care
- Disease management
- Investments in health information technology and the exchange of health information
- Data analytics
- Medication reconciliation
- Standardization of evidence-based practices
- Community-based care coordination and linkages to community resources

Additionally, contract #28023 does not authorize NCCCN to coordinate or monitor services other than those associated with primary care. As such, NCCCN’s ability to influence the utilization of Medicaid

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<sup>1</sup> Kaiser Family Foundation. Medicaid in an Era of Health and Delivery System Reform: Results from a 50-State Medicaid Budget Survey for State Fiscal Years 2014 and 2015. October 14, 2014.

services is generally limited to physician services, in-patient and out-patient hospitalization, emergency room (ER) utilization, referrals to specialists and some prescription drugs. Those services represent approximately 45% of total claims spending for NC Medicaid. The remaining 55% of Medicaid services for which NCCCN could influence with additional approval, include: personal care services (PCS), durable medical equipment (DME), specialized therapies (PT, OT and Speech), imaging and high-dollar diagnostic testing and the behavioral health (BH) specialty system (the latter being managed by the LME-MCOs).

### Population Served

NCCCN serves 1.44 million of North Carolina's approximately 1.8 million Medicaid beneficiaries. Roughly 74% of the population we serve is children with relatively few medical needs; however, the adult population includes many individuals with complex clinical and behavioral health needs, including the aged, blind or disabled (ABD) beneficiaries. Forty-one percent of ABD beneficiaries have at least one type of mental illness, developmental disability or substance abuse issue.

NCCCN's Informatics Center (IC) has the analytical ability to risk-stratify patients by severity of illness and past utilization so as to identify higher-risk patients that would benefit from more intensive care management than those who are reached through disease management and/or population management. Those priority patient populations are:

- Beneficiaries in the hospital who need transitional care
- Patients referred by the hospital emergency department (ED) or another provider
- High-risk/high-cost patients who have spent more in hospital costs (admit/ED/readmit, including behavioral health) than expected given their clinical risk group.

### Workforce

The PMPM payments authorized under contract #28023 provide funding to support a total of 1,734 full-time equivalent (FTE) positions statewide. Ninety-one percent of those positions are directly employed and/or contracted by the 14 networks, and the remaining 9% work for NCCCN. A third of the entire workforce is affiliated with two "pass-thru" PMPM revenue streams (CC4C and OBCM) that fund 563 FTEs housed in the local health departments (LHDs) and other care management entities. See Appendix B for more detail about NCCCN staffing and cost allocation.

**Table 2: Statewide Workforce FTE Counts and Percentage of Total**

	FTE Count	Percentage of Total FTE Count
<b>Total Workforce</b>	<b>1,734</b>	<b>100%</b>
Pass-thru to LHDs	562	33%
<b>NCCCN and Networks</b>		
Care Management	892	51%
Practice Support	116	7%
Administration/Operations	164	9%

## Background and Executive Summary

As part of the 892 Care Management FTE, there are 734.13 FTE who are engaged in direct patient services. This represents a ratio of one care manager per 1,963 beneficiaries. In general, the staffing for an average/typical NCCCN Network includes at least the following roles:

- Executive Director
- Medical/Clinical Director
- Care Managers (generally RNs or Social Workers)
- Pharmacist
- Pregnancy Medical Home Coordinator
- Palliative Care Coordinator
- Health Check Coordinator
- Obstetrician (OB Physician Champion)
- Psychiatrist
- Quality Improvement (QI) Coordinator
- Network Administrative Manager
- Network Privacy Officer
- Care Management Support Staff, including patient coordinators and community health workers

These individuals comprise an interdisciplinary team that ensures the care management needs of the patient are met. Local, community resources are also an integral part of this team approach. Care/Team managers live in the communities they serve and are familiar with local community organizations and state agencies that can help to meet their clients' needs. By facilitating connections with mental health agencies, social services, faith-based organizations, Area Agencies on Aging, disability centers, and other community or regional organizations, care managers can leverage additional community resources that directly benefit Medicaid recipients.

### Medical Homes

There are a total of 1,882 medical homes operating under the NCCCN/PCCM umbrella. Of those, over a quarter (26% or 494) have achieved national recognition from the National Committee for Quality Assurance (NCQA) as a "patient centered medical home" or PCMH. North Carolina is a leader in the country for the number of PCMH-recognized practices.

The total cost of care savings from patients enrolled in medical homes range from 4.5%<sup>2</sup> to 7.4%<sup>3</sup> per member. Cost savings are achieved primarily through improved disease management, decreased hospital utilization (-11% for SFY 2014), decreased emergency room utilization (-10% for SFY 2014), and decreased potentially preventable readmissions (-32% for SFY 2014), as well as increased screenings, health promotion and preventive services. Our medical homes provide cost-effective, evidence-based chronic disease care. NCCCN has consistently performed above the NCQA Healthcare Effectiveness Data and Information Set (HEDIS) benchmarks since we began comparing our quality measures in 2009. In 2013, NCCCN exceeded the HEDIS national MCO benchmark for diabetes control by over 15 percentage points, representing 14,385 beneficiaries with better diabetes control than the national average. Similarly, NCCCN surpassed the HEDIS MCO mean for blood pressure control in 2013 by 8 percentage points, representing 14,349 beneficiaries with controlled hypertension. Because of improved disease control in diabetes and hypertension, beneficiaries have decreased risk of stroke, heart attack, blindness, and

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<sup>2</sup> Sandy, LG. Patient-Centered Medical Homes: Overview, Experience to Date, Success Factors. United Healthcare. 2013

<sup>3</sup> Reid, et al. The Group Health Medical Home At Year Two: Cost Savings, Higher Patient Satisfaction, And Less Burnout For Providers. Health Aff May 2010 vol. 29 no. 5: 835-843



amputation. There is a strong evidence base demonstrating cost savings per beneficiary with estimates of \$108 PMPM savings with controlled diabetes and \$46 PMPM savings with controlled hypertension.

While each enrolled Medicaid beneficiary may not be directly managed by a Network care manager, the PMPM revenue generated under contract #28023 provides a statewide infrastructure for all Medicaid recipients and for more intensive care management for those in greatest need. It also allows each of the 1.4 million enrolled beneficiaries' claims history to be analyzed for risk and impactability, examples of which include:

- Identifying and targeting various populations that benefit from intensive care management once hospitalized. There are approximately 126,744 individuals identified per month.
- Identifying cohorts of beneficiaries that have above-expected costs for their respective clinical risk group (CRG). There are approximately 24,000 of these individuals identified per month.

### Achievements and Performance Indicators

NCCCN's primary purpose is to ensure that the highest quality care for Medicaid recipients is provided in the most efficient manner, which benefits both the Medicaid population and the taxpayers of North Carolina. By focusing on quality first, health outcomes and care delivery processes improve, thereby reducing costs. In order to measure our success with this goal, NCCCN developed four risk-adjusted Key Performance Indicators (KPIs): Inpatient Admission Rate, Emergency Department Utilization Rate, Potentially Preventable Readmission Rate (PPR), and Overall PMPM Spending. The following are the results for SFY 2014:

- **Decreased Total Medicaid Spending of \$16.06 per member per month (PMPM).** The aged, blind or disabled (ABD) saw a decrease of \$36.06 PMPM and the non-ABD population saw a decrease of \$14.06 PMPM.
- **Lower Inpatient Admissions of 11%.** The ABD and non-ABD populations saw declines of 4% and 20%, respectively.
- **Reduced Emergency Department Visits by 10%.** The ABD and non-ABD populations saw declines of 3% and 12%, respectively.
- **Reduced Potentially Preventable Readmissions (PPRs) by 32%.** The decline for the ABD and non-ABD populations were 34% and 29%, respectively.

Additionally, between 2008 and 2014, admission rates for beneficiaries with multiple chronic conditions have declined by 10.3% among those enrolled in NCCCN, while rising 28.7% among the non-enrolled (see Figure 1 on page 16). In SFY 2014, there were 932 admissions for every 1000 Medicaid beneficiaries with multiple chronic conditions who were not enrolled in NCCCN, compared to 471 admissions per 1000 enrolled. At an average cost of \$8,100 per admission, the lower admission rates amount to a total cost avoidance of \$389 Million in SFY 2014 alone, which accounts for a large portion of the overall, gross impact of the NCCCN program.

*Hospital admissions have declined for NCCCN-enrolled beneficiaries with multiple chronic conditions while they have risen for those who are not enrolled.*

NCCCN also participated in the Medicare Health Care Quality Demonstration (also known as the 646 Demonstration) from January 2010 until December 2012. The final evaluation of this demonstration has recently been released, showing statistically-significant savings for care provided to Medicare beneficiaries enrolled in NCCCN primary care practices. Medicare beneficiaries who were also dually-eligible for Medicaid *and* enrolled with NCCCN experienced \$568 annual savings per beneficiary, totaling to \$14.5 Million in savings to Medicare.<sup>4</sup>

### Future Opportunities

The State's support of and financial investment in NCCCN has, over time, created a statewide infrastructure that is both nimble and responsive. We are poised to adapt so as to make DMA successful in a transformed health care delivery system – no matter what shape that system ultimately takes. Equally important, there are opportunities now that NCCCN could undertake to assist DMA with further lowering costs and utilization of certain services. Areas of expanded responsibilities could include, but are not limited to:

- Managing support services such as Personal Care Services (PCS) and utilization of Durable Medical Equipment (DME)
- Managing Specialty Pharmacy
- Managing high-risk unenrolled beneficiaries who are hospitalized
- Managing beneficiaries in skilled nursing facilities (SNF)

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<sup>4</sup> Centers for Medicare and Medicaid Services. Medicare Health Care Quality (MHCQ) Demonstration Evaluation North Carolina Community Care Networks Year 3 Evaluation Report Final Report. January 2015.

## NCCCN PROGRAM OVERVIEW

The enhanced primary care case management (PCCM) program is carried out through two chief functions: care management and support of medical homes (hereafter referred to as practice support).

Each “mandatory” Medicaid recipient is linked to an enrolled, physician-led medical home. NCCCN supports and builds capacity in those medical homes, and we target beneficiaries for complex care management using population health data to manage cost, utilization, and improve quality. Pediatrics, pharmacy, behavioral health, and pregnancy programs target specific subpopulations in addition to supporting care management and practice support functions. NCCCN also supports DHHS and DMA policy initiatives by working directly with more than 6,000 primary care providers and other partners, including pharmacies, hospitals, specialists, and LME-MCOs. Our clinical programs are designed to be interconnected in order to best meet the diverse needs of the populations we serve.

All of these efforts are supported by population health data, evidence-based policies and a robust informatics platform. While we organize our interventions around specific sub-programs or populations, NC’s enhanced PCCM model – and its benefits or savings – should be viewed holistically due to all of its interdependencies.

For detailed information about each clinical program within NCCCN, see the following appendices:

- Care Management – Appendix C
- Practice Support and Provider Services – Appendix D
- Pregnancy – Appendix E
- Pharmacy – Appendix F
- Behavioral Health – Appendix G
- Pediatrics – Appendix H
- Informatics Center – Appendix I

## Care Management

Once enrolled in a medical home, NCCCN uses data and provider referrals to target beneficiaries in need of care management who are “impactable,” meaning beneficiaries who will benefit most from a given intervention based on rigorous, controlled, real-world evaluations.

NCCCN has an evidence-based analytics model that identifies two main groups and subgroups:

- Beneficiaries at risk for readmission to hospitals (Transitional Care Priority)
- Beneficiaries at risk for future cost and higher utilization (Care Management Priority), including:
  - ED super-utilizers (greater than 10 ED visits in a year)
  - Beneficiaries with a high risk of admission to the hospital in the next 12 months
  - Beneficiaries with higher than expected claims spending
  - Beneficiaries in need of palliative care

NCCCN also administers the OB Care management (OBCM) and Care Coordination for Children (CC4C) care management programs that are staffed through local health departments.

### Model Overview

NCCCN targets beneficiaries that have complex medical needs, including those with both physical and behavioral health issues. We use an evidence-based care management model that emphasizes engagement, assessment, care planning, and goal setting. Each care management team is staffed with a registered nurse (RN) or social work primary care manager (PCM) and multidisciplinary team members. In addition to the medical home and Primary Care Provider (PCP), the care management team consists of the following roles:

- Lead Care Manager
- Network Pharmacists and Pharmacy Technicians
- Behavioral Health Coordinator and Network Psychiatrist
- Palliative Care Coordinator
- OB Coordinator and Network OB/GYN physician
- Adult and pediatric Clinical Directors
- Centralized Call Center

### Staffing and Cost Allocation

Statewide, there are 892 full time equivalents (FTE) care management staff – nearly all of whom (98%) are employed by the 14 Community Care networks. This represents 52% of the total workforce of NCCCN across the State. They collectively serve a target population of over 1.4 million Medicaid enrollees, of whom 157,000 (or 11%) are considered to be priority patients.

Of the 892 care management FTEs:

- 746 FTE are primary care managers and provide direct care.
- 76 FTE are part of a multidisciplinary team representing behavioral health, pharmacy, and clinical leadership.
- 104 FTE are care management staff that support the team with care coordination tasks.

Additionally, contract #28023 supports an additional 282 FTE obstetric (OB) care managers in the local health departments (who provide more intensive services to a target population of 45,239 high-risk pregnant women) and 281 FTE Care Coordination for Children (CC4C) care managers (who provide targeted services to the state's population of 360,000 children, aged birth-5 years old).

In total, care management staff account for 41% of costs associated with DMA's contract with NCCCN.

### Practice Support

Primary care medical homes are the main vehicle for carrying out care management and cost savings initiatives for the PCCM program. There is a large body of evidence found in health services literature that clearly demonstrates decreased hospital utilization, decreased ED utilization, improved drug utilization, and decreased costs for patients linked to a medical home<sup>5</sup>.

Statewide, NCCCN contracts with 1,882 practices to provide a medical home for Medicaid beneficiaries - a 10% increase since 2013. Practices are expected to provide timely access to quality care and participate

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<sup>5</sup> Nielsen, M., Gibson, L., Buelt, L., Grundy, P., & Grumbach, K. (2015). The Patient-Centered Medical Home's Impact on Cost and Quality, Review of Evidence, 2013-2014

fully in quality and cost savings initiatives. While 149 PCP practices with large volumes of Medicaid patients have an NCCCN care manager embedded (dedicated to their specific Medicaid population and physically located within the practice), all participating practices are expected to provide referrals as necessary and collaborate with care managers in programs such as transitional care.

### Practice Support Model

In each network there are adult and pediatric practice support teams. Coupled with data from NCCCN's Informatics Center (IC), staff identify and prioritize practices that have larger Medicaid populations, poorer utilization/cost outcomes, and poorer quality outcomes. Practices that are motivated to change and lack outside quality improvement/practice support resources are also prioritized.

Practice support services include the development, distribution and use of population management tools, clinical toolkits, quality measure reporting with peer comparison, quality improvement (QI) coaching, and workflow analysis. The network clinical director also convenes network practices in a quarterly medical management committee meeting where clinical policies are adopted, performance data is reviewed, and DMA policies and initiatives are presented.

Practice support also extends beyond primary care practices to network pharmacies, hospitals and pregnancy medical homes. Network pharmacists spend 25% of their time communicating, implementing, and problem-solving around DMA pharmacy policies and the preferred drug list (PDL). Network pharmacists also work with medical providers to assure safe, effective, and economical use of medications. Practice support staff also work with hospitals, local health departments, behavioral health providers, and the LME-MCOs to improve cost/utilization and quality for the target population. And the network OB coordinator and OB champion visit each pregnancy medical home quarterly and review performance data and review clinical policies.

### Staffing and Cost Allocation

There are 116 FTE Practice Support staff employed by the networks or the central office and networks. The network practice support teams are comprised of:

- QI Director and QI Facilitator
- Clinical Directors (pediatric and adult)
- Chronic Care Clinical Director and Coordinator
- Psychiatrist and BH Coordinator
- OB Champion and OB Coordinator
- Pharmacist

In total, Practice Support staff account for 7% of costs associated with DMA's contract with NCCCN.

## Operations and Administration

Organizational leadership, management and administration account for 164 FTE and 9.5% of costs associated with DMA's contract with NCCCN across the Central Office and Networks. Additional overhead expenses, including rent, equipment, utilities, etc., account for 10% of costs associated with DMA's contract with NCCCN.

## NCCCN Informatics Center (IC)

Informatics applications are accessed by the NCCCN networks to identify enrolled beneficiaries 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. Applications include, but are not limited to:

- Care Management Information System (CMIS)
- PHARMACeHOME
- Provider Portal
- Analytics and Reporting

In total, the Informatics Center accounts for 7% of costs associated with DMA's contract with NCCCN.

## RETURN ON INVESTMENT

### Overall Cost Avoidance

The overall benefit-cost ratio of the NCCCN program is greater than 3:1, with an estimated net savings of \$336,375,995 for SFY 2014 (Table 3). Net savings was determined by subtracting program costs from overall savings to the Medicaid program, relative to what costs would have been in the absence of the NCCCN program during SFY2014. Dividing net savings by program costs yields an overall return on investment (ROI) of 218%.

NCCCN achieves cost savings by providing beneficiaries access and continuity with a patient centered medical home, engaging priority patients in care management, and improving chronic disease and preventive care for the population as a whole. Under this model, savings are achieved through avoidance of hospitalizations, emergency visits, and other services as beneficiaries have improved access to primary care and preventive services, and better management of chronic conditions. Thus, the cost savings from the NCCCN program are due to the avoidance of future medical services *that would have occurred* absent the NCCCN intervention. While it is impossible to directly measure the cost of services that “would have occurred,” savings can be reasonably estimated by observing the difference in actual costs per recipient for NCCCN-enrolled vs. non-enrolled Medicaid beneficiaries, risk-adjusting for case mix differences in disease burden.

*Overall, the Medicaid program saves more than \$3 for every \$1 invested in NCCCN.*

**Table 3: Total Non-Behavioral Health Non-Dual Medicaid Spend SFY 2014**

<b>Gross Risk-Adjusted Savings</b>	<b>\$ 490,599,073</b>
<b>Total Program Costs</b>	<b>\$ 154,223,078</b>
<i>Payments to NCCCN Central Organization and Networks</i>	<i>\$ 104,650,095</i>
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<b>Net Program Savings</b>	<b>\$ 336,375,995</b>

The data in Table 3 are based on Medicaid claims data paid through September 2014 for services delivered between July 2013 and June 2014. All costs are included except for LME/MCO capitation fees. Results are reported for non-dual Medicaid recipients, broken down by ABD status, excluding beneficiaries receiving care in nursing homes during the report period. (Note that beneficiaries in the Pregnancy and CC4C programs are included in this calculation if they are enrolled in NCCCN, but the independent impact of those programs is not fully accounted for here since some of the beneficiaries in those programs are not enrolled).

To account for differences in case mix, members were stratified according to their Aggregated Clinical Risk Group (ACRG) using software developed by 3M™ Health Information Systems. Within each program category (ABD and non-ABD) and risk group, total spend PMPM for unenrolled members was subtracted from PMPM spend among members in the NCCCN-enrolled population. That number was then multiplied by the number of member months for the enrolled population within each program/risk strata, and subsequently summed up across program/risk strata to arrive at the risk-adjusted gross savings of \$490,599,073. Subtracting program costs yields a net savings of \$336,375,995. **Overall, the Medicaid program generates \$3 in savings for every \$1 invested in NCCCN.**

For more detail on NCCCN's risk-adjustment methodology, see Appendix A.

### Additional Supporting Evidence of Overall Savings Estimates<sup>6</sup>

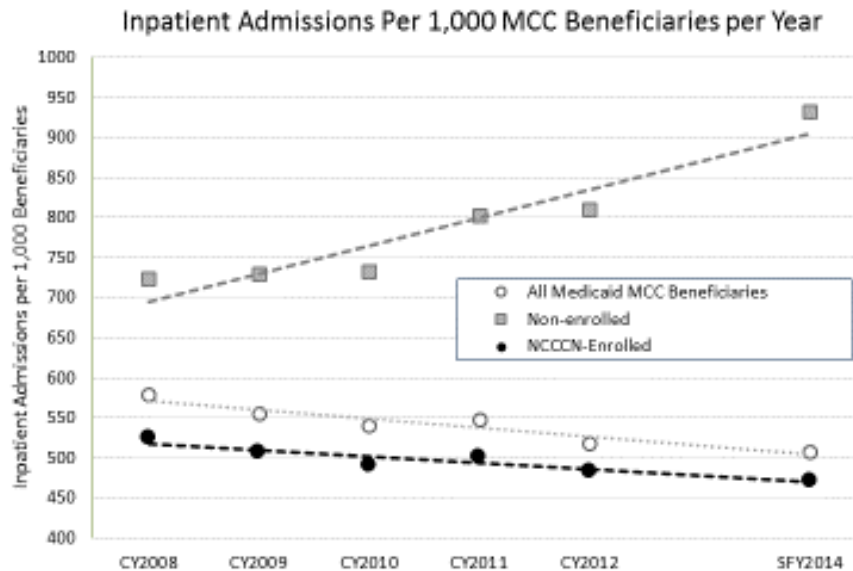
With DMA's active enrollment of the ABD population in the NCCCN program beginning in 2008, NCCCN has made a concerted effort to improve chronic disease management and reduce hospitalization rates for these highest risk beneficiaries. The results have been dramatic.

Between 2008 and 2014, admission rates for beneficiaries with multiple chronic conditions have declined by 10.3% among those enrolled in NCCCN, while rising 28.7% among the non-enrolled (Figure 1). In 2014, there were 932 admissions for every 1,000 Medicaid beneficiaries with multiple chronic conditions who were not enrolled in NCCCN, compared to 471 admissions per 1,000 enrolled. At an average cost of \$8,100 per admission, the lower admission rates amount to a total cost avoidance of \$389 Million in SFY 2014 alone. This is a large portion of the overall, gross impact of the NCCCN program, at almost \$491 Million.

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<sup>6</sup> In addition to calculating an actual return on investment, the following are trends and evidence that support the savings achieved by NCCCN.

### Inpatient Admission Trends among NC Medicaid Beneficiaries with Multiple Chronic Conditions (MCC), 2008-FY2014



**Figure 1: Inpatient Admission Trends among NC Medicaid Beneficiaries with Multiple Chronic Conditions.** Trend lines compare NC Medicaid beneficiaries with multiple chronic conditions based on NCCCN-enrollment status from SFY 2008 through SFY 2014, as well as show the total NC Medicaid beneficiary trend. Inpatient admissions are measured per 1,000 beneficiaries.

It should also be noted that previous external evaluations have similarly examined the impact of the NCCCN program relative to the non-enrolled NC Medicaid recipient population. A peer-reviewed published evaluation of NCCCN estimated a savings impact of \$72.65 PMPM for the ABD population as of 2010.<sup>7</sup> An independent, external evaluation that compared utilization patterns of NCCCN enrolled vs. non-enrolled beneficiaries on a risk-adjusted basis further supports the plausibility of above savings estimates, demonstrating substantially lower inpatient and ED utilization for NCCCN-enrolled beneficiaries overall, within each sub-population (ABD, adult non-ABD, and child non-ABD), and within specific diagnoses and clinical risk groups.<sup>8</sup>

While these evaluations were based on an earlier time period, we would expect that NCCCN's year-over-year impact on Medicaid savings has continued to grow since then. NCCCN's medical home model has advanced considerably over the past four years, with growth in the number of participating practices and

<sup>7</sup> Filmore, et. al. Health care savings with the patient-centered medical home: Community Care of North Carolina's experience. *Population Health Management*. 2014 Jun;17(3):141-8

<sup>8</sup> Treo Solutions, Performance Analysis: Healthcare Utilization of CCNC-Enrolled Population 2007-2010 <https://www.communitycarenc.org/media/related-downloads/treo-solutions-report-on-utilization.pdf>



proportion achieving NCQA PCMH recognition, and wide scale improvements in measures of preventive and chronic disease care. NCCCN care management programs for complex patients have also matured considerably and grown in scale, with ongoing reductions in hospital utilization rates and per-member spending within the NCCCN-enrolled population through SFY2014 (Table 4).

**Table 4: SFY12-SFY14 Trends Within NCCCN-Enrolled Population**

	Total Population	ABD	Non-ABD	Adult (≥21)	Child (<21)
<b>Total Spending per Member per Month</b>					
<b>SFY12</b>	\$265.59	\$963.75	\$168.74	\$672.34	\$166.72
<b>SFY13*</b>	\$261.23	\$921.68	\$169.06	\$675.39	\$162.42
<b>SFY14</b>	\$245.17	\$885.08	\$155.00	\$628.56	\$155.15
<b>Inpatient Admissions per 1,000 Member Months</b>					
<b>SFY12</b>	4.96	21.69	2.68	16.84	2.21
<b>SFY13*</b>	4.67	20.59	2.43	15.80	2.16
<b>SFY14</b>	4.17	19.76	1.95	15.02	1.74

\*SFY13 is represented by dates of service April 2012-March 2013 to allow for complete 12 months of claims history from legacy data warehouse. Excludes capitation payments and services currently covered under LME-MCO capitation in all time periods. Inpatient admission rates exclude women who delivered during the reporting year. Not adjusted for Consumer Price Index.

*More investment in transitional care management, especially for the unenrolled population, would yield further, significant cost savings.*

## Savings Drivers

Cost savings to the Medicaid program are achieved through six primary clinical services: Practice and Provider Support, Care Management, Pharmacy, Behavioral Health, Pediatrics and Pregnancy Programs. The majority of the cost savings is from reductions in hospital utilization, emergency room utilization, and potentially preventable readmissions. Of note, from SFY11 through SFY14, total Medicaid claims spending has declined on a per member basis. When possible, savings estimates from internal data analysis and evaluations are included below. However, many programs are not easily evaluated due to their interdependent or perennial nature (for example, behavioral health or pediatrics, respectively). For these programs, we turn to the literature for external estimates of savings or return on investment and cite accordingly. These savings estimates are in total dollars (not state dollars) and are not meant to be additive, as they are not mutually exclusive. For more detailed information on savings estimate calculations, see Table 5 on page 23.

### Cost Savings from Care Management Program

Cost savings estimates for care management are based on evaluation methods using multiple years of Medicaid claims data to compare risk-adjusted populations that received care management to populations that did not receive care management. While each enrolled recipient may not receive direct services from a care manager, each of the more than 1.4 million enrolled beneficiaries' claims history is analyzed for impactability and risk.

1. Transitional Care - \$75,504,000

NCCCN analytics identify a 'Transitional Care Priority' population that benefit from intensive care management once hospitalized. There are approximately 126,744 individuals identified per month, though only 53,868 are discharged each year and thus targeted for transitional care. Our transitional care approach has been evaluated in several peer-reviewed journals and the intervention has been 'right sized' to optimize cost efficiency<sup>9,10</sup>. The cost savings is \$6,000 per transitional care episode for high risk patients and \$2,000 per episode for lower risk patients.

**More investment in transitional care management, especially for the un-enrolled, would yield significant further cost savings.**

2. Care Management of Priority Population – \$19,022,400

NCCCN analytics also identify a cohort of beneficiaries who have above expected costs for their clinical risk group. There are approximately 24,000 of these individuals identified per month to receive intensive care management services. We have found a variable degree of savings per patient, with some patients yielding as much as \$6,000 in savings, though the average is roughly \$800 per patient over six months.

3. Palliative Care – \$9,000,000

Using analytics, we are able to identify individuals who are likely in their last year of life and are candidates for palliative care. The palliative care coordinator and care management team link the recipient to palliative care supports and a cost savings of \$1,800 per member has been demonstrated in the last year of life.

4. ED Super-utilizers - \$19,572,360

NCCCN analytics identify a cohort of ED super-utilizers, those who have had more than 10 ED visits in the last year. Once engaged in NCCCN care management, the cost savings is \$1,800 per member over 6 months. In addition, the Central Office Call Center reaches out to beneficiaries who have had 2-6 ED visits in the last 12 months. The cost savings for educating the recipient about the medical home and linking to care management is \$160 per member.

### Cost Savings from Practice Support and Provider Services Program

1. Patient Centered Medical Home - \$46,680,890

NCCCN has 1,882 medical homes and 494 medical homes with NCQA PCMH recognition. There is a large body of literature documenting cost savings for patients who are enrolled with a patient

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<sup>9</sup> Jackson et al. Transitional care cut hospital readmissions for North Carolina Medicaid patients with complex chronic conditions. *Health Affairs*. 2013 Aug;32(8):1407-15.

<sup>10</sup> Jackson et al. Timeliness of Outpatient Follow-up: An Evidence-Based Approach for Planning After Hospital Discharge. *Ann Fam Med* March/April 2015;13(2) 115-122.

centered medical home. The total cost of care savings range from 4.5%<sup>11</sup> to 7.4%<sup>12</sup> per member. Cost savings are achieved through improved disease management, decreased hospital utilization (-12% for SFY 2014), emergency room utilization (-12% for SFY 2014), and potentially preventable readmissions (-41% for SFY 2014).

2. Improved Chronic Disease Care – \$25,454,487

There are 14,385 beneficiaries with diabetes control in NC exceeding the HEDIS national MCO benchmarks and 14,349 beneficiaries with controlled hypertension. Because of improved disease control in diabetes and hypertension, beneficiaries have decreased risk of stroke, heart attack, blindness, and amputation. There is a strong evidence base demonstrating cost savings with estimates of \$108 PMPM savings with controlled diabetes<sup>13</sup> and \$46 PMPM savings with controlled hypertension<sup>14</sup>. Cost savings have been achieved by the enhanced primary care practice infrastructure and providers' engagement with the NCCCN program to improve the quality in care delivered. Network clinical leadership and practice support teams promote evidence-based guidelines and provide practices with feedback on their quality performance. Another crucial component to improved chronic disease care is commitment by the NCCCN provider community to treating complex Medicaid patients. Other target conditions include: asthma, ischemic vascular disease (IVD), and congestive heart failure (CHF). Further cost savings could be garnered from connecting practices to NCCCN informatics clinical applications. Also, a focused effort on integrating depression care into primary care is likely to have impact on ER and hospital utilization.

Cost Savings from Pregnancy Program

The Pregnancy Medical Home program is a relatively new program with the primary goal of improving birth outcomes for the NC Medicaid population. The primary cost savings from the program are achieved through reducing the rate of low birth weight, decreasing the rate of elective C-sections, and promoting evidence based care pathways to obstetric providers.

1. Low Birth Weight Prevention - \$15,372,900

The low birth weight rate has declined from 11.12% in SFY 2011 to 10.37% in SFY 2014 and the very low birth weight rate has declined from 2.18% to 1.86% over the same timeframe. This translates into significant cost savings as the medical costs for these babies average \$49,000 and \$59,700, respectively, for the first year of life<sup>15,16</sup>. This is more than 10 times the cost of babies born at a healthy birth weight.

2. Prenatal Care - \$1,872,255

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<sup>11</sup> Sandy, LG. Patient-Centered Medical Homes: Overview, Experience to Date, Success Factors. United Healthcare. 2013

<sup>12</sup> Reid, et al. The Group Health Medical Home At Year Two: Cost Savings, Higher Patient Satisfaction, And Less Burnout For Providers. Health Aff May 2010 vol. 29 no. 5: 835-843

<sup>13</sup> Does Diabetes Disease Management Save Money and Improve Outcomes? Diabetes Care. April 2002 vol. 25 no. 4: 684-689

<sup>14</sup> Bridges to Excellence Operations Manual [http://www.ehcca.com/presentations/pfsummit/p2\\_h3.pdf](http://www.ehcca.com/presentations/pfsummit/p2_h3.pdf)

<sup>15</sup> Jennifer L. Howse, Ph.D., president, March of Dimes, White Plains, N.Y.; Maureen Hack, M.D., Ch.B., department of pediatrics, Rainbow Babies and Children's Hospital, Cleveland; March 17, 2009, Healthy Babies, Healthy Business: Cutting Costs and Reducing Premature Birth Rates, March of Dimes Foundation

<sup>16</sup> Rand, Preventing Very Low Birthweight Births: A Bundle of Savings. 1998.

## Return on Investment

Prenatal care costs have decreased from \$409 per delivery in SFY10 to \$376 per delivery SFY13, which equates to a decreased in \$1.87M.

### 3. Delivery Cost Reduction - \$7,091,875

The average cost per delivery admission has decreased from \$3,394 in SFY 2012 to \$3,269 in SFY 2013, which amounts to \$7,091,875. Additionally, the cesarean section rate has declined from 29.93% SFY12 to 29.44% SFY14 which results in savings in reimbursement to hospitals.

## Cost Savings from Pharmacy Program

The Pharmacy Program produces cost savings and clinical benefit through providing comprehensive medication management services and supporting medical homes in improving evidence based prescribing. Network pharmacists also provide outreach to practices, pharmacies, and hospitals when there are DMA pharmacy policy changes.

### 1. Transitional Care Medication Management - \$75,504,000

The Pharmacy Team works closely with the interdisciplinary care management team and thus, contributes to the cost savings in transitional care and complex care management. NCCCN Pharmacists review medications and provide counseling to patients and alert care providers of potential medication errors and omissions. The ROI of comprehensive medication management services has been estimated as being between 3:1 and 5:1.<sup>17,18,19</sup> There is also strong evidence that medication management services lead to 10% – 20% improvements in chronic disease control including diabetes, hypertension, and hypercholesterolemia.<sup>20</sup>

## Cost Savings from Behavioral Health Program

The primary cost savings from the Behavioral Health program come from integrating behavioral health supports into complex care management and supporting medical homes with integrated care strategies. The Behavioral Health team also links beneficiaries to BH providers and LME-MCOs to better coordinate specialty care.

### 1. Behavioral Health Integration

There are 110 NCCCN practices that have behavioral health integrated into the medical home. There is a large body of literature that shows a substantial ROI from this model. The ROI is estimated at 6.5:1.<sup>21</sup>

### 2. Transitional Care for those with Behavioral Health and Chronic Conditions - \$37,752,000

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<sup>17</sup> Giberson S, Yoder S, Lee MP. Improving Patient and Health System Outcomes through Advanced Pharmacy Practice. A Report to the U.S. Surgeon General. Office of the Chief Pharmacist. U.S. Public Health Service. Dec 2011.

<sup>18</sup> Schumock GT, Meek PD, Ploetz PA, Vermeulen LC. Economic evaluations of clinical pharmacy services--1988-1995. The Publications Committee of the American College of Clinical Pharmacy. Pharmacotherapy. Nov-Dec 1996;16(6):1188-1208.

<sup>19</sup> Perez AD, Fred. Hoffman, James. Meek, Patrick. Touchette, Daniel. Vermeulen, Pete. Schumock, Glen. Economic Evaluations of Clinical Pharmacy Services: 2001–2005. Pharmacotherapy. 2009;29(1):128.

<sup>20</sup> Isetts BJ, Brummel AR, De Oliveira DR, Moen DW. Managing drug related morbidity and mortality in the patient-centered medical home. Medical Care 2012 ; 50(11):997-1001, November 2012.

<sup>21</sup> Unützer et al., Long-term Cost Effects of Collaborative Care for Late-life Depression. Am J Manag Care. 2008 Feb; 14(2): 95–100.

Identifying beneficiaries with multiple chronic conditions and behavioral health conditions and engaging them in complex care management yields significant ROI. Those who are hospitalized in a medical or psychiatric facility and engaged in care management yield \$2,000 to \$6,000 in savings over 6 months<sup>22</sup>.

3. Chronic Pain Initiative (CPI) – 400 deaths averted since August 2014

While this is a new initiative and ROI estimates have not been evaluated, there is evidence that the CPI initiative has improved opioid prescribing among primary care providers and care management strategies have decreased ER utilization by chronic pain patients. More significantly, community coalitions have worked with law enforcement and EMS to distribute naloxone rescue medications across North Carolina leading to over 400 naloxone rescues since August 2014<sup>23</sup>.

## Cost Savings from Pediatric Program

While cost savings are achieved in the Pediatric Program through care management and support of the pediatric medical home, **much of the benefit to the state is longer term cost savings on preventive, behavioral health, and chronic disease care impacting the medical, educational, and juvenile justice systems.** The following Pediatric Program priorities have significant ROI or population health benefit to the state:

1. Foster Care - \$44,860,284

The network pediatric teams have worked to establish medical homes for children in foster care. Those who are enrolled in NCCCN have \$519 PMPM lower costs compared with un-enrolled children in foster care.

2. Sickle Cell - \$6,439,680

Promoting use of hydroxyurea for children with Sickle Cell leads to improved disease control and decreased ED use and hospitalization rates. Providing care management to high risk adolescents and adults through NCCCN care management garners \$1,400 in savings over 6 months.<sup>24</sup>

3. Early and Periodic Screening, Diagnostic and Treatment (EPSDT)

EPSDT includes comprehensive preventive health care services for Medicaid beneficiaries under 21 years of age. These services lead to reductions in ED usage, improvement in immunization rates, and improved overall health of the population.<sup>25</sup>

4. Developmental and Behavioral/Social-Emotional/ Mental Health

The CC4C program focuses on identifying children with toxic stress or other risk factors for poor medical, educational, or legal outcomes. Early intervention with children with adverse childhood events leads to decreased long-term costs.

5. Mental Health Integration in Pediatric Primary Care

Behavioral health integration strategies have shown a strong ROI. A 2014 study estimated \$7.1 - \$9.9 billion savings to Medicaid nationally.<sup>26</sup>

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<sup>22</sup> Jackson CT, Trygstad TK, DeWalt DA, Dubard CA. Transitional Care Cut Hospital Readmissions For North Carolina Medicaid Patients With Complex Chronic Conditions. Health Affairs 2013. 32, 8 (2013): 1407–1415.

<sup>23</sup> Coffin et al., Annals of Internal Medicine 2013; 158:1-9

<sup>24</sup> Wang, et. al. Hydroxyurea is associated with lower costs of care of young children with sickle cell anemia. Pediatrics 2013 Oct; 132 (4): 677-83

<sup>25</sup> Coker et al. Does Well-Child Care Have a Future in Pediatrics? Pediatrics 2013; 131 (2):\$149-\$159

<sup>26</sup> Milliman. Economic Impact of Integrated Medical-Behavioral Healthcare. American Psychiatric Association. April 2014.

6. Oral Health

4+ varnishings by age 3 have been shown to significantly decrease caries and there is documented savings over 10 years in restorative dental care estimated at \$34 million.<sup>27</sup>

7. Pediatric EHR Development

Further developing pediatric EHRs in NC will lead to improved quality data reporting and opportunities for pediatric medical homes to improve population health outcomes.

8. Childhood Obesity

Decreasing rates of childhood obesity leads to lower adult morbidity related to diabetes, cardiovascular disease, and osteoarthritis. Childhood obesity programs have shown long term cost savings averaging \$41,500 per male recipient and \$30,600 per female recipient.<sup>28</sup>

9. Asthma

Promoting evidence-based asthma guidelines, promotion of shared decision making tools, use of care alerts, and care management interventions have all lead to a reduction in ED usage and hospitalization rates for children with asthma.<sup>29 , 30</sup> 97.2% of NCCCN enrollees receiving appropriate medication management based on 2013 QMAF Chart Review results.

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<sup>27</sup> [http://www.cdc.gov/pcd/issues/2012/11\\_0219.htm](http://www.cdc.gov/pcd/issues/2012/11_0219.htm)

<sup>28</sup> Brill, Alex, "Long-Term Returns of Obesity Prevention Policies," Matrix Global Advisors, for RWJ, 2013

<sup>29</sup> Ivanova, et al. Effect of asthma exacerbations on health care costs among asthmatic patients with moderate and severe persistent asthma. *J Allergy Clin Immunol*. 2012 May;129(5):1229-35

<sup>30</sup> Rust, et al. Potential Savings From Increasing Adherence to Inhaled Corticosteroid Therapy in Medicaid-Enrolled Children. *American Journal of Managed Care*. March 20, 2015

**Table 5: Return on Investment Summary**

Table 5 summarizes all of the estimated savings and cost avoidance for each program and service. Included is information on savings assumptions, the target population for each service and details for how estimates were developed. All savings estimates are listed in total dollars. As explained in Table 3 on page 14, the overall savings estimate is based on internal evaluation and represents the total return on investment of the NCCCN program.

Category	Service	Estimated Annual Cost Savings	Savings Assumptions	Target Population	Details
<b>Overall</b>	PCCM Program	\$336,375,995 (risk-adjusted and net of program costs)	<p>\$74,435,336 savings for ABD enrollees (risk-adjusted)</p> <p>\$416,163,737 savings for non-ABD enrollees (risk-adjusted)</p> <p>Program costs include \$154,223,078 in payment to NCCCN and NCCCN practices.</p>	<p>1,440,771 Medicaid beneficiaries enrolled with NCCCN as of January 2015</p> <p>1,324,545 ABD member months in SFY 2014</p> <p>11,943,920 non-ABD member months in SFY 2014</p>	<p>Analysis of paid Medicaid claims during SFY 2014 for members enrolled in NCCCN compared to similar patients not enrolled in NCCCN</p> <ul style="list-style-type: none"> <li>excluded capitation payments to LME/MCOs from total cost calculations;</li> <li>excluded patients in nursing homes.</li> </ul> <p><i>Further details on risk-adjustment methodology in Appendix A.</i></p>

**NOTE:** The remaining estimates represent estimated savings that can be realized by each program and initiative. The following estimates are not risk-adjusted or mutually exclusive, and are not meant to be additive. When estimating a potential savings is not appropriate, “n/a” is listed.

Category	Service	Estimated Annual Savings/Avoidance Potential	Savings Assumptions	Target Population	Details
<b>Care Management</b>	Transitional Care	\$75,504,000	Variable degree of savings per patient with some patients yielding as much as \$6,000 in savings; average of \$2,420 savings per member over 6 months	<p>31,200 high-risk patient discharges managed each year.</p> <p>Target population includes 128,233</p>	<p>Analysis of NCCCN enrolled patients receiving transitional care following hospital discharge compared to clinically similar patients who did not receive transitional care, during a period when the program was expanding.</p> <p><b><u>Peer-reviewed publications:</u></b></p>

## Return on Investment

Category	Service	Estimated Annual Savings/ Avoidance Potential	Savings Assumptions	Target Population	Details
				transitional care priority patients, of whom 53,868 are discharged each year and appropriate for transitional care.	<ul style="list-style-type: none"> <li>Jackson et al. Transitional care cut hospital readmissions for North Carolina Medicaid patients with complex chronic conditions. <i>Health Affairs</i>. 2013 Aug;32(8):1407-15.</li> <li>Jackson et al. Timeliness of Outpatient Follow-up: An Evidence-Based Approach for Planning After Hospital Discharge. <i>Ann Fam Med</i> March/April 2015;13(2) 115-122.</li> </ul>
	NCCCN Priority Patient Population	\$19,022,400	Variable degree of savings per patient with some patients yielding as much as \$6,000 in savings; average of \$800 savings per member over 6 months	24,000 patients managed each year.	Analysis of NCCCN patients who had above-expected preventable hospital spend who received a care management intervention, compared to clinically similar patients who did not receive an intervention.
	Palliative Care	\$9,000,000	\$1,800 savings per member over the last year of life	5,000 enrollees with a palliative care risk indicator.	Analysis of NCCCN patients who received a palliative care intervention prior to death, compared to clinically similar patients who did not receive an intervention.
	Emergency Department Super-utilizer Initiative	\$14,149,800	\$1,800 savings per member over 6 months	7,861 patients per year.	Analysis of NCCCN patients who had visited an ED at least 10 times in the past year who received a care management intervention, compared to clinically similar patients who did not receive an intervention.
	Emergency Department Call Center Follow-Up	\$5,422,560	\$160 savings in averted ED visits per patient reached	33,891 patients reached per year.	Analysis of NCCCN enrollees who received a phone call following a non-emergent visit to the ED compared to similar patients who did not receive a phone call.
<b>Practice Support</b>	Patient-Centered Medical Home Model	\$46,680,980*	\$10 PMPM savings for patients in PCMH model	1,440,771 Medicaid beneficiaries enrolled with	*Savings estimate based on analysis of model from United Health Group:



## Return on Investment

Category	Service	Estimated Annual Savings/ Avoidance Potential	Savings Assumptions	Target Population	Details
			27% of all practices (494 practices) with NCQA PCMH recognition  389,008 (27%) Medicaid beneficiaries in NCQA-recognized practice	NCCCN as of January 2015	<a href="https://www.pcpcc.org/sites/default/files/resources/United%20Health%20Group.pdf">https://www.pcpcc.org/sites/default/files/resources/United%20Health%20Group.pdf</a>
	Diabetes Management	\$18,642,343*	\$108 PMPM savings for patients in diabetes management program  14,385 patients above HEDIS Medicaid HMO mean for HgbA1c control	93,406 enrollees with diabetes in SFY 2013	*Savings estimate based on analysis of model from American Diabetes Association: Diabetes Care:  <a href="http://care.diabetesjournals.org/content/25/4/684.full">http://care.diabetesjournals.org/content/25/4/684.full</a>
	Hypertension Management	\$7,849,056*	\$46 PMPM savings for prevention of cardiac event through BP control  14,349 patients above HEDIS Medicaid HMO mean for BP control	179,366 enrollees with hypertension in SFY 2013	*Savings estimate based on analysis of model from Bridges to Excellence:  <a href="http://www.ehcca.com/presentations/pfp/submit/p2_h3.pdf">http://www.ehcca.com/presentations/pfp/submit/p2_h3.pdf</a>
	Asthma Management	n/a	\$95 savings per patient per year potential with increased asthma medication adherence  \$351 PMPM savings for preventing asthma exacerbations  21,568 asthma patients above the HEDIS Medicaid HMO mean for appropriate pharmacological therapy	151,630 enrollees with asthma in SFY 2013	American Journal of Managed Care <a href="http://www.ajmc.com/publications/issue/2015/2015-vol21-n3/Potential-Savings-From-Increasing-Adherence-to-Inhaled-Corticosteroid-Therapy-in-Medicaid-Enrolled-Children">http://www.ajmc.com/publications/issue/2015/2015-vol21-n3/Potential-Savings-From-Increasing-Adherence-to-Inhaled-Corticosteroid-Therapy-in-Medicaid-Enrolled-Children</a>  Journal of Allergy and Clinical Immunology <a href="http://www.ncbi.nlm.nih.gov/pubmed/22326484">http://www.ncbi.nlm.nih.gov/pubmed/22326484</a>

## Return on Investment

Category	Service	Estimated Annual Savings/ Avoidance Potential	Savings Assumptions	Target Population	Details
Pregnancy	Low Birth Weight (LBW) Prevention	\$7,791,000*	\$49,000 saved in first year of life per LBW birth avoided  6.7% relative improvement in SFY 2014 compared to SFY 2011  159 LBW births prevented in SFY 2014	55,307 non-emergency Medicaid births in SFY 2014	*Savings estimate based on analysis of model from Jennifer L. Howse, Ph.D., president, March of Dimes, White Plains, N.Y.; Maureen Hack, M.D., Ch.B., department of pediatrics, Rainbow Babies and Children's Hospital, Cleveland; March 17, 2009, <i>Healthy Babies, Healthy Business: Cutting Costs and Reducing Premature Birth Rates</i> , March of Dimes Foundation
	Very Low Birth Weight (VLBW) Prevention	\$7,581,900*	\$59,700 saved in first year of life per VLBW birth avoided  14.7% relative improvement in SFY 2014 compared to SFY 2011  127 VLBW births prevented in SFY 2014	55,307 non-emergency Medicaid births in SFY 2014	*Savings estimate based on analysis of model from Rand <a href="http://www.rand.org/pubs/research_briefs/RB4514/index1.html">http://www.rand.org/pubs/research_briefs/RB4514/index1.html</a>
	Prenatal Care Cost Reduction	\$1,872,255	\$33 saved in prenatal care per patient	56,735 non-emergency Medicaid births in CY 2013	Analysis of non-emergency Medicaid recipients who received prenatal care in CY 2013
	Delivery Cost Reduction	\$7,091,875	\$125 saved per delivery	56,735 non-emergency Medicaid births in CY 2013	Analysis of non-emergency Medicaid recipients who gave birth in CY 2013
Pharmacy	Medication Management	\$75,504,000**  **subset of care management transitional care	67% of effort directed towards medication management as part of care management team	31,200 high-risk patient discharges managed each year.	Analysis of NCCCN enrolled patients receiving transitional care following hospital discharge compared to clinically similar patients who did not receive

## Return on Investment

Category	Service	Estimated Annual Savings/ Avoidance Potential	Savings Assumptions	Target Population	Details
				Target population includes 128,233 transitional care priority patients, of whom 53,868 are discharged each year and appropriate for transitional care	transitional care, during a period when the program was expanding. <b>Peer-reviewed publications:</b> <ul style="list-style-type: none"> <li>Jackson et al. Transitional care cut hospital readmissions for North Carolina Medicaid patients with complex chronic conditions. <i>Health Affairs</i>. 2013 Aug;32(8):1407-15.</li> <li>Jackson et al. Timeliness of Outpatient Follow-up: An Evidence-Based Approach for Planning After Hospital Discharge. <i>Ann Fam Med</i> March/April 2015;13(2) 115-122.</li> </ul>
	Practice and Pharmacy Support	n/a	Supporting quality improvement efforts or DMA Policy changes (e.g., ~2,000 face-to-face provider outreach visits over 3 months to support 2014 PDL changes)	1,440,771 Medicaid beneficiaries enrolled with NCCCN as of January 2015	
	Quality/Cost Savings Initiatives	\$10,000,000	Effects of A+KIDS program (2011-2013): <ul style="list-style-type: none"> <li>20% decrease in antipsychotic prescribing in children</li> <li>28% increase in metabolic monitoring</li> </ul>	10,000-12,000 antipsychotic prescription refills per month in 2011-2013	Analysis of utilization changes that occurred as a result of the A+ KIDS program. Savings estimated from amount paid data from prescription claims.
<b>Behavioral Health</b>	Behavioral Health Integration	-	110 known practices incorporating integrated care. With push to IMPACT model of depression care via Adult Depression Toolkit, potential cost savings of \$70 PMPM.	317,621 Medicaid beneficiaries with a mental health diagnosis	Savings estimate based on analysis of model from Unützer et al., <i>American Journal of Managed Care</i> 2008;14:95-100

## Return on Investment

Category	Service	Estimated Annual Savings/ Avoidance Potential	Savings Assumptions	Target Population	Details
			57,748 CCNC-enrolled patients with diagnosis of depression.		
	Behavioral Health Transitional Care	\$37,752,000**  **subset of care management transitional care	As part of care management team providing transitional care, cost savings of \$2,000 to \$6,000 per member over 6 months. Around 50% of transitional care patients who are discharged have a behavioral health condition.	31,200 high-risk patient discharges managed each year, around half of whom have a behavioral health condition.  Target population includes 128,233 transitional care priority patients, of whom 53,868 are discharged each year and appropriate for transitional care.  317,621 Medicaid beneficiaries with a mental health diagnosis	Analysis of NCCCN enrolled patients receiving transitional care following hospital discharge compared to clinically similar patients who did not receive transitional care, during a period when the program was expanding. <b>Peer-reviewed publications:</b> <ul style="list-style-type: none"> <li>Jackson et al. Transitional care cut hospital readmissions for North Carolina Medicaid patients with complex chronic conditions. <i>Health Affairs</i>. 2013 Aug;32(8):1407-15.</li> <li>Jackson et al. Timeliness of Outpatient Follow-up: An Evidence-Based Approach for Planning After Hospital Discharge. <i>Ann Fam Med</i> March/April 2015;13(2) 115-122.</li> </ul>
	Chronic Pain Initiative	400 deaths averted since August 2014*	1 death prevented per 227 naloxone kits distributed, incremental quality adjusted life year increase of \$438		*Analysis based on Coffin et al., <i>Annals of Internal Medicine</i> 2013; 158:1-9  Care management and practice support evaluation ongoing

## Return on Investment

Category	Service	Estimated Annual Savings/ Avoidance Potential	Savings Assumptions	Target Population	Details
Pediatrics	Foster Care	\$44,860,284	\$519 PMPM less in claims spending for NCCCN-enrolled foster children cost versus those who are unenrolled	7,203 foster children currently enrolled in NCCCN	Analysis of paid claims in 2012 for foster children who were enrolled in NCCCN compared with foster children who were not enrolled.
	Sickle Cell	\$6,439,680*	\$240 PMPM savings for pediatric sickle cell patients who received hydroxyurea, a disease-modifying treatment for sickle cell.	2,236 enrollees with sickle cell disease	*Savings estimates based on analysis of model from Wang, et. al; Pediatrics 2013 Oct; 132 (4): 677-83  <a href="http://www.ncbi.nlm.nih.gov/pubmed/23999955">http://www.ncbi.nlm.nih.gov/pubmed/23999955</a>
	EPSDT/Health Check	n/a	Increased well child rates correlates with decreased ED rates and increased immunization rates	1,064,729 Medicaid recipients ages 0-20 years	Coker et al., Pediatrics 2013; 131 (2):S149-S159
	CC4C	n/a	Early intervention identifies developmental delays and children at risk for future costs from diabetes and heart disease. Early intervention leads to decreased long term medical, education, juvenile justice costs.	362,600 Medicaid children ages 0-5 years	Pediatrics, National Bureau of Economic Research
	Oral Health	n/a	4+ varnishings by age 3 decreases costs for restorative dental care	168,772 Medicaid children ages 0-3 years	CDC <a href="http://www.cdc.gov/pcd/issues/2012/11_0219.htm">http://www.cdc.gov/pcd/issues/2012/11_0219.htm</a>

## Return on Investment

Category	Service	Estimated Annual Savings/ Avoidance Potential	Savings Assumptions	Target Population	Details
	Childhood Obesity	n/a	39.4% of NC Medicaid children are overweight or obese  \$22,346 lifetime State Medicaid savings per male recipient  \$16,477 lifetime State Medicaid savings per female recipient	1,064,729 Medicaid recipients ages 0-20 years	Obesity rate calculated from analysis of BMI V-code in Q1 2013. Savings estimates based on analysis of model from Brill, et al:  Brill, Alex, "Long-Term Returns of Obesity Prevention Policies," Matrix Global Advisors, for RWJ, 2013
<b>Dually Eligible</b>	646 Demonstration	\$14,474,912 (Medicare)  (potential of \$133,000,000 savings shared with CMS)	\$568 annual savings on 25,484 beneficiaries enrolled with NCCCN practices in the Medicare Health Care Quality (MHCQ/646) demonstration	234,551 dually-eligible beneficiaries in SFY 2013	Savings based on analysis of 646 Demonstration evaluation completed by RTI  <a href="http://innovation.cms.gov/Files/reports/MHCQ-NCCCN-PY3-Eval.pdf">http://innovation.cms.gov/Files/reports/MHCQ-NCCCN-PY3-Eval.pdf</a>

## APPENDIX A: NCCCN ROI ANALYSIS AND RISK-ADJUSTMENT METHODOLOGY

The data in Table 6 are based on Medicaid claims data paid through September 2014 for services delivered between July 2013 and June 2014. All costs are included except for LME/MCO capitation fees. Results are reported for non-dual Medicaid recipients, broken down by ABD status, excluding beneficiaries receiving care in nursing homes during the report period. (Note that beneficiaries in the Pregnancy and CC4C programs are included in this calculation if they are enrolled in NCCCN, but the independent impact of those programs is not fully accounted for here since some of the beneficiaries in those programs are not enrolled).

### Risk-Adjustment Methodology: Clinical Risk Groups and Aggregated Clinical Risk Groups

To account for differences in disease burden and case mix, members were stratified according to their Clinical Risk Group (CRG) using software developed by 3M™ Health Information Systems. Similar in concept to Diagnosis Related Groups (DRGs), Clinical Risk Groups (CRG) can be used to identify clinically meaningful groups of individuals who require similar amounts and types of resources. CRGs are the basis of a hierarchical clinical model that uses standard claims data—including inpatient, outpatient, physician, and pharmacy data—to assign each beneficiary to a single mutually exclusive risk category. For chronic illnesses and conditions, the CRG is further subdivided into explicit severity of illness levels. Then, the more than 1,000 CRGs are rolled up into 44 Aggregated Clinical Risk Groups (ACRG) for ease of classification. ACRGs allow for enrolled and unenrolled beneficiaries with similar diseases and severity of illness to be compared to each other (e.g. the cost of an enrolled beneficiary with poorly controlled diabetes is compared to an unenrolled beneficiary with poorly controlled diabetes).

The 44 ACRGs are labeled with a two-digit number ranging from 10 to 96, the first digit describing the number and type of their most dominant chronic diseases, and the second describing the severity of their disease burden. The following are a few examples of how the ACRGs are defined clinically:

- 10 – Healthy
- 31 – One minor, well-controlled chronic disease, such as high cholesterol or osteoarthritis
- 53 – One major, moderately-severe chronic disease, such as Chronic Obstructive Pulmonary Disease (COPD)
- 65 – Multiple major, severe chronic diseases, such as diabetes *and* coronary artery disease
- 82 – Cancer
- 96 – Catastrophic conditions, such as complicated dialysis or dependence on mechanical ventilation

The ACRGs within the ABD population were further grouped into two strata: 10-56 and 61-96. This was done due to very small sample sizes at the individual ACRG level which skewed results. The 10-56 grouping represents beneficiaries with one or fewer chronic diseases while the 61-96 grouping contains beneficiaries with multiple chronic diseases. Due to its much larger size, the non-ABD population is broken out into each of the 44 ACRGs. Note, these numbers are not continuous, so not all numbers between 10 and 96 are listed due to the reasons outlined above.

## Savings Calculation

Within each program category (ABD and non-ABD) and ACRG, total spend PMPM for unenrolled members was subtracted from PMPM spend among members in the NCCCN-enrolled population. That number was then multiplied by the number of member months for the enrolled population within each program/risk strata to determine the savings impact of being enrolled with NCCCN. The total savings for the ABD population is \$74,435,336 and the total savings for the non-ABD population is \$416,163,737. The gross sum of the savings realized by NCCCN is \$490,599,073.



Appendix A: NCCCN ROI Analysis and Risk-Adjustment methodology

**Table 6: NCCCN Risk-Adjusted Gross Savings Calculation, SFY 2014**

Aged, Blind and Disabled (ABD) Status	Clinical Groupings Defined by Aggregated Clinical Risk Groups (ACRG)	NCCCN-Enrolled Beneficiaries			Unenrolled Beneficiaries			Risk-Adjusted PMPM Difference (Enrolled PMPM - Unenrolled PMPM within ACRG-strata)	Risk-Adjusted Savings by Aggregated Clinical Risk Group (PMPM Difference x Enrolled MM)
		Member Months	Total Spend (from paid claims data)	PMPM Spend (Total Spend / Member Months)	Member Months	Total Spend (from paid claims data)	PMPM Spend (Total Spend / Member Months)		
ABD	Range = 10-56*	678,351	\$185,607,314	\$274	96,583	\$24,046,016	\$249	\$24.65	\$16,720,045
	Range = 61-96*	646,194	\$982,247,736	\$1,520	115,062	\$191,131,316	\$1,661	-\$141.07	-\$91,155,381
	<b>ABD Total</b>	<b>1,324,545</b>	<b>\$1,167,855,050</b>	<b>\$882</b>	<b>211,645</b>	<b>\$215,177,332</b>	<b>\$1,017</b>	<b>n/a</b>	<b>-\$74,435,336</b>
NON-ABD	10	5,918,031	\$355,919,711	\$60	408,150	\$27,976,735	\$69	-\$8.40	-\$49,733,082
	11	1,207,131	\$10,889,316	\$9	142,205	\$1,216,122	\$9	\$0.47	\$566,058
	12	64,712	\$30,795,482	\$476	99,822	\$54,602,976	\$547	-\$71.12	-\$4,602,203
	14	29,312	\$4,675,862	\$160	35,632	\$6,087,975	\$171	-\$11.34	-\$332,297
	15	415,151	\$42,728,794	\$103	57,754	\$17,898,621	\$310	-\$206.99	-\$85,931,221
	20	940,656	\$117,876,824	\$125	58,393	\$8,153,331	\$140	-\$14.32	-\$13,465,631
	22	113,410	\$76,027,244	\$670	124,492	\$92,553,302	\$743	-\$73.07	-\$8,287,170
	24	11,945	\$3,007,688	\$252	9,076	\$2,489,972	\$274	-\$22.55	-\$269,385
	25	233,645	\$47,748,110	\$204	24,988	\$12,241,723	\$490	-\$285.54	-\$66,715,523
	31	758,061	\$148,734,114	\$196	58,336	\$12,818,228	\$220	-\$23.53	-\$17,835,387
	32	156,824	\$43,178,896	\$275	17,008	\$7,693,096	\$452	-\$176.99	-\$27,756,078
	41	47,350	\$13,722,652	\$290	4,780	\$1,486,802	\$311	-\$21.23	-\$1,005,400
	42	4,294	\$1,692,019	\$394	689	\$246,257	\$357	\$36.63	\$157,288
	43	38,696	\$14,308,483	\$370	5,114	\$2,152,136	\$421	-\$51.07	-\$1,976,043
	44	17,384	\$8,297,980	\$477	2,775	\$1,494,475	\$539	-\$61.22	-\$1,064,162
	51	811,410	\$162,974,251	\$201	73,016	\$17,109,449	\$234	-\$33.47	-\$27,159,119
	52	513,956	\$154,328,163	\$300	42,667	\$15,465,772	\$362	-\$62.20	-\$31,968,650
	53	66,518	\$34,861,341	\$524	8,917	\$5,687,018	\$638	-\$113.68	-\$7,562,016
	54	13,108	\$13,438,195	\$1,025	1,504	\$1,614,608	\$1,074	-\$48.35	-\$633,799
	55	2,572	\$2,909,016	\$1,131	470	\$1,023,473	\$2,178	-\$1,046.57	-\$2,691,777
	56	2,190	\$1,489,876	\$680	358	\$259,092	\$724	-\$43.41	-\$95,073
	61	251,940	\$111,562,042	\$443	31,324	\$14,838,722	\$474	-\$30.91	-\$7,786,309
	62	145,945	\$92,449,951	\$633	19,930	\$14,744,686	\$740	-\$106.37	-\$15,523,615
	63	78,067	\$66,267,428	\$849	12,666	\$12,837,165	\$1,014	-\$164.66	-\$12,854,548
	64	41,642	\$48,536,520	\$1,166	7,007	\$8,958,260	\$1,278	-\$112.91	-\$4,701,650
	65	15,163	\$33,060,088	\$2,180	2,546	\$7,294,338	\$2,865	-\$684.71	-\$10,382,195
	66	2,325	\$5,073,738	\$2,182	432	\$1,514,895	\$3,507	-\$1,324.45	-\$3,079,344
	71	3,382	\$3,704,480	\$1,095	484	\$452,822	\$936	\$159.77	\$540,342
	72	3,022	\$3,693,677	\$1,222	536	\$769,589	\$1,436	-\$213.54	-\$645,311
	73	7,452	\$12,363,219	\$1,659	1,324	\$2,314,355	\$1,748	-\$88.96	-\$662,893
	74	1,842	\$4,208,368	\$2,285	363	\$647,292	\$1,783	\$501.50	\$923,762
	75	1,676	\$11,909,536	\$7,106	330	\$2,038,025	\$6,176	\$930.09	\$1,558,838
	76	443	\$1,676,241	\$3,784	95	\$455,277	\$4,792	-\$1,008.55	-\$446,788
	81	648	\$351,701	\$543	172	\$171,043	\$994	-\$451.69	-\$292,693
	82	2,176	\$3,671,963	\$1,687	758	\$2,232,178	\$2,945	-\$1,257.34	-\$2,735,978
	83	1,986	\$3,786,707	\$1,907	613	\$2,359,184	\$3,849	-\$1,941.89	-\$3,856,586
	84	1,009	\$4,417,854	\$4,378	534	\$2,225,302	\$4,167	\$211.22	\$213,118
	85	295	\$1,774,019	\$6,014	125	\$681,290	\$5,450	\$563.30	\$166,174
	91	2,588	\$1,077,242	\$416	330	\$168,979	\$512	-\$95.81	-\$247,960
	92	7,643	\$9,003,900	\$1,178	1,201	\$1,754,777	\$1,461	-\$283.04	-\$2,163,258
	93	4,780	\$9,682,294	\$2,026	708	\$1,497,014	\$2,114	-\$88.84	-\$424,669
	94	2,333	\$7,017,305	\$3,008	473	\$1,336,705	\$2,826	\$181.83	\$424,212
	95	570	\$2,645,926	\$4,642	132	\$735,639	\$5,573	-\$931.04	-\$530,695
	96	637	\$6,144,704	\$9,646	167	\$2,999,112	\$17,959	-\$8,312.43	-\$5,295,021
	<b>Non-ABD Total</b>	<b>11,943,920</b>	<b>\$1,733,682,924</b>	<b>\$145</b>	<b>1,258,396</b>	<b>\$373,297,812</b>	<b>\$297</b>	<b>n/a</b>	<b>-\$416,163,737</b>
<b>Total Risk-Adjusted Savings</b>									<b>-\$490,599,073</b>

**APPENDIX B: NCCCN STAFFING AND COST ALLOCATION**

The NCCCN Staffing and Cost Allocation data represents the NCCCN Central Organization, Networks, Local Health Departments, as well as the total. These data are based on the SFY 2015 budgeting process. One caveat is the Network Salary & Fringe component, which leveraged a recently completed study using SFY 2014 budget data. (For comparability, the consolidated network budget for SFY 2014 is \$93,265,281; the projected revenue for all networks in SFY 2015 totals \$93,508,228, a 0.3% difference.) There have been no significant changes to network financials between these years.

<b>Total</b>		Cost	Percent Total Cost	FTE	Percent Total FTE
Care Management	\$	63,117,355	40.8%	892.34	51.5%
Care Management	\$	51,701,983	33.4%	746.32	43.0%
Behavioral Health	\$	1,478,609	1.0%	18.56	1.1%
Pharmacy	\$	5,009,296	3.2%	52.00	3.0%
Provider and Clinical Leadership	\$	1,146,183	0.7%	5.84	0.3%
Health Check	\$	2,321,642	1.5%	52.65	3.0%
Pregnancy Medical Home	\$	715,625	0.5%	8.09	0.5%
OB Care Management Oversight	\$	257,390	0.2%	5.73	0.3%
Care Coordination for Children Oversight	\$	486,626	0.3%	3.16	0.2%
Provider Services & Practice Support	\$	11,414,769	7.4%	115.88	6.7%
Quality Improvement and Practice Support	\$	3,902,855	2.5%	49.52	2.9%
Behavioral Health	\$	1,740,752	1.1%	19.47	1.1%
Pharmacy	\$	2,467,265	1.6%	25.62	1.5%
Provider and Clinical Leadership	\$	2,580,676	1.7%	13.11	0.8%
Pregnancy Medical Home	\$	723,221	0.5%	8.17	0.5%
NCCCN/Network Operations	\$	41,028,360	26.5%	163.60	9.4%
Operations	\$	14,740,996	9.5%	163.60	9.4%
Informatics	\$	10,457,236	6.8%	-	
Overhead	\$	15,830,128	10.2%	-	
Central Contractors	\$	2,169,664	1.4%		
Local Health Department pass-through	\$	36,989,356	23.9%	562.55	32.4%
OB Care Management	\$	16,750,897	10.8%	281.66	16.2%
Care Coordination for Children	\$	16,925,074	10.9%	280.89	16.2%
Administrative	\$	3,313,385	2.1%		
<b>TOTAL</b>	<b>\$</b>	<b>154,719,505</b>		<b>1,734.38</b>	

## Appendix B: NCCCN Staffing and Cost Allocation

<b>NCCCN Central Organization</b>	<b>Cost</b>	<b>Percent Total Cost</b>	<b>FTE</b>	<b>Percent Total FTE</b>
Care Management	\$ 1,824,173	7.5%	17.60	24.0%
Care Management	\$ 1,196,555	4.9%	12.19	16.7%
Behavioral Health	\$ 153,414	0.6%	1.17	1.6%
Pharmacy	\$ 383,055	1.6%	3.28	4.5%
Provider and Clinical Leadership	\$ -		-	
Health Check	\$ -		-	
Pregnancy Medical Home	\$ 91,149	0.4%	0.96	1.3%
OB Care Management Oversight	\$ -		-	
Care Coordination for Children Oversight	\$ -		-	
Provider Services & Practice Support	\$ 2,003,779	8.2%	15.70	21.4%
Quality Improvement and Practice Support	\$ 1,047,232	4.3%	9.70	13.2%
Behavioral Health	\$ 415,557	1.7%	2.08	2.8%
Pharmacy	\$ 188,669	0.8%	1.62	2.2%
Provider and Clinical Leadership	\$ 253,576	1.0%	1.26	1.7%
Pregnancy Medical Home	\$ 98,745	0.4%	1.04	1.4%
Central Contractors	\$ 2,169,664	8.9%		
NCCCN Operations	\$ 18,467,252	75.5%	39.91	54.5%
Operations	\$ 4,900,917	20.0%	39.91	54.5%
Informatics	\$ 10,457,236	42.7%	-	
Overhead	\$ 3,109,099	12.7%	-	
Local Health Department pass-through				
OB Care Management	\$ -		-	
Care Coordination for Children	\$ -		-	
Administrative	\$ -		-	
<b>TOTAL</b>	<b>\$ 24,464,868</b>		<b>73.21</b>	

## Appendix B: NCCCN Staffing and Cost Allocation

<b>NCCCN Networks</b>	<b>Cost</b>	<b>Percent Total Cost</b>	<b>FTE</b>	<b>Percent Total FTE</b>
Care Management	\$ 61,293,182	65.7%	874.74	79.6%
Care Management	\$ 50,505,428	54.2%	734.13	66.8%
Behavioral Health	\$ 1,325,195	1.4%	17.39	1.6%
Pharmacy	\$ 4,626,241	5.0%	48.72	4.4%
Provider and Clinical Leadership	\$ 1,146,183	1.2%	5.84	0.5%
Health Check	\$ 2,321,642	2.5%	52.65	4.8%
Pregnancy Medical Home	\$ 624,476	0.7%	7.13	0.6%
OB Care Management Oversight	\$ 257,390	0.3%	5.73	0.5%
Care Coordination for Children Oversight	\$ 486,626	0.5%	3.16	0.3%
Provider Services & Practice Support	\$ 9,410,990	10.1%	100.18	9.1%
Quality Improvement and Practice Support	\$ 2,855,623	3.1%	39.82	3.6%
Behavioral Health	\$ 1,325,195	1.4%	17.39	1.6%
Pharmacy	\$ 2,278,596	2.4%	24.00	2.2%
Provider and Clinical Leadership	\$ 2,327,100	2.5%	11.85	1.1%
Pregnancy Medical Home	\$ 624,476	0.7%	7.13	0.6%
Central Contractors	\$ -		-	
Network Operations	\$ 22,561,108	24.2%	123.69	11.3%
Operations	\$ 9,840,079	10.6%	123.69	11.3%
Informatics	\$ -		-	
Overhead	\$ 12,721,029	13.6%	-	
Local Health Department pass-through				
OB Care Management	\$ -		-	
Care Coordination for Children	\$ -		-	
Administrative	\$ -			
<b>TOTAL</b>	<b>\$ 93,265,281</b>		<b>1,098.61</b>	

## Appendix B: NCCCN Staffing and Cost Allocation

Local Health Departments					
	Cost	Percent Total Cost	FTE	Percent Total FTE	
Care Management	\$ -		-		
Care Management	\$ -		-		
Behavioral Health	\$ -		-		
Pharmacy	\$ -		-		
Provider and Clinical Leadership	\$ -		-		
Health Check	\$ -		-		
Pregnancy Medical Home	\$ -		-		
OB Care Management Oversight	\$ -		-		
Care Coordination for Children Oversight	\$ -		-		
Provider Services & Practice Support	\$ -		-		
Quality Improvement and Practice Support	\$ -		-		
Behavioral Health	\$ -		-		
Pharmacy	\$ -		-		
Provider and Clinical Leadership	\$ -		-		
Pregnancy Medical Home	\$ -		-		
Central Contractors	\$ -				
NCCCN/Network Operations	\$ -		-		
Operations	\$ -		-		
Informatics	\$ -		-		
Overhead	\$ -		-		
Local Health Department pass-through	\$ 36,989,356	100.0%	562.55	100.0%	
OB Care Management	\$ 16,750,897	45.3%	281.66	50.1%	
Care Coordination for Children	\$ 16,925,074	45.8%	280.89	49.9%	
Administrative	\$ 3,313,385	9.0%			
<b>TOTAL</b>	<b>\$ 36,989,356</b>		<b>562.55</b>		

## APPENDIX C: CARE MANAGEMENT PROGRAM ANALYSIS

### Description and Background

The NCCCN Care Management program is one of the foundational tenets of NCCCN and is referenced in the contract with DMA under Appendix A: Duties of the Networks (1.11, 1.12, 1.19, 1.21, 1.25).

NCCCN Care Management (CM) is a set of interventions and activities that address the health care of a population to promote quality, cost-effective care. NCCCN Care Management programs apply systems and information to improve care and assist patients to become engaged in a collaborative process designed to manage medical, social and behavioral health conditions more effectively and improve outcomes. NCCCN views the term “care management” as an umbrella term to include case management, care coordination and targeted care management.

The NCCCN Care Management model is evidence-based and built on frameworks, standards of practice and quality guidelines from nationally recognized models and industry leaders, including:

- Chronic Care Model<sup>31</sup>
- Case Management Society of America (CMSA)
- Commission for Case Manager Certification (CCMC)
- National Committee for Quality Assurance (NCQA)

### *Goals of NCCCN Care Management*

- Maintain a model that focuses on patient engagement, empowerment, and education
- Using an interdisciplinary team, meet the needs of chronically ill members by reducing their vulnerability and changing the trajectory of the course of their chronic illness
- Work with medical homes to promote treatment regimens that are aligned with evidence-based guidelines
- Help medical homes design workflows that are patient-centered and focus on facilitation of behavior change and self-care while addressing emotional and social issues as well.
- Reduce fragmented care and facilitate communication across settings and providers

In order to effectively and efficiently meet the complex needs of high-risk patients and to provide the optimal benefit, NCCCN’s care management program is operated as a team approach under the oversight of the Primary Care Manager and in collaboration with the Primary Care Physician (PCP). The Primary Care Manager (PCM) may be a registered nurse (RN), social worker (Bachelors or Masters prepared), or Certified Case Manager (CCM), and coordinates and oversees the delivery of care management services to each patient on their case load. Since PCMs from various disciplines are utilized, the needs of individual patients are aligned with the specific scope of practice, education and expertise of the PCM (e.g., RNs manage more medically complex patients while social workers may work with patients with behavioral health and/or psychosocial conditions). In addition to RNs and Social Workers, the interdisciplinary team may also include pharmacists, pharmacy assistants, nutritionists, experts in behavioral health, palliative care, community resources, care management assistants, etc. The staffing model is designed to enable an efficient workflow and allow professionals to work at the top of their license.

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<sup>31</sup> [http://www.improvingchroniccare.org/index.php?p=The\\_Chronic\\_CareModel&s=2](http://www.improvingchroniccare.org/index.php?p=The_Chronic_CareModel&s=2)

Care Management program staff at the Central Office support the networks by providing key oversight on process development and refinement, staff development, educational resources, training, analytics, reporting, and other needs as they arise. Similar to how care management is deployed at the local level, the Care Management program is very much a team-based program.

Also included in the care management program is the NCCCN Call Center, which is housed at the Central Office. The Call Center consists of a nurse manager, three nurse health coaches and four health educators.

### Data Driven Care Management

NCCCN works dynamically with the Networks, using claims data and analytics, to stratify the population by risks and identify members who will benefit the most from care management. This process defines the priority populations and determines where and how to target resources to deploy the most cost-efficient model and yield optimal outcomes.

Over time, NCCCN has greatly refined our ability to identify the most “impactable” patients. Our ability to combine the methods above with program evaluation findings and national evidence enables implementation of an automated process in which care managers can see which patients are highest priority for outreach.

*All Medicaid beneficiaries enrolled with NCCCN are analyzed for their risk and impactability.*

### Targeting the Right Patients at the Right Time

#### *Transitional Care Priority*

The NCCCN Transitional Care Program is a sophisticated approach to finding impactable patients at a highly impactable moment – transitioning from one setting of care to another. The Transitional Care Priority Indicator identifies non-Dual patients at risk for a failed transition after a hospital stay. This indicator is generated using a data model that includes medication information, utilization history, presence of multiple chronic conditions (including behavioral health diagnoses), and/or criteria defining high risk children.

Real-time Admission/Discharge/Transfer (ADT) data from approximately 60 NC hospitals enables care managers to intervene with Transitional Care Priority patients at the time of their discharge in order to prevent costly readmissions.

#### *NCCCN Priority*

The NCCCN Priority Indicator identifies high-risk/high-cost patients who are in need of intensive care management services. This indicator is based on sophisticated predictive models that flag Dual and non-Dual patients who are at high risk for a hospitalization in the next 12 months, or generating potentially preventable spending above what would be expected for their clinical disease profile, and are highly likely to benefit from care management.

**Table 7: Volume of Priority Patients for Care Management**

	Monthly Average of Priority Patients
<b>Transitional Care Priority (non-Dual)</b>	128,233 (of whom 53,868 are discharged from the hospital)
<b>NCCCN Priority</b>	29,833

*Real-time Referrals*

Because meeting the needs of NCCCN providers and community partners is a priority, patients identified with potential care management needs at the point of care are included as part of our priority population.

*Other Priority Care Management Initiatives*

- Working with beneficiaries with high ED utilization
- Utilizing the NCCCN Call Center to outreach to new enrollees and patients with non-emergent ED visits as well as offering health coaching to appropriate patients
- Palliative Care coordinators work to enhance the quality and access to care at the end of life through integration of palliative care with transitional care services.

*Implementing Care Management*

Utilizing Motivational Interviewing (MI) techniques and other evidence-based resources, care team members work diligently to engage beneficiaries and their families/support systems in care management. Once the recipient has agreed to participate, the following process is set in motion in a patient-centered, coordinated fashion:

1. Initial Assessment – process of gathering data from all relevant sources (patient, medical home, clinical, claims, etc. ) in order to identify all important problems and barriers (existing and potential) that keep the patient from better health and lead to unplanned hospitalizations.
2. Planning – process of using the assessment data to work with the patient and the care team to prioritize problems, identify goals, and develop a patient-centered plan of care (written document shared with the patient and team).
3. Implementation – tasks and interventions carried out by the care team in order to meet the goals of the plan of care and improve patient outcomes. This includes coordination of care activities and communication with the medical home, community resources, specialty providers, and any other service the patient may be receiving.
4. Evaluation – process of ongoing monitoring and adjusting of goals, tasks, and interventions to ensure barriers are being identified and addressed and patient needs are being met.

*Priority Interventions*

- Face – to – face encounters
- Medication management
- Patient education



- Timely follow-up care, including post-discharge appointments with primary care providers and specialists

NCCCN Care Managers are community-based, and embedded in hospitals and practices where needed. Roughly 112 FTE care managers are physically located within 149 PCP practices with large Medicaid populations across the state, and are fully dedicated to managing that practice's NCCCN population. In addition, approximately 56 FTE care managers are embedded in 49 high volume hospitals across the state, which allows for timely engagement with transitional care patients prior to their discharge.

Interacting with patients and their families/support systems, face-to-face in their home, community, and/or in the medical home is preferred. This is optimal for patient engagement, establishing an effective relationship to promote behavior change, and performing a comprehensive assessment. Frequent contact using a combination of face-to-face encounters and telephonic follow-up is necessary for effective intense care management. Once the goals of intensive care management have been achieved, Health Coaching is available for patients interested in continuing to improve self-care and reduce risk factors in an effort to prevent complications and better manage their chronic illness.

Medication errors and adherence issues are known causes of frequent ED use, hospitalization and readmissions. Network pharmacists and pharmacy techs are critical members of the care team in the performance of medication reconciliation, comprehensive medication reviews, resolution of drug therapy problems, closing the gaps on adherence issues, and other medication-related interventions.

Patient engagement, empowerment and education is the foundational framework of NCCCN Care Management. A variety of trainings, materials, and evidence-based techniques are available to ensure patient education is delivered in a manner that is culturally appropriate and easily understandable by the patient, their families and support systems.

Timely follow-up care after hospitalization with the PCP or specialists is important to reduce the risk of readmission. NCCCN evaluation findings indicate that some patients need this follow up sooner than others in order to prevent readmission. Reports are available to the care team that flag those who need a follow-up visit within 7, 14, and 21 days post discharge. This enables the care manager to prioritize activities and work with practices to ensure those at highest risk are seen quickly after discharge

In addition to the care managers at the local level, the NCCCN Call Center supports the care management program by providing ED follow-up calls, new enrollee education, and health coaching. Beneficiaries who have been to the ED for a non-emergent visit are contacted by Call Center staff and educated about their medical home benefit and other local resources, as well as reeducating them on appropriate use of the emergency department. Call Center staff also reach out to new enrollees to review how to use their benefits from Medicaid and NCCCN. They use this opportunity to discuss the role of the PCP and medical home, appropriate use of the ED, obtaining access to specialists and urgent care when necessary and other benefits available to them. Another role of the Call Center is to provide health coaching to patients who are referred by care managers. The Health Coach Nurses work with patients to improve their chronic diseases such as diabetes and discuss topics such as weight loss, tobacco cessation, nutrition and exercise.

## Structure

### Target Population

**Table 8: NCCCN Population Summary**

	Medicaid Recipients
<b>Total NC Medicaid Recipients</b>	1.8 Million
<b>Total NCCCN-Enrolled Members</b>	1.44 Million
<b>Annual Average Aged, Blind or Disabled Members</b>	279,500
<b>Total Unduplicated Patients Touched in CY 2013</b>	475,539
<b>Total Unduplicated Face-to-Face Encounters</b>	170,875

### Staffing

The NCCCN care management staff is comprised of 752.15 FTE across the state and accounts for \$52,848,166 in funding for personnel. This includes care management leadership at the network and Central Office levels, primary care managers, other care managers on the care management team, and care management support for adult and pediatric populations, excluding the Care Coordination for Children (CC4C) program.

### Informatics Infrastructure (IC)

#### *Population Analytics*

As described above, NCCCN utilizes sophisticated analytics to evaluate the entire NCCCN population for appropriateness of NCCCN services, most notably, intensive care management. The methodology behind the population stratification is constantly reviewed for accuracy, in order to best hone in on the highest risk patients who will most benefit from care management services.

#### *Care Management Information System (CMIS)*

The Care Management Information System (CMIS) is a user-built, patient-centric, electronic record of care management activities used by NCCCN care managers since 2001, with over 1,500 active users statewide. CMIS contains demographic data and claims data on over 1.8 million Medicaid recipients, of whom approximately 1.4 million are currently enrolled with a practice in a NCCCN network. Patients enrolled in Medicaid reap the benefits of the continuity of care provided by CMIS. The system maintains a health record and single care plan that stays with the patient as he or she moves from one area of the state to another or across eligibility programs. CMIS contains standardized health assessments, care plans, screening tools, disease management, health coaching modules, and workflow management features.

## Performance Measurement

### Key Performance Indicators

The main tenet of NCCCN's care management program is to improve the quality of care for the Medicaid population in North Carolina, and in order to measure our success with this goal, NCCCN developed four

risk-adjusted Key Performance Indicators (KPI): Inpatient Admission Rate, Emergency Department Utilization Rate, Potentially Preventable Readmission Rate, and Overall PMPM Spending.

The following are the SFY 2014 KPI results:

- **Decreased Total Medicaid Spending of \$16.06 per member per month (PMPM).** The Aged, Blind or Disabled (ABD) saw a decrease of \$36.06 PMPM and the non-ABD population saw a decrease of \$14.06 PMPM.
- **Lower Inpatient Admissions of 11%.** The ABD and non-ABD populations saw declines of 4% and 20%, respectively.
- **Fewer Emergency Department Visits of 10%.** The ABD and non-ABD populations saw declines of 3% and 12%, respectively.
- **Reduced Potentially Preventable Readmissions (PPRs) of 32%.** The decline for the ABD and non-ABD populations were 34% and 29%, respectively.

#### Call Center Metrics

In CY 2014, the Call Center made a total of 131,119 calls to NCCCN-enrolled Medicaid members across the state (Table 7). Each month, the Call Center Health Educators reach out to more than 10,000 members for non-emergent ED follow up and new enrollee education, of whom they are able to reach about 30%. The RN Health Coaches receive referrals from care managers for beneficiaries who would benefit from health coaching provided through the Call Center. The engagement rate for health coaching is 75%.

**Table 9: Call Center Outreach Summary**

	Total Calls	Completed Calls
<b>Non-emergent ED Follow-Up</b>	114,406	33,891
<b>New Enrollee Education</b>	16,713	4,159
<b>Health Coaching</b>	335 patients actively enrolled in health coaching	

#### Return on Investment

The Program Evaluation unit at NCCCN actively applies rigorous statistical methods to evaluate the effectiveness and impact of all of NCCCN's care management programs. One program that has received a lot of evaluation is NCCCN's largest care management program – transitional care, which serves high-risk enrollees (tagged as 'Transitional Care Priority' patients) coming out of the hospital to ensure a successful return to the community and preventing future admissions.

In 2013, NCCCN published the first in a series of peer-reviewed articles describing the overall return on investment observed when high-risk patients receive transitional care, compared to similar patients who did not receive transitional care management.<sup>32</sup> Transitional care reduced recipients' likelihood of a readmission by 20%, and continued to have an impact on future utilization as much as a year after discharge. Additionally, findings reported that the greater the risk of readmission, the more likelihood of benefit from transitional care.

<sup>32</sup> Jackson et al. Transitional care cut hospital readmissions for North Carolina Medicaid patients with complex chronic conditions. Health Affairs. 2013 Aug;32(8):1407-15.

Since 2013, NCCCN has continued to evaluate specific components of the transitional care program to ensure that the most impactful components are delivered. For example, we have been able to report that there is a specific sub-group of high-risk patients who benefit from follow-up with an outpatient provider within 7 days of discharge. This knowledge allows us to appropriately prioritize patients for appointments with their PCPs following discharge. Additionally, we have been able to identify specific types of patients who benefit substantially from transitional care being delivered via a home visit. This knowledge allows NCCCN to more strategically direct the most costly and most intensive interventions to those patients who will benefit the most in terms of lower costs and utilization in the future (with incremental savings ranging from \$2,000 to \$6,000 per patient managed). NCCCN has also been able to quantify and publish its impact on complex patients with both medical and mental health conditions – a particularly high-risk population with high costs/utilization related to both of their conditions.<sup>33</sup>

In addition to inpatient transitional care, NCCCN has developed and tested algorithms for identifying high-yield care opportunities for care management outreach separate from transitional care (tagged as “NCCCN Priority” patients). These include patients with histories of preventable hospital utilization or patients who frequently go to the emergency room. Once again, applying rigorous, controlled methodologies, NCCCN is able to quantify the impact of intervening with such patients (an average of \$1,800 in incremental savings per patient managed). All of this emerging information has allowed NCCCN to begin moving from using risk scores to drive care management, to using impactability scores – measures of the anticipated incremental benefit from care management – to ensure that care management resources are always directed towards the highest-yield care opportunities. See Table 10 for a summary of savings estimates for NCCCN priority care management initiatives.

**Table 10: Estimated Gross Savings for NCCCN Priority Care Management Initiatives**

	<b>Gross Savings Estimated (Per Recipient/Per Six Months)</b>
Transitional Care (high-intensity intervention)	\$2,000 - \$6,000
Transitional Care (low-intensity intervention)	\$1,000
ED Super-utilizers	\$1,800
NCCCN Priority (Non-Dual)	\$1,400

## Future Direction

### Long Term Services and Supports

As Medicaid reform around Long Term Services and Supports (LTSS) gets underway, there is tremendous opportunity for NCCCN to take on responsibility for this complex and vulnerable population. The locally-built care management infrastructure, as well as the statewide network of medical homes enables NCCCN to care for this complex population and to appropriately coordinate the services needed for individuals to maintain in the least restrictive care environment.

<sup>33</sup> Jackson et al. Timeliness of Outpatient Follow-up: An Evidence-Based Approach for Planning After Hospital Discharge. *Ann Fam Med* March/April 2015;13(2) 115-122.

### Care Management Decision Support

In 2013, NCCCN began a pilot in five networks to implement a Care Management Decision Support (CM-DS) initiative to assist primary care providers (PCP) in referring their Medicaid patients for Medicaid Home and Community Based Services, especially Personal Care Services (PCS). At the request of the PCP, NCCCN Care Managers perform a home visit and review the patient's ability to independently perform the Activities of Daily Living (ADL) in question related to their need for PCS. NCCCN is in the process of working with the Division to analyze performance of the pilot and preparing all networks to be able to implement a CM-DS Program if the Division and Department direct us to do so.

### Improved Analytics

As mentioned above, NCCCN continues to analyze and refine the methodology it uses to target its resources to the Medicaid recipients who will benefit most from care management services. Like the industry standard<sup>34</sup>, we currently focus our interventions on patients at the highest risk for excessive utilization and cost. While this methodology has yielded impressive savings and much improvement in the unnecessary utilization of inpatient and ED services by the NCCCN population, it doesn't take into consideration the "impactability" of NCCCN's care management interventions, which is a key component to successfully bending Medicaid's cost curve.

We are in the process of implementing a state-of-the-art "Care Management Impactability Score" that will estimate the amount of savings that can be realized through the care management of each individual. For example, a patient with a score of '300' is a patient for whom, if care managed, one could expect to achieve savings of \$300 per member per month over the next six months, or \$1,800 total. Simultaneously, we will begin utilizing a "Transitional Care Impactability Score" which quantifies the incremental savings estimated (per member per month) for the patients who receive the highest-intensity transitional care intervention (including a home visit) compared to no transitional care intervention.

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<sup>34</sup> Knutson et al. Predictive Modeling: A Guide for State Medicaid Purchasers. Center for Health Care Strategies. August 2009. [http://www.chcs.org/media/Predictive\\_Modeling\\_Guide.pdf](http://www.chcs.org/media/Predictive_Modeling_Guide.pdf)

## APPENDIX D: PRACTICE SUPPORT AND PROVIDER SERVICES PROGRAM ANALYSIS

### Description and Background

The mission of the Practice Support and Provider Services program at NCCCN is to strengthen and support the NCCCN provider network by deploying a collaborative practice support model that engages providers and practices, assisting them in achieving high quality, cost effective, and patient centered care. Practice Support and Provider Services supports providers and practices with tools, resources, coaching and a collaborative learning environment in which they can assess their performance and engage systematically in improvement activities using their own practice data and comparisons to others as benchmarks. This includes supporting broad quality improvement initiatives across the networks, as well as in practices. The responsibilities of the Practice Support and Provider Services program are referenced in the contract with DMA in sections 1.1, 2.2.1, Appendix A: 1.3B & L, 1.8, 1.19, 1.20, and 1.25.

At the Central Office, the Practice Support and Provider Services team is comprised of a Director, Physician Lead, Quality Improvement (QI) Facilitator, Data Analyst and Project Manager. As needed, the team also integrates other members of the clinical program, including pharmacy, care management, behavioral health, pediatrics and reporting. The Central Office is advised by a Network QI Practice Support Steering Committee, which includes a representative from each network's QI team. The Central Office team works to create a consistent QI Practice Support model across the state, by:

- Promoting best practices across Networks
- Reviewing performance metrics at an organizational and Network level
- Providing QI training, resources and tools to drive improvement and facilitate change
- Identifying opportunities for improving outcomes through continuous feedback and benchmarking

In order to systematize the Practice Support and Provider Services model across the Networks, the Practice Support and Provider Services Program Plan was developed from national quality improvement models and implemented across the State. Key components of the Program Plan include sustaining a competent, trained multidisciplinary QI team at each Network; methodology for prioritizing practices for quality improvement and outreach; and a plan for engaging, assessing and working with high priority practices. The Network Practice Support and Provider Services team includes the following roles:

- **Quality Improvement Coordinator:** oversees QI activities with a focus on provider and patient engagement
- **Quality Improvement Specialist(s):** works with practices and within networks to manage and meet the needs of target Populations, as well as NCCCN identified priorities
- **Medical/Clinical Director:** QI involvement across the network/practices, maintains contact with local providers
- **Quality Improvement Practice Support Team:** multidisciplinary, comprised of QI Coordinator, QI Staff, Physician Champion, Program staff and ad hoc personnel. This team collectively possesses QI knowledge & skills, collaborates and implements QI goals at the practice/ program level/network.

All of the Network QI team members perform the following functions in order to support the NCCCN primary care practice network:

- Preparing for and conducting practice visits, engagement strategies
- Conducting Comprehensive Practice and Practice Readiness Assessments
- Conversations around data, interpretation & analysis of data
- Population management, Chronic disease management
- Process/workflows
- Medical Home: Access to Care/After-Hours Protocols, ED referral process
- Patient Centered Medical Home Assistance
- Training and learning opportunities
- Provider/ staff tools that support population management and shared decision making

### Structure

#### Target Population

The target population for Practice Support and Provider Services includes all adult and pediatric primary care practices that are enrolled with NCCCN. Practice Support and Provider Services also supports NCCCN priorities and network initiatives that may be program specific or broader in nature.

<b>NCCCN Primary Care Practices</b>	<b>1,882</b>
<b>NCQA Recognized PCMH Practices</b>	494

#### Staffing

Practice Support and Provider Services is comprised of 62.63 FTE across NCCCN and accounts for \$6,483,531 in funding for personnel. This includes management, physician leadership, quality improvement staff, practice outreach staff and other support personnel across the Central Office and networks.

#### Informatics Infrastructure

The Informatics Center provides a robust platform of reports and data that assist the Practice Support and Provider Services personnel in identifying trends in order to drive change and improvement across their Networks and the State. The following are a few examples of how the reports are used:

- Priority Patient List:
  - Used to create a list of sickle cell patients under 21 years old that was used to target practices needing the updated sickle cell guidelines education and tools
  - Pulled list of asthma patients for a pediatric clinic for a population management project.
- Patient Summary Statistics Report: Used to prioritize practices based on their enrollment, utilization, and disease burden
- Care Alerts Report: Identifies types of care overdue or noteworthy to follow-up on, as well as ED or inpatient

## Performance Measurement

### Quality Measures

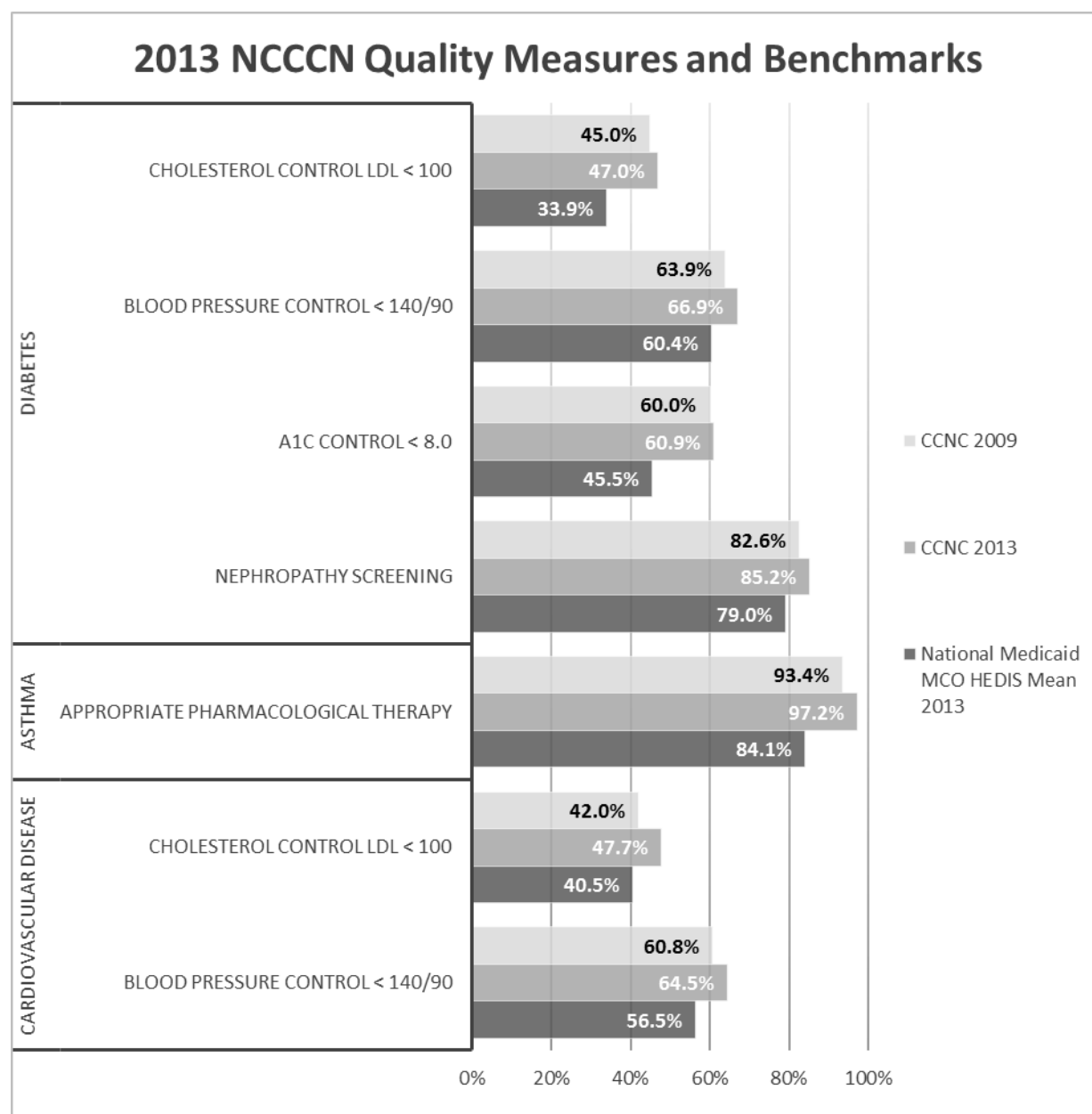
Since its beginning in 1998, NCCCN has used performance measurement and feedback to help meet its goals of improving the quality of care for Medicaid recipients while controlling costs. Quality measurement is intended to stimulate or facilitate quality improvement efforts in NCCCN practices and local networks, and to evaluate the performance of the program as a whole.

NCCCN's Quality Measurement and Feedback (QMAF) program was substantially expanded in 2009 in response to the needs of the expanded aged, blind or disabled (ABD) enrolled population with multiple chronic conditions, and in response to requests from providers and practices to seek alignment in quality measures across multiple payer or stakeholder entities. A workgroup with representation from all 14 NCCCN networks was convened in 2007, and met over the course of a year for in-depth review of candidate measures. Goals were to identify a broad set of quality measures with: 1) clinical importance (based on disease prevalence and impact, and potential for improvement), 2) scientific soundness (strength of evidence underlying the clinical practice recommendation; evidence that the measure itself improves care; and the reliability, validity, and comprehensibility of the measure), and 3) implementation feasibility, and 4) synergy with other state and national quality measures or quality improvement programs. Measures are not intended to capture every aspect of good clinical care. QMAF measures are reviewed on an annual basis, and final measures are approved by vote of the NCCCN Clinical Directors.

The following chart displays NCCCN's performance on several quality measures that also have NCQA HEDIS benchmarks. HEDIS benchmarks enable NCCCN to compare its performance to the National Medicaid MCO market. NCCCN has not only improved since 2009 but exceeds the national performance level in every measure.

The QMAF Chart Review process was temporarily put on hold in 2014 due to the lack of claims data during the NC Tracks transition. The Chart Review process for 2015 started in March 2015. For a complete list of the 2015 QMAF Measure Set, still in draft form, see Appendix J. The results from CY 2013 are displayed in Figure 2.





**Figure 2: 2013 NCCCN Quality Measures and Benchmarks.** Results are from the 2013 QMAF Chart Review cycle. Comparison of 2009 and 2013 results, as well as 2013 National Medicaid MCO HEDIS Mean results<sup>35</sup>.

NCQA Patient Centered Medical Home Recognition (PCMH)

494 NC practices have achieved NCQA Primary Care Medical Home recognition, making North Carolina the 3rd highest volume of NCQA-recognized PCMH practices in the nation.

<sup>35</sup> 2014 NCQA State of Health Care Quality Report: <http://www.ncqa.org/Portals/0/Newsroom/2014/SOHC-web.pdf>

### Examples of work occurring in networks

- *Care alerts*: network-wide reduction in the number of care alerts by 22.5% in one network
- *High ED Utilizer Workgroup*: network & hospital collaboration evolved into effective case-staffing that brought multi-disciplinary/multi-agency providers together to align care and resources for difficult-to-impact patients.
- *Reduction of non-emergent use of the Emergency Department*: Interventions include reinforcement of the practice as a medical home when patients come for appointments, track patients who had non-emergent use of the emergency department in the last 30 days and refer to Care Management. Created ED or Not to ED brochure for individual practices.
- *Reduction of ED rates*: combining after-hours audit with an educational campaign to practices to help them reduce their ED rates by making sure they have an after-hours contact plan in place

### Return on Investment

In 2001, the Institute of Medicine (IOM), published its landmark report, “Crossing the Quality Chasm: A New Health System for the 21<sup>st</sup> Century”. This report charged health leaders to take a closer look at the significant deficiencies in the quality of the healthcare that we experience as a nation. The United States spends an estimated three trillion dollars on healthcare, or nearly 20% of the Gross National Product. For the first time in national history, accountability is being introduced to medicine, medical practices, and all healthcare delivery.<sup>36</sup>

#### Patient Centered Medical Homes

Patient-centered medical home models have been around for many years and have been shown to not only reduce costs, but also improve the care patients receive, and increase provider retention and patient satisfaction.<sup>37</sup> The Group Health Cooperative in Seattle found that providing a primary care medical home to beneficiaries lowered ED and inpatient utilization and decreased per member per month costs by \$10. Although 100% of NCCCN’s population is not in need of active care management (because they may be relatively healthy), every NCCCN enrollee has a medical home and reaps the benefits of after-hours care, wraparound services and ongoing quality improvement. In CY2014, there were 16,596,497 member months, approximately 27% of which are recognized by NCQA as a patient-centered medical home (PCMH). This means a potential of \$44 million in savings from the medical home effect.

*Providing a primary care medical home to beneficiaries lowers ED and inpatient utilization and decreases PMPM spending by up to \$10.*

#### Disease Management

Chronic diseases such as heart disease, hypertension, COPD and diabetes are among the most prevalent, costly, and preventable health problems facing Americans. According to the Institute of Medicine's *Crossing the Quality Chasm* report, about 50% of these Americans are not receiving good chronic illness

<sup>36</sup> Institute of Medicine. Crossing the Quality Chasm: A New Health System for the 21st Century. March 2001

<sup>37</sup> Reid, et al. The Group Health Medical Home At Year Two: Cost Savings, Higher Patient Satisfaction, And Less Burnout For Providers. Health Aff May 2010 vol. 29 no. 5: 835-843

care. Disease management programs have been shown to decrease health care costs and utilization and improve health outcomes in participants.

A 2002 Geisinger Health Study found that diabetes management programs had a statistically significant effect on HEDIS outcomes and saved, on average, \$108 per member per month.<sup>38</sup> When analyzing NCCCN's performance on the HEDIS diabetes measures, it is clear that many patients have better outcomes than compared with the HEDIS mean. For example, in 2013, 60.9% of charts reviewed across the State showed patients with an HgbA1c (a blood test that measures level of the patient's blood sugar) less than 8.0, which is recommended by the American Diabetes Association. The comparable HEDIS mean was 46.5%. This difference equates to 14.4% of the population with a better blood level than the average Medicaid HMO plan, which is actually 13,450 people out of the 93,406 NCCCN enrollees with diabetes. At an average of \$108 PMPM savings, this means a potential of \$17,431,801 total healthcare savings.

The Framingham Heart Study found that the risk of stroke and heart attack for patients with hypertension was 2.5 times higher than those with normal blood pressure.<sup>39</sup> Normalizing the blood pressure of a patient with hypertension not only reduces their risk of future cardiac events, but equates to a savings of \$547 per year in avoided healthcare utilization. NCQA's Heart-Stroke Recognition Program (HSRP) and Bridges to Excellence (BTE), national quality benchmarking bodies and common pay-for-performance components, are based on these findings. 64.5% of NCCCN enrollees included in the 2013 QMAF chart review sample (those with a qualifying condition) had a blood pressure less than 140/90 (the recommended threshold for blood pressure control), compared to 56.3% in the average Medicaid HMO plan. This means 8.2% of the NCCCN population with hypertension, or 14,708 people, had better blood pressure control, which could mean a savings of \$8,045,283 in healthcare spending.

Asthma management is well founded in the literature as being effective at lowering costs and utilization and improving patient outcomes. Appropriate management of asthma reduces costly exacerbations which lead to emergency department and inpatient utilization, and has been found to save \$351 PMPM.<sup>40</sup> Proper medication management is particularly crucial in the management of asthma and improved medication adherence has been shown to save \$95 per patient per year.<sup>41</sup>

NCCCN has consistently performed better than both the HEDIS MCO mean and 90<sup>th</sup> percentile benchmarks. In 2013, 97.2% of patients included in the chart review sample had appropriate medication management (the corresponding HEDIS MCO mean and 90<sup>th</sup> percentile were 83.9% and 89.8% respectively). This means 21,897 North Carolina Medicaid recipients had better asthma care than the majority of Medicaid managed care plans across the county.

## Future Direction

Medicaid Reform is on the horizon. Practice Support and Provider Services and the practices they support are prepared for upcoming changes. The move from fee for service to value based care is key, as well as emphasizing population health outcomes and providing practices/providers with the context and

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<sup>38</sup> Sidorov, et al. Does Diabetes Disease Management Save Money and Improve Outcomes? Diabetes Care. April 2002 vol. 25 no. 4: 684-689

<sup>39</sup> Bridges to Excellence Operations Manual [http://www.ehcca.com/presentations/pfpsummit/p2\\_h3.pdf](http://www.ehcca.com/presentations/pfpsummit/p2_h3.pdf)

<sup>40</sup> Ivanova, et al. Effect of asthma exacerbations on health care costs among asthmatic patients with moderate and severe persistent asthma. J Allergy Clin Immunol. 2012 May;129(5):1229-35

<sup>41</sup> Rust, et al. Potential Savings From Increasing Adherence to Inhaled Corticosteroid Therapy in Medicaid-Enrolled Children. American Journal of Managed Care. March 20, 2015

realization of how transformation efforts impact high quality care, lower costs, better efficiencies and improved patient satisfaction.

The following are new initiatives that Practice Support and Provider Services will focus on in the coming year:

- Integration and use of enhanced NCCCN health information technology platform to better inform quality improvement priorities and interventions
- Ongoing evaluation of indicators for performance and quality
- Enhance training curriculum for Practice Support and Provider Services staff
- Dissemination of sickle cell co-management guidelines to primary care providers and specialists
- Implement quality reporting from Pediatric EHR project
- Increasing QI capacity at the practice level

Federal Children's Health Insurance Program Reauthorization Act (CHIPRA) funding, which has allowed for a vast amount of support and EHR development in the pediatric practices across the State, has received a no-cost extension through October 2015. NCCCN is dedicated to continuing this work to every extent possible, but will have to incorporate it into the infrastructure built solely within the Medicaid PMPM it receives to the Central Office and Networks.

## APPENDIX E: PREGNANCY PROGRAM ANALYSIS

### Description and Background

The Pregnancy Medical Home (PMH) program was established by the Division of Medical Assistance through State Plan Amendment #10-035A in March 2011, was launched in April 2011 and now includes the majority of maternity care providers across North Carolina. As PMH participants, prenatal care providers are supported to increase access to care and improve outcomes for the pregnant Medicaid population. This triple-aim initiative is intended to improve the quality of care for pregnant Medicaid patients, improve birth outcomes and reduce health care costs, with a specific focus on the reduction of preterm birth.

*The Pregnancy Medical Home Program targets women at risk for poor birth outcomes.*

The PMH program includes Pregnancy Care Management (OBCM), a care coordination model for pregnant Medicaid patients identified as being at-risk of poor birth outcomes, such as low birth weight or preterm birth. OBCM services are delivered by local care management entities (primarily local health departments) working by contract with NCCCN networks. In addition to defined contract expectations, a Pregnancy Care Management Standardized Plan guides the work of care managers. Pregnancy care managers are expected to work in a cooperative and collaborative manner with PMH providers.

The Pregnancy Medical Home program promotes clinical standards of care and best practices that reflect the most current evidence base in terms of strategies to prevent preterm birth. The focus for implementation of evidence-based practices in order to standardize care across all PMH settings is the development and dissemination of PMH Care Pathways. The following pathways have been developed and are currently available on the PMH Care Pathways webpage on [NCCCN's website](#):

- **Management of Hypertensive Disorders of Pregnancy** –promotes conservative management of pregnancy-related hypertension to reduce the rate of preterm birth (pregnancy-related hypertension is a key driver of late preterm birth rates) and management of patients with severe preeclampsia in risk-appropriate settings to continue the pregnancy as long as safely possible
- **Induction of Labor Among Nulliparous Patients** – establishes standards for inducing labor in first-time mothers to reduce the risk of cesarean delivery
- **Preterm Birth Prevention Using Cervical Length Measurement and Progesterone Treatment** – promotes appropriate utilization of ultrasound for cervical length measurement to identify patients at risk of preterm birth (sets standards to prevent overutilization of transvaginal ultrasound procedures); establishes clear guidelines for the use of progesterone treatment to reduce the risk of preterm birth among patients with short cervix and/or history of preterm birth
- **Management of Perinatal Tobacco Use** – promotes screening all patients for tobacco use in pregnancy and sets standards for managing patients who smoke during pregnancy to increase the likelihood of smoking cessation and improved birth outcomes (low birth weight, preterm birth)

- **Postpartum Care and the Transition to Well Woman Care** – promotes optimal timing of postpartum care, offers strategies to improve the rate of postpartum visits and delineates the key components of the postpartum visit
- **Management of Substance Use in Pregnancy** – assures screening of all pregnant patients and establishes processes and standards based on ACOG and ASAM guidelines for providing care and appropriate referral to patients using drugs or alcohol during pregnancy
- **Reproductive Life Planning and the Use of Long-Acting Reversible Contraception (LARC)** – sets standards for PMH providers to address prevention of unintended future pregnancy, including promotion of the use of highly-effective methods (LARC) in an effort to ensure optimal birth spacing, which is associated with a reduced risk of preterm birth, and to reduce the rate of unintended pregnancy
- **Management of Multiple Gestation** (planned)
- **Management of Obesity in Pregnancy** (planned)

## Structure

NCCCN's 14 local networks each have an OB team consisting of one or more physician champions and at least one nurse coordinator, who is the primary point of contact for the PMH. This team recruits and supports local OB providers serving the pregnant Medicaid population. The network OB team functions in two primary areas: quality improvement/practice support and support of pregnancy care management carried out by local care management entities. A small central office team operates the program at the state level, including supporting the network teams, developing and implementing analytics, creating evidence-based guidance materials, and working across agencies with other perinatal health stakeholders at the state and national levels.

Maternity care providers join the PMH program by signing a standardized contract (developed jointly by NCCCN and DMA) with their local NCCCN network. This entitles them to certain benefits, including:

- Ability to bill Medicaid for a \$50 incentive for each risk screening completed on a new OB patient
- Ability to bill Medicaid for a \$150 incentive for each postpartum visit that meets clinical standards and is completed within 60 days of delivery
- Enhanced rate of reimbursement for OB package codes reflecting vaginal deliveries (13% increase over rate to non-PMH providers)
- Pregnancy care manager to serve their at-risk Medicaid patients
- Analytics, technical assistance and ongoing support from the local NCCCN network OB team

The PMH contract also obligates providers to adhere to certain performance standards, including:

- Avoidance of elective deliveries <39 weeks
- Standardized risk screening of all new OB Medicaid patients
- Maintaining the cesarean delivery rate below established thresholds
- Progesterone treatment (17p) for all patients with a history of spontaneous preterm birth

## Target Population

**Table 11: Target Population for Pregnancy Medical Home Program**

	Annual Number of Births
<b>Non-Emergency Medicaid Births in CY 2013</b>	56,735
<b>Patients with positive PMH risk screening form</b> Approximately 70% of patients had one or more priority risk factors identified on the PMH risk screening form, making them eligible for Pregnancy Care Management services.	~40,000

## Staffing

The Pregnancy program consists of a total of 303.65 FTE across the Central Office, networks and local health departments. 22 FTE are housed in NCCCN, including the Central Office and the networks.

A distinct PMPM payment supports NCCCN's Pregnancy Medical Home activities (network OB teams and central office team), including work on both quality improvement/practice support activities with PMH practices and administration and oversight of pregnancy care management services at local care management entities. The PMPM rate is \$9.01, with \$8.00 going to networks and \$1.01 going to central office. The base population is patients in the Medicaid for Pregnant Women category. The SFY14 payment to NCCCN was \$2,900,211.

A separate PMPM payment finances OBCM services; while these funds are paid to NCCCN by DMA, they are passed through in their entirety to the local care management entities (LCMEs) contracted to deliver these services. The OBCM PMPM rate is \$5.22, and the base population is female Medicaid recipients ages 14-44. The SFY2014 payment was \$18,932,929.

## Informatics Infrastructure

PMH infrastructure at the practice level revolves around the OB1 and OB2 reports, which are patient lists and summary statistics including demographics and a broad range of antepartum, intrapartum and postpartum quality and utilization metrics for patients attributed to a PMH practice for prenatal care. The OB2 report is available in a graphical version that can be run at the practice and network level. The OB2 reports provide practice, network, state and peer group rates for comparison purposes (all PMHs are assigned to 2 peer groups based on rurality and on practice type). Key performance indicators can be run at the state and network levels. PMH resources, internal quality metrics and practice support tools are shared with network teams in a Fileshare folder.

## Performance Measurement

The PMH program is a relatively new initiative that has already achieved success in all three areas of the triple aim – improved quality of care, improved outcomes and reduced costs. For example, a declining cesarean delivery rate has reduced Medicaid expenditures on deliveries, improved safety for patients, and reduced risk of poor outcomes in future pregnancies.

1. The rate of **low birth weight** in the Medicaid population has decreased since the launch of the PMH program:
  - Low birth weight - decreased from **11.12%** in SFY 2011 to **10.37%** in SFY 2014, a statistically significant change. This seemingly modest improvement is significant because medical costs for low birth weight babies can be very high, averaging \$49,000 in a baby's first year of life, or more than ten times more than babies born without complications.<sup>42</sup>
  - Very low birth weight - from **2.18%** in SFY 2011 to **1.86%** in SFY 2014 after being over 2% for the past decade, also a statistically significant change. These infants are the most expensive to care for, so even a small shift to a higher birth weight category has a major cost impact. Long-term cost savings are also seen as VLBW infants have higher healthcare utilization over the lifetime and more expenses related to social services and educational needs.<sup>43</sup>
  - Racial disparity – there has been a gradual narrowing of the disparity in rates of low birth weight among African American and White Medicaid populations noted since 2012. In year ending March 2011, the rate of LBW among African Americans was 5.31 percentage points higher than that of whites (14.33% vs 9.02%). In year ending March 2014, the African American LBW rate was 4.86 percentage points higher than that of whites (13.54% vs 8.66%).
  - Preterm Birth - The rate of preterm birth (deliveries before 39 weeks) has decreased since the launch of the PMH program, especially the late preterm birth category, which is when the majority of preterm births occur. There has been a shift in term births, with fewer births at 37-38 weeks and more in the 39-41 week range.
2. The **cesarean delivery rate** has shown a decrease from 29.93% in SFY2012 to 29.44% in SFY2014. This rate is lower than that of the general population in North Carolina (30.3% in CY 2013<sup>44</sup>), and the rate in North Carolina is lower than the national average (32.7% in CY 2013<sup>45</sup>). The **average cost per delivery** has decreased from \$3,394 in SFY 2012 to \$3,269 in SFY 2013.
3. The **cost of prenatal care** has decreased from \$409 per patient to \$376. The rate of receiving **prenatal care in the first trimester** remained 63% through year ending 6/30/14. While the goal is for this number to increase significantly, the fact that a decrease in early entry to prenatal care was not seen during the transition to NC FAST, with associated delays in eligibility processing for pregnant women, is a success.
4. The **postpartum visit rate** increased from 40.9% in 2011 to 46.5% in 2013. This claims-driven measure underestimates the rate due the use of package codes to bill for OB care that do not allow for identification of postpartum visit.

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<sup>42</sup> Jennifer L. Howse, Ph.D., president, March of Dimes, White Plains, N.Y.; Maureen Hack, M.D., Ch.B., department of pediatrics, Rainbow Babies and Children's Hospital, Cleveland; March 17, 2009, Healthy Babies, Healthy Business: Cutting Costs and Reducing Premature Birth Rates, March of Dimes Foundation

<sup>43</sup> Rand, Preventing Very Low Birthweight Births: A Bundle of Savings. 1998.

<sup>44</sup> <http://www.schs.state.nc.us/data/vital/volume1/2013/nc.html>

<sup>45</sup> <http://www.cdc.gov/nchs/fastats/delivery.htm>



5. **OB provider participation in PMH** continues to increase, now at >1,700 individual providers (including OB/GYNs, certified nurse midwives, family physicians, nurse practitioners and physician assistants), representing roughly 90% of the providers serving pregnant Medicaid patients.
6. The number of **pregnant Medicaid patients served by a PMH** (based on receipt of a PMH risk screening form) in CY2013 was 48,057, or 83% of all Medicaid deliveries. Because not all Medicaid patients receive risk screening, this is an underestimate, which will be updated as claims data allow.
7. The number of patients who received **pregnancy care management services** has increased steadily as the program has built capacity since its launch in 2011, as shown in Table 12.

**Table 12: Volume of Actively Managed PMH Patients**

	Number of Medicaid Patients with an Active OBCM Case Status and a Completed Patient-Centered Task with an OBCM Care Manager
CY 2012	32,384
CY 2013	42,070
CY 2014	43,188

8. Additionally, 80% of pregnant Medicaid patients who are identified as being at risk for poor birth outcome are contacted by a pregnancy care manager within 30 days of being identified.

## Future Direction

Priority areas for the PMH program include:

- Increasing the proportion of Medicaid pregnancies with first trimester prenatal care by identifying pregnant patients as early as possible in pregnancy, expanding the number of providers who accept Medicaid and who accept patients with presumptive eligibility coverage in early pregnancy, and ensuring patients in all areas of the state are able to obtain presumptive eligibility coverage.
- Increasing access to long-acting reversible contraception (LARC) in the hospital setting following delivery by working with the NC Hospital Association and delivery facilities.
- Improving access to highly effective contraception to promote appropriate pregnancy spacing (short interpregnancy interval is a risk factor for preterm birth) and to reduce the rate of unintended pregnancy.
- Improving the management of patients with substance abuse and opioid use disorders.
- Identifying women of childbearing age with risk factors that put them at high risk for pregnancy complications, such as severe chronic disease, opioid dependence, use of medications that are unsafe in pregnancy

## APPENDIX F: PHARMACY PROGRAM ANALYSIS

### Description and Background

The NCCCN Pharmacy Program has been in existence statewide since 2007, and it is referenced in the contract with DMA under Network Obligations, sections 2(c), 34(a), and 34(b). The high level goal of the program is to work with medical providers, pharmacies, hospitals, and other relevant entities to ensure safe, effective, appropriate, and economical use of medications to improve health outcomes across the continuum of care. This goal is accomplished with several key activities:

- Patient Care: Comprehensively reviewing the medication regimens of targeted, high-risk patients, either based on care management referral, provider referral, or population health analytics; assisting medical providers with creation and management of drug regimens in patients with chronic disease states (e.g., diabetes, asthma, congestive heart failure, behavioral health, etc.), including but not limited to, activities such as conducting patient visits, adjusting medication dosages in concert with the PCP, delivering patient education, and performing other services within the professional area of expertise
- Quality Improvement & Practice Support: Educating medical providers and pharmacies about NCCCN program initiatives and DMA policy changes; working with providers to resolve medication-related gaps in care
- Informatics: Developing and supporting a platform for community-based medication management that allows multiple types of healthcare professionals working in different care settings to all contribute to the patient's record

Pharmacy Program staff at the Community Care central office assist with network deployment of the above activities by serving as the primary liaison with DMA Outpatient Pharmacy Program staff about emerging policy initiatives, centrally developing materials for use statewide in provider educational efforts, supporting population health analytics to determine patients most in need of medication management specifically provided by a pharmacist, and developing / supporting an informatics infrastructure needed to effectively deploy medication management programs across care settings and with involvement of multiple types of health care professionals (nurses, social workers, pharmacists, etc.).

### Structure

#### Target Population

The target population for pharmacy program activities is dependent upon the type of service being delivered.

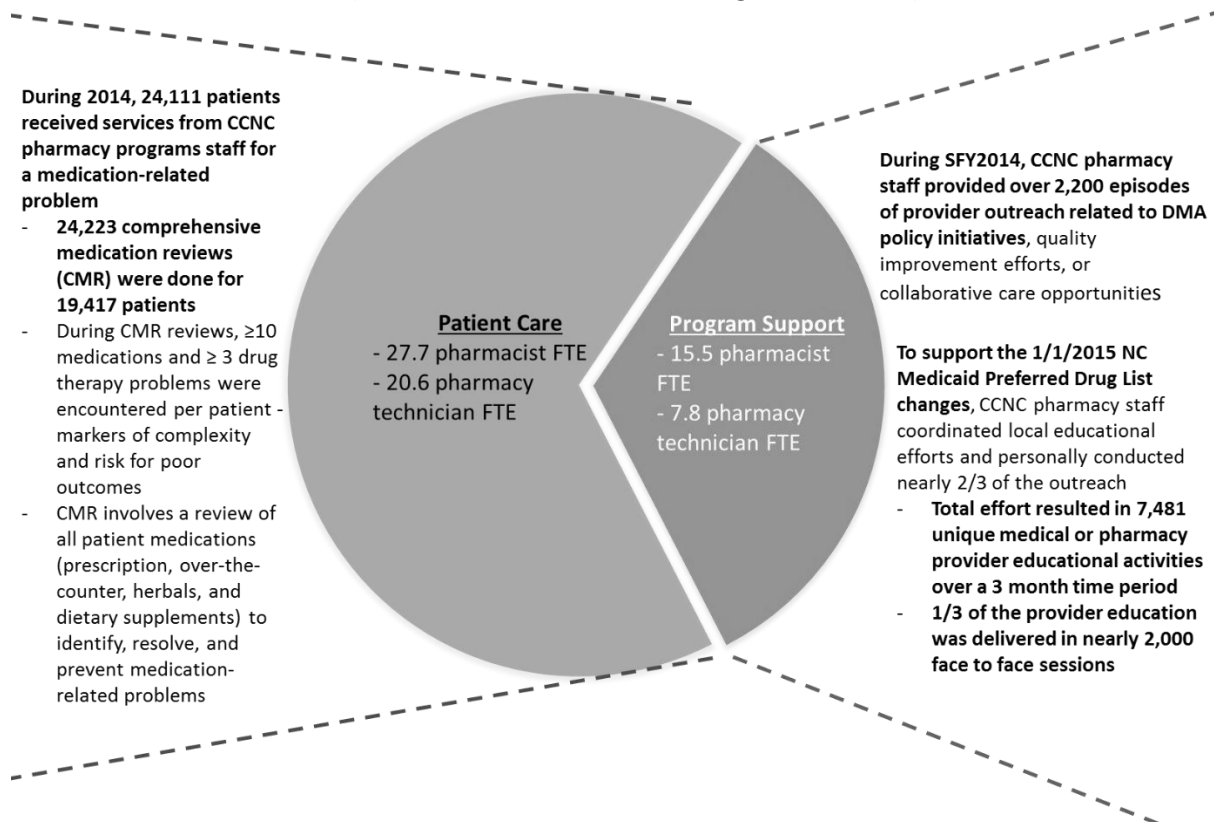
- Patient Care: The most impactable population for pharmacist medication management activities generally includes patients with one or more chronic conditions where opportunities to improve their health outcomes through better use/management of their medications exist. Identification of patients most fruitful for pharmacist intervention typically occurs through referrals from care managers or providers, or through population health analytics that are used to create NCCCN's priority populations.
- Quality Improvement & Practice Support: The target population for program support efforts depends on the nature of the effort. As an example, NCCCN's support of changes to NC Medicaid's Preferred Drug List targets providers who have written prescriptions for medications that were

recently filled by the patient *and* will newly require some type of pre-approval when the changes take effect.

### Staffing

Across the 14 Community Care networks and the central office, the Pharmacy Programs staff includes 48.4 pharmacist FTEs and 31.2 pharmacy support (non-pharmacist) FTEs. The Pharmacy Program accounts for \$7,476,561 in funding for personnel.

### PHARMACY PROGRAMS STAFFING AND KEY CARE TEAM CONTRIBUTIONS (across all 14 networks, excluding central office)



### Informatics Infrastructure

A key to NCCCN's overall population health and analytics efforts are reports by network staff to identify patients who utilize healthcare resources beyond what their medical conditions normally require. The NCCCN tenet is that by connecting such patients to a primary care medical home and improving care delivery and coordination, such quality of care improvements will drive decreased total healthcare costs. The PHARMACeHOME web-based application was created to further support NCCCN network pharmacy management initiatives in this regard, and to address the need to provide more comprehensive and timely information on medication therapy management to the primary care provider, network pharmacists, and the care manager collaborating on patient care issues. Extracts of pharmacy claims history are loaded into the application database to provide a detailed patient prescription history and user-generated reports such as adherence calculations, gaps in therapy and other clinical care alerts (e.g., indicator of beta agonist overuse, which may indicate poor asthma control) for follow-up activities to improve care. Data includes both point-of-care activities and population-based reports identifying patients who may benefit from

pharmaceutical care outreach through the medical home. Primary care doctors, specialists, hospitals and pharmacies can all access this information.

The goals of the PHARMACeHOME platform include improved care delivery care and associated decreased costs via improved management of chronic disease states, avoidance of therapeutic duplication, less prescription drug abuse, increased use of generics, and fewer hospital admissions, re-admissions and emergency department visits due to improved medication reconciliation efforts across the continuum of care. The platform allows for pharmacist clinician identification of drug therapy problems and subsequent communication of those problems to a prescriber or other healthcare professionals able to resolve the issue. Where electronic links are available the system can retrieve and communicate data to other electronic medical record systems. This enhanced set of aggregated information facilitates medication reconciliation efforts and resolution of medication therapy problems and decreased total healthcare costs. (The potential quality of care and return on investment of such clinical consultative activities as described above are further detailed below.)

### Performance Measurement

NCCCN's four key performance indicators collectively measure the success of the medical home program, including interventions provided by NCCCN care managers, pharmacists, and other staff. None of the KPIs reflect specific successes in medication use; however, a June 2012 report from Treo Solutions showed a statewide linkage between rates higher rates of medication adherence and lower rates of hospitalization and ED use.<sup>46</sup>



\*Absolute percentage difference between actual and expected rates for CCNC enrolled vs. unenrolled  
Treo Solutions Performance Analysis: Healthcare Utilization of CCNC-Enrolled Population - 2010 ABD Enrolled vs. ABD Unenrolled

### Return on Investment

With the documented significant impact of multiple chronic diseases and medications on healthcare resource utilization, the benefit of pharmacists' engagement in medical home medication management

<sup>46</sup> Treo Solutions, Performance Analysis: Healthcare Utilization of CCNC-Enrolled Population 2007-2010  
<https://www.communitycarenc.org/media/related-downloads/treo-solutions-report-on-utilization.pdf>

for high risk populations has been clearly outlined.<sup>47,48,49,50</sup> According to an Institute of Medicine report, “Pharmaceuticals are the most common medical intervention, and their potential for both help and harm is enormous. Ensuring that the American people get the most benefit from advances in pharmacology is a critical component of improving the national health care system.”<sup>44</sup> Published reports, including the US

*The ROI of pharmacist-provided medication management can reach as high as 12:1.*

*Public Health Service Report on Advanced Pharmacy Practice to the US Surgeon General* suggest that pharmacist-provided medication management services have demonstrated a significant return on investment (ROI) (as high as 12:1 and an average of 3:1 to 5:1).<sup>46,51,52</sup> By coordinating efforts within existing or novel patient care models, such as patient-centered medical homes, it is possible to improve access to care, improve healthcare-related outcomes, and decrease overall healthcare costs for complex patients with multiple comorbid illnesses.

One of the main benefits of team-based care including comprehensive medication management/comprehensive medication review is to identify patients who are not meeting established goals of therapy and to help them achieve those goals. Patients not meeting medication related clinical goals are at an increased risk for emergency department visits or hospital admissions. In 2006, 71 percent of physician office visits had at least one prescription listed in the patient record.<sup>53</sup> Studies have reported that 32 percent of adverse events leading to hospital admission were attributed to medications<sup>54</sup> and that drug interactions are an important issue in medication use at home<sup>55</sup>. Furthermore, only 33–50 percent of patients with chronic conditions adhere completely to prescribed medication therapies.<sup>56</sup> Finances are an important cause of low adherence to prescribed medication therapies among patients. The

<sup>47</sup> Isetts BJ, Brummel AR, De Oliveira DR, Moen DW. Managing drug related morbidity and mortality in the patient-centered medical home. *Medical Care* 2012 ; 50(11):997-1001, November 2012.

<sup>48</sup> The Institute of Medicine, National Academy of Sciences. *Informing the future: Critical issues in health*. Fourth edition, page 13. <http://www.nap.edu/catalog/12014.html>

<sup>49</sup> National Conference of State Legislatures. *Medication Therapy Management: Pharmaceutical Safety and Savings*. March 2012. <http://www.ncsl.org/issues-research/health/medication-therapy-management.aspx>.

<sup>50</sup> Giberson S, Yoder S, Lee MP. Improving Patient and Health System Outcomes through Advanced Pharmacy Practice. A Report to the U.S. Surgeon General. Office of the Chief Pharmacist. U.S. Public Health Service. Dec 2011.

<sup>51</sup> Schumock GT, Meek PD, Ploetz PA, Vermeulen LC. Economic evaluations of clinical pharmacy services--1988-1995. *The Publications Committee of the American College of Clinical Pharmacy. Pharmacotherapy*. Nov-Dec 1996;16(6):1188-1208.

<sup>52</sup> Perez AD, Fred. Hoffman, James. Meek, Patrick. Touchette, Daniel. Vermeulen, Pete. Schumock, Glen. *Economic Evaluations of Clinical Pharmacy Services: 2001–2005. Pharmacotherapy*. 2009;29(1):128.

<sup>53</sup> Cherry DK, Hing E, Woodwell DA, Rechtsteiner EA. *National Ambulatory Medical Care Survey: 2006 summary. Natl Health Stat Report*.2008;(3):1–39.

<sup>54</sup> Budnitz DS, Pollack DA, Weindenbach KN, Mendelsohn AB, Schroder TJ, Annest JL. National surveillance of emergency department visits for outpatient adverse drug events. *JAMA*. 2006;296: 1858–66.

<sup>55</sup> Qato DM, Alexander GC, Conti RM, Johnson M, Schumm P, Lindau ST. Use of prescription and over-the counter medications and dietary supplements among older adults in the United States. *JAMA*. 2008;300 (24):2867–78.

<sup>56</sup> National Council on Patient Information and Education. *Enhancing prescription medicine adherence: a national action plan*. Rockville (MD): National Council on Patient Information and Education; 2007 Aug.

Commonwealth Fund reported that 58 percent of U.S. physicians stated their patients often have difficulty paying for medications and care.<sup>57</sup>

#### Pharmacy Program Return on Investment Literature

A systematic literature search was conducted to identify published economic evaluations of pharmacist clinical services. Among studies reporting data necessary to determine a benefit-to-cost ratio, with a reported range of 3:1-5:1 (with one report as high as 12:1)—meaning that for every \$1 invested in pharmacist clinical services, \$3-5 was achieved in reduced costs or other economic benefits.<sup>58,59,60,61,62,63,64,65,66,67</sup>

**Table 13: Summary of Pharmacy ROI Literature**

Clinical Pharmacist Services: Evidence Based Impact on Outcomes and Cost Containment		
Practice Setting or Population	Pharmacist Engagement	Outcome/Impact Observed
NCCCN-enrolled Medicaid Patients	Medication reviews and medication reconciliation as part of care team transitional care process	Patients served had 20% decrease in 1 year readmission rate during the subsequent year, compared to clinically similar patients who received usual care; one readmission was averted for every six patients who received transitional care services and one for every three of the highest-risk patients <sup>68</sup>

<sup>57</sup> Schoen C, Osborn R, Doty MM, Squires D, Peugh J, Applebaum S. A survey of primary care physicians in eleven countries, 2009: perspectives on care, costs, and experiences. *Health Aff (Millwood)*. 2009; 28(6):w1171–83.

<sup>58</sup> James PA, Bergus GR, Doucette WR, et al. Physician and pharmacist collaboration to improve blood pressure control. *Arch Intern Med*. 2009;169(21):1996–2002.

<sup>59</sup> Cranor CW, Bunting BA, Christensen DB. The Asheville Project: long-term clinical and economic outcomes of a community pharmacy diabetes care program. *J Am Pharm Assoc*. 2003; 43:173–84.

<sup>60</sup> Bunting BA, Smith BH, Sutherland SE. The Asheville Project: clinical and economic outcomes of a community-based long-term medication therapy management program for hypertension and dyslipidemia. *J Am Pharm Assoc*. 2008;48:23–31.

<sup>61</sup> Isetts BJ, Schondelmeyer SW, Artz MB, Lenarz LA, Heaton AH, Wadd WB, et al. Clinical and economic outcomes of medication therapy management services: the Minnesota experience. *J Am Pharm Assoc*. 2008;48:203–11.

<sup>62</sup> Sommers JP. Prescription drug expenditures in the 10 largest states for persons under age 65, 2005. 2008. Agency for Health Care Research and Quality.

<sup>63</sup> Smith M, Giuliano MR, Starkowski MP. In Connecticut: Improving Patient Medication Management In Primary Care. *Heal Aff*. 2011;30(4):646–654. doi:10.1377/hlthaff.2011.0002.

<sup>64</sup> Devine EB, Hoang S, Fisk AW, Wilson-Norton JL, Lawless NM, Louie C. Strategies to optimize medication use in the physician group practice: the role of the clinical pharmacist. *J Am Pharm Assoc*. 2009;49:181–91.

<sup>65</sup> Giberson S, Yoder S, Lee MP. Improving Patient and Health System Outcomes through Advanced Pharmacy Practice. A Report to the U.S. Surgeon General. Office of the Chief Pharmacist. U.S. Public Health Service. Dec 2011.

<sup>66</sup> Schumock GT, Meek PD, Ploetz PA, Vermeulen LC. Economic evaluations of clinical pharmacy services--1988-1995. The Publications Committee of the American College of Clinical Pharmacy. *Pharmacotherapy*. Nov-Dec 1996;16(6):1188-1208.

<sup>67</sup> Perez AD, Fred. Hoffman, James. Meek, Patrick. Touchette, Daniel. Vermeulen, Pete. Schumock, Glen. Economic Evaluations of Clinical Pharmacy Services: 2001–2005. *Pharmacotherapy*. 2009;29(1):128.

<sup>68</sup> Jackson CT, Trygstad TK, DeWalt DA, Dubard CA. Transitional Care Cut Hospital Readmissions For North Carolina Medicaid Patients With Complex Chronic Conditions. *Health Affairs* 2013. 32, 8 (2013): 1407–1415.

Clinical Pharmacist Services: Evidence Based Impact on Outcomes and Cost Containment		
Practice Setting or Population	Pharmacist Engagement	Outcome/Impact Observed
Minnesota patients enrolled in Blue Plus insurance product of BCBS-Minnesota	Pharmacist delivered CMR services provided by pharmacists to BlueCross BlueShield health plan beneficiaries in collaboration with primary care providers	A significant decrease in total health expenditures was observed, from \$11,965 to \$8,197 per person (n = 186, P < 0.0001); reduced or averted expenditures exceeded the cost of services by more than 12:1 <sup>73</sup>
Fairview Health Services – a not-for-profit health care system in Minnesota	Pharmacist delivered comprehensive medication review (CMR) for targeted population- chronic care for patients with complex medical conditions	40% met standard of care benchmarks related to diabetes, hypertension, and hyperlipidemia, compared to only 17.5% on usual care patients; median PMPM health care costs measured at 5 intervals over a 15-month period were significantly lower in innovation than in non-innovation sites <sup>69</sup>
Multiple peer-reviewed published reports in ambulatory care environment	Comprehensive medication reviews for targeted populations, medication reconciliation, medication optimization, disease state management	Among studies reporting data necessary to determine a benefit-to-cost ratio, with a reported range of 3:1-5:1 (with one report as high as 12:1)—for every \$1 invested in pharmacist clinical services, \$3-5 was achieved in reduced costs or other economic benefits <sup>70,71,72,73,74,75,76,77,78,79</sup>

<sup>69</sup> Isetts BJ, Brummel AR, De Oliveira DR, Moen DW. Managing drug related morbidity and mortality in the patient-centered medical home. *Medical Care* 2012 ; 50(11):997-1001, November 2012.

<sup>70</sup> James PA, Bergus GR, Doucette WR, et al. Physician and pharmacist collaboration to improve blood pressure control. *Arch Intern Med*. 2009;169(21):1996–2002.

<sup>71</sup> Cranor CW, Bunting BA, Christensen DB. The Asheville Project: long-term clinical and economic outcomes of a community pharmacy diabetes care program. *J Am Pharm Assoc*. 2003; 43:173–84.

<sup>72</sup> Bunting BA, Smith BH, Sutherland SE. The Asheville Project: clinical and economic outcomes of a community-based long-term medication therapy management program for hypertension and dyslipidemia. *J Am Pharm Assoc*. 2008;48:23–31.

<sup>73</sup> Isetts BJ, Schondelmeyer SW, Artz MB, Lenarz LA, Heaton AH, Wadd WB, et al. Clinical and economic outcomes of medication therapy management services: the Minnesota experience. *J Am Pharm Assoc*. 2008;48:203–11.

<sup>74</sup> Sommers JP. Prescription drug expenditures in the 10 largest states for persons under age 65, 2005. 2008. Agency for Health Care Research and Quality.

<sup>75</sup> Smith M, Giuliano MR, Starkowski MP. In Connecticut: Improving Patient Medication Management In Primary Care. *Heal Aff*. 2011;30(4):646–654. doi:10.1377/hlthaff.2011.0002.

<sup>76</sup> Devine EB, Hoang S, Fisk AW, Wilson-Norton JL, Lawless NM, Louie C. Strategies to optimize medication use in the physician group practice: the role of the clinical pharmacist. *J Am Pharm Assoc*. 2009;49:181–91.

<sup>77</sup> Giberson S, Yoder S, Lee MP. Improving Patient and Health System Outcomes through Advanced Pharmacy Practice. A Report to the U.S. Surgeon General. Office of the Chief Pharmacist. U.S. Public Health Service. Dec 2011.

<sup>78</sup> Schumock GT, Meek PD, Ploetz PA, Vermeulen LC. Economic evaluations of clinical pharmacy services--1988-1995. The Publications Committee of the American College of Clinical Pharmacy. *Pharmacotherapy*. Nov-Dec 1996;16(6):1188-1208.

<sup>79</sup> Perez AD, Fred. Hoffman, James. Meek, Patrick. Touchette, Daniel. Vermeulen, Pete. Schumock, Glen. Economic Evaluations of Clinical Pharmacy Services: 2001–2005. *Pharmacotherapy*. 2009;29(1):128.

## Pharmacy Metrics

As stated above, patients not meeting clinical goals are at an increased risk for emergency department visits or hospital admissions. NCCCN pharmacy driven team-based patient management efforts in addressing medication related problems are well documented in PHARMACeHOME.

*Over 22,000  
comprehensive  
medication reviews  
were completed in  
SFY 2014.*

In SFY 2014, NCCCN network pharmacists documented 22,207 comprehensive medication reviews (CMRs), an average of 4.02 such reviews per quarter per 1,000 Medicaid enrollees. This CMR process involves a review of all patient medications, including prescription, over-the-counter, herbal medications and dietary supplements to identify, resolve, and prevent medication-related problems, including adverse events. Such processes, along with identified therapeutic problems and resolution efforts, are documented in the PHARMACeHOME platform. While no direct cost-benefit analysis has been attributed to this specific NCCCN pharmacy program effort, published reports suggest that beneficiaries who receive such

services are estimated to have annual healthcare costs reduced by 31.5%.<sup>80</sup> In this same report by Isetts and colleagues, chart audits for hypertension management indicated that 71% of intervention patients and 59% of the comparison group patients met HEDIS 2001 criteria ( $P = 0.03$ ), while for cholesterol management, 52% of intervention patients with high cholesterol met HEDIS 2001 criteria compared with 30% of patients in the comparison group ( $P = 0.001$ ). Further, in another published report, it was determined that of patients who received such CMR services, 40% met standard of care benchmarks related to diabetes, hypertension, and hyperlipidemia, compared to only 17.5% on usual care patients.<sup>81</sup> The achievement of such care benchmarks is associated with improved quality of care, improved wellness, and decreased overall healthcare costs.

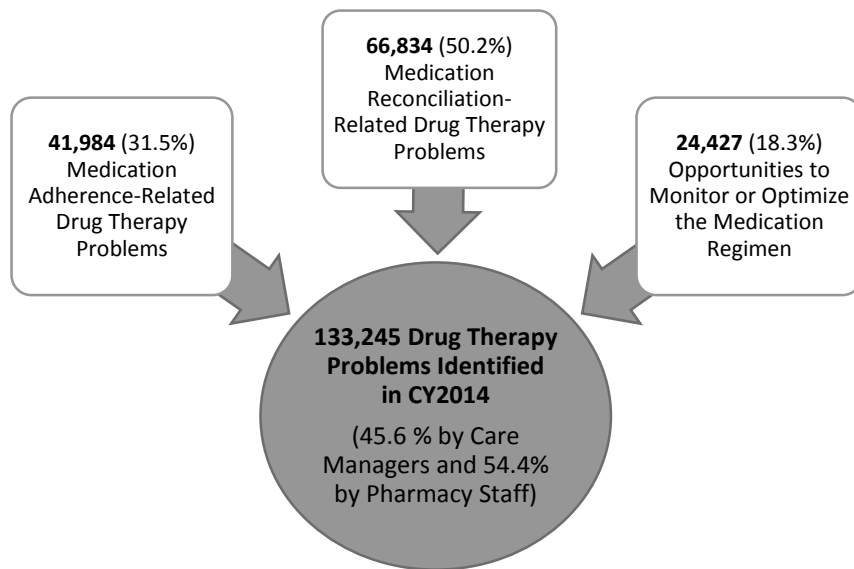
NCCCN has documented evidence of the positive and significant impact of medication reconciliation and other transitions of care focused programs on decreasing rehospitalization rates for patients being discharged from an inpatient stay. In a study of patients hospitalized during 2010–11, NCCCN found that those who received NCCCN mediated transitional care (including pharmacist mediated medication review/evaluation) were 20 percent less likely to experience a readmission during the subsequent year, compared to clinically similar patients who received usual care. One readmission was averted for every six patients who received transitional care services and one for every three of the highest-risk patients.<sup>82</sup>

<sup>80</sup> Isetts BJ, Schondelmeyer SW, Artz MB, Lenarz LA, Heaton AH, Wadd WB, et al. Clinical and economic outcomes of medication therapy management services: the Minnesota experience. *J Am Pharm Assoc.* 2008;48:203–11.

<sup>81</sup> Isetts BJ, Brummel AR, De Oliveira DR, Moen DW. Managing drug related morbidity and mortality in the patient-centered medical home. *Medical Care* 2012 ; 50(11):997-1001, November 2012.

<sup>82</sup> Jackson CT, Trygstad TK, DeWalt DA, Dubard CA. Transitional Care Cut Hospital Readmissions For North Carolina Medicaid Patients With Complex Chronic Conditions. *Health Affairs* 2013. 32, 8 (2013): 1407–1415.





Lastly, there is documented evidence of utilizing the NCCCN network infrastructure for pushing out information regarding DMA clinical policy changes and providing policy support such as for the NC-DMA preferred drug list (PDL) changes that were implemented effective January 1, 2015. Successful educational outreach to providers of such PDL and/or policy changes is key to preventing disruptions of patient care and increased administrative problems for providers. During the period 11/1/2014 through 1/31/2015, 2631 outreach efforts were documented by Community Care of North Carolina (NCCCN) staff, resulting in 7481 unique educational activities, in educating healthcare providers, pharmacies, and affiliated healthcare agencies across North Carolina. Each unique activity spent in engaging a practice was documented separately, such that a practice could have a site visit, phone call, and email correspondence all related to the PDL change. Of these efforts, 4744 or 63% were led by NCCCN network pharmacy personnel (pharmacists and pharmacy program assistants), 1391 or 18% by network program administrators, and 742 or 10% by care managers.

Outreach modalities included mailing/emailing/faxing of information – 4475 or 64.7%, several types of face to face activities (practice-provider visits, meetings, trainings) – 1999 or 29%, or telephonic outreach – 446 or 6%. As each activity was documented as a unique effort, face to face or telephonic communication could be followed by a mailing/emailing/faxing of hard copy educational information.

For the total outreach effort, 5621 or 76.9% of activities were directed towards medical practices and providers (primary care and specialty providers), 820 or 11.2% directed towards community pharmacies, 674 or 9.2% to public health departments/schools/dental practices, and 108 or 1.5% to LME/MCO/CABHAs.

**Table 14: NCCCN Pharmacy Outreach Summary**

NCCCN Educational Outreach Efforts to Support NC Medicaid Preferred Drug List (November 1, 2014 – January 31, 2015)		
Summary of Effort	Method of Education	Providers Types Receiving Education
<ul style="list-style-type: none"> <li>• 7481 unique educational activities</li> <li>• 63% led by pharmacists and pharmacy program assistants</li> </ul>	<ul style="list-style-type: none"> <li>• 29% face to face via practice / provider visits, meetings, trainings</li> <li>• 6% via telephone</li> <li>• 65% via email / fax / mail</li> </ul>	<ul style="list-style-type: none"> <li>• 5621 or 77% targeted medical practices / providers</li> <li>• 820 or 11% targeted community pharmacies</li> <li>• 108 or 1.5% targeted behavioral health (LME/MCO/CABHAs)</li> </ul>

In conclusion, use of pharmacists as part of the care team with the medical home should be able to reduce the total health care costs of its patients by reducing unnecessary emergency department visits, specialty consultations, and hospitalizations. Given the prevalence of medication-related problems in rising health care costs, pharmacists are key team members in these cost containment efforts.<sup>83</sup>

### Future Direction

Because all three of the key NCCCN pharmacy program activities listed in the Description and Background are pertinent in a provider-led ACO environment, this section focuses on emerging / potential activities that NCCCN Pharmacy Programs can do to support Medicaid reform efforts specifically. NCCCN Pharmacy Programs leadership believe that the most valuable new function that NCCCN Pharmacy Programs can do to support provider-led ACOs is to lead, operate, and manage enhanced services pharmacy networks – namely the Community Pharmacy Enhanced Services Network (CPESN) and Specialty Pharmacy Enhanced Services Network (SPESN).

While community pharmacy and specialty pharmacy enhanced services networks dispense different types of medications, needs for enhanced pharmacy services are conceptually similar – traditional, non-enhanced pharmacy services provide only a minimal amount of patient education and assistance for each prescription, but an important subset of the patient population (primarily complex patients with multiple chronic illnesses who utilize a large portion of healthcare resources) needs enhanced services from the pharmacy that focus on the whole patient with all of their chronic illnesses and comorbidities, not just an individual prescription. For specialty pharmacy, payer and disease specific criteria for managing the patient's care are also pertinent parts of the enhanced services provided.

<sup>83</sup> Smith M, Bates DW, Bodenheimer T, Cleary PD. Why pharmacists belong in the medical home. *Health Aff (Millwood)*. 2010 May;29(5):906–13. doi:10.1377/hlthaff.2010.0209.

**CCNC's Role – Statewide and Regional Network Administration**

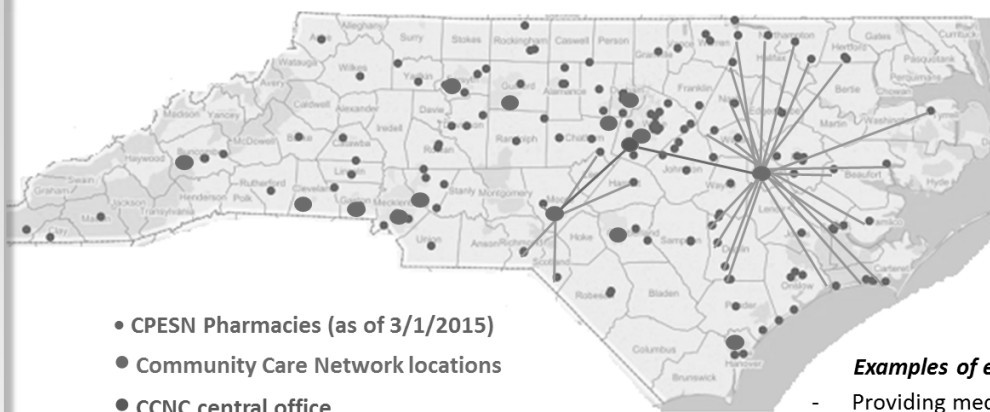
- Enhanced services training
- Performance measurement
- Quality improvement and quality assurance
- Statewide/universal documentation platform
- Payment\*
- Patient stratification and targeting for services
- DMA pharmacy program alignment and policy assistance

\* Performance-based payment that is for the provision of enhanced pharmacy services

**Why are enhanced pharmacy services networks needed?**

An important subset of the patient population, primarily those with multiple chronic illnesses who utilize a disproportionate share of healthcare resources, need enhanced services from the pharmacy that focus on the whole patient – all of their chronic illnesses and medications along with unique needs. For specialty pharmacy, payer and disease specific criteria for managing the patient's care are also pertinent parts of enhanced pharmacy services.

**CCNC Administration of Enhanced Services Pharmacy Networks**  
**Community Pharmacy Enhanced Services Network (CPESN)**  
**Established February 2014**



**Enhanced Services Pharmacy Networks align with Medicaid reform efforts:**

- Accountable
- Total / integrated care
- Competitive
- Outcomes oriented
- Cost effective
- Transparent

**Examples of enhanced services include:**

- Providing medication adherence monitoring and coaching along with other tools, such as specialized packaging and home delivery, to promote medication adherence when patients have complex medication regimens
- Customizing prescription labels or packaging to meet the unique needs of the patient (e.g., use of auxiliary labeling to assist a visually impaired patient)
- Conducting an in-depth review of all patient medications (prescription, over-the-counter, herbals, and dietary supplements) to identify, resolve, and prevent medication-related problems
- Coordinating care with the patient's primary care medical home, specialty providers, healthcare agencies, and other pharmacies

## APPENDIX G: BEHAVIORAL HEALTH PROGRAM ANALYSIS

### Description and Background

In February 2010, the Division of Medical Assistance (DMA) instituted the NCCCN Behavioral Health Integration Initiative (BHI) to support the integration of behavioral health services, including mental health and substance abuse, into Community Care of North Carolina (NCCCN) primary care practices across North Carolina. Per the contract, the BHI program is designed to identify and treat patients with behavioral health needs within the primary care practice (Appendix A, 1.15).

The program design and oversight resides at the Central Office, while each of the 14 networks hired at least one full-time Behavioral Health Coordinator and part-time psychiatrist to work in partnership with network pharmacists (many of whom have behavioral health training) and care managers in our system. While most NCCCN care managers are nurses, over the past year, more networks have begun to hire social workers and/or nurses with psychiatric experience. The ability to take the BHI program to scale and to inculcate it as part of the NCCCN practices is a unique opportunity facilitated by the NCCCN infrastructure.

In meeting the measure of the DMA contract, the BHI program is focused around several key areas:

1. Medical Home Capacity-Building: Provide education and support to NCCCN-enrolled primary care practices around implementing best primary care behavioral health (PCBH) practices including screening and early intervention to better identify and treat individuals with mild to moderate behavioral health (BH) needs in primary care and to provide quality medical home services to all enrollees, including those with mental health (MH) disorders and intellectual and developmental disabilities (IDD).
2. Care Management/Transitional Care: Improving the quality and consistency of care management for priority populations with behavioral health needs through education and support to NCCCN care managers and collaboration with the behavioral health specialty system – both LME/MCOs at the systems and population level, and Behavioral Health Providers at the patient and population level.
3. Project Lazarus/Chronic Pain: With significant support from grant funding through the Kate B. Reynolds Foundation and the Office of Rural Health, the BHI program oversees the Project Lazarus/Chronic Pain Initiative (CPI), aimed at reducing the rate of accidental opioid overdose deaths and increasing access to better pain assessment and support. Project efforts support NCCCN-enrolled Medicaid population.

Each of the following initiatives fall into the three focus areas above:

**SBIRT- Screening, Brief Intervention, Referral for Treatment:** NCCCN BHI team has, in conjunction with a state grant to the Division of MH/DD/SAS and in collaboration with PCPs and specialty BH providers, developed a SBIRT (screening, brief intervention, referral, and treatment) project, which attempts to systematically identify, treat and refer individuals who are at risk for tobacco, alcohol, or other drug use problems through primary care screening. In addition, NCCCN has created referral forms which allow for more efficient communication between PCPs and behavioral health specialists who serve as referral and treatment resources to primary care. Regarding the cost-benefit of SBIRT, analyses have shown a cost

savings of \$43,000 in future healthcare costs for every \$10,000 invested in early screening and brief counseling of risky alcohol use.<sup>84</sup>

**Adult Depression Toolkit:** NCCCN has also developed and promoted an Adult Depression Toolkit for primary care physicians (PCPs), which was designed to help PCPs access practical, evidence based tools, to help them successfully identify and treat Depression Disorders in the primary care practice. The toolkit was developed in 2013, and revised in 2015. This toolkit, based on the evidence-based IMPACT model of screening and treatment of depression in a primary care setting, focuses on early identification and treatment of depression—thereby reducing costs and preventing more expensive, lengthier treatment in the specialty BH system. Studies “find that interventions that provide training to primary care teams in how to manage depression most consistently produce net benefits.”<sup>85</sup>

**Adolescent Depression Toolkit:** The Adolescent Depression Toolkit was developed by a small workgroup comprised of NCCCN pediatricians, child & adolescent psychiatrists, and a behavioral health therapist. The toolkit focuses on co-management guidelines between the PCP, Child & Adolescent Psychiatrist, and Therapist after initial screening in the primary care setting.

Along with the revised Adult Depression Toolkit, the Adolescent Depression Toolkit will be disseminated concurrently through our local network quality improvement (QI) staff to family and pediatric practices in 2015.

**A+KIDS program (Antipsychotics – Keeping It Documented for Safety):** One of NCCCN’s best known BHI projects, the A+ KIDS program was created in response to the rise in antipsychotic use among U.S. children. This effort was co-founded by the NC Division of Medical Assistance (DMA) and NCCCN and is now managed by DMA. A+KIDS is a novel web-based quality and safety monitoring program that was initially launched in April of 2011 and included all NC Medicaid recipients under the age of 18 who had been prescribed an antipsychotic medication. The format of this program allows provider choice in the selection of an antipsychotic medication while encouraging appropriate monitoring of potential side effects. Clinical monitoring parameters and interactive educational features were developed for the A+KIDS registry with provider participation. By June 2013, a total of 1,650 providers participating in the program had submitted medication safety documentation in order to authorize antipsychotic prescriptions for 20,434 patients. Approximately 90% of all antipsychotic claims filed for NC Medicaid recipients under the age of 18 have been authorized through the web-based A+Kids registry. Further, the registry requires that appropriate clinical safety monitoring (body mass index, blood glucose/lipid checks, side effects and outcomes information) occurs and is documented in the registry. Since the registry launched in April 2011, there has been a documented 16% increase in the frequency of blood glucose screening and a 44% increase in lipid screening as of March 2013. This information illustrates that the A+KIDS registry was implemented with a relatively high rate of uptake and provider acceptance.

**Improving recipient engagement through Motivational Interviewing:** Starting in 2011, the BHI Team has spearheaded Motivational Interviewing (MI) training of all of our NCCCN care managers MI is a collaborative, person-centered form of talking to individuals to elicit and strengthen motivation for health

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<sup>84</sup> Fleming, M. F., Mundt, M. P., French, M. T., Manwell, L. B., Stauffacher, E. A., & Barry, K. L. (2002). Brief physician advice for problem alcohol drinkers: Long-term efficacy and benefit cost analysis. *Alcoholism: Clinical and Experimental Research*, 26(1), 36–43.

<sup>85</sup> Glied, S., Herzog K., Frank R. Review: the net benefits of depression management in primary care. *Med Care Res Rev*. 2010 Jun;67(3):251-74

behavior change. The MI model offers professionals tools to generate change and to support patients in informed decision making. Each network has identified MI Champions who serve as mentors for education and practice with the Network clinical and care management teams. MI is designed to support the patient in assuming an active role in their treatment with shared decision making and true investment in their health maintenance. More than 200 clinical trials of MI have been published, and efficacy reviews have begun yielding positive results for an array of target problems.<sup>86</sup>

**Mental Health First Aid:** In an effort to better support NCCCN care managers in working with individuals with behavioral health needs, NCCCN has partnered with the UNC Behavioral Health Resource Program to provide Mental Health First Aid training to care management staff. NCCCN has an in-house certified trainer and plans to incorporate Mental Health First Aid (MHFA) training into the New Hire Orientation for new staff across all networks. This supports the efforts of DHHS to expand MHFA across the state to all ages as a priority.

**Partnering with LME/MCOs:** LME-MCOs and NCCCN local networks have been involved in collaborations to create and maintain integrated care activities since 2009. Since that time, at the state and local levels, organization representatives have committed time and staff to support Medicaid consumer/patients. In addition to regular interdisciplinary meetings to discuss complex cases, a myriad of projects have been developed, to reflect the needs of consumers and the unique needs of the communities in which they live. LME-MCOs and NCCCN have also successfully entered into data agreements to ensure critical information is shared and available. Data is key in communication between primary and behavioral healthcare, both at the individual consumer level and at the population level. Collaborations around specific populations and initiatives include joint efforts around ED utilization, integrated health care teams with members from LME-MCOs and NCCCN networks, and foster care pediatric projects.

**Behavioral Health Provider Partnerships:** In Fall 2011, NCCCN and the Developmental Disabilities Facilities Association (DDFA) created the Artemis Project, a pilot project aimed at improving quality of care and health outcomes for Medicaid consumers with medical and behavioral health needs, while also reducing total cost of care. Artemis focuses on work with Behavioral Health (BH) Providers by providing them access to claims data through NCCCN's Provider Portal (for individual patient care) and specific reports on the patients they serve (for population management). In addition to data-sharing, the project has been geared towards improving collaboration between BH Providers, Primary Care Providers, and NCCCN network care managers. Two specific project foci have been: 1) BH providers assisting NCCCN care managers with transitional care efforts for ED super-utilizers with complex behavioral health and medical needs and 2) BH providers using NCCCN narcotic utilization reports to decrease medication misuse.

In Spring 2013, the Artemis Project expanded into a local community through a pilot initiative. Community Care Partners of Greater Mecklenburg (CCPGM) and MeckLink (the LME/MCO at the time) formed a workgroup that included four Artemis Project agencies with sites in Mecklenburg County and, in conjunction with the MCO, identified four additional behavioral health providers to join the local collaboration.

**Project Lazarus - Chronic Pain Initiative of NCCCN for Safer Opioid Prescribing:** NCCCN helped to create Project Lazarus, a statewide chronic pain initiative with NCCCN support through a \$2.6 million grant

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<sup>86</sup> Miller, W. R., & Rose, G. S. (2009). Toward a Theory of Motivational Interviewing. *The American Psychologist*, 64(6), 527–537. doi:10.1037/a0016830

received from Kate B. Reynolds Charitable Trust and the NC Office of Rural Health and Community Care. In 2012, there were 1,101 unintentional poisoning deaths in NC; most of which can be attributed to opioid overdoses. Unintentional poisoning deaths from opioid overdoses have been rapidly increasing over the past decade and are the third leading cause of injury related death in NC. Project Lazarus strives to reverse this trend through a broad partnership that includes NCCCN, the NC Hospital Association, local hospitals and emergency departments, local health departments, OEMS, OSFM, primary care doctors, faith based programs and law enforcement. Project Lazarus utilizes NCCCN's local network infrastructure to help support these community-based coalitions and promote safer opioid prescribing. Community-based coalitions aim to broaden awareness of the extent and seriousness of unintentional poisonings and chronic pain issues, and to support community involvement in prevention and early intervention. Project Lazarus promotes medical assessment and treatment of chronic pain and partners have provided 40 trainings across the state which promote safe prescribing of opioids. In addition to the trainings, Chronic Pain Toolkits have also been developed to guide decisions by treating providers in emergency departments (EDs), primary care offices and care management settings. Over 50 pharmacies in 21 counties now stock Naloxone kits. Program outcome goals will be measured through the University of North Carolina Injury Prevention Research Center and will include measuring mortality due to unintentional poisonings; inappropriate utilization of ED for pain management; use of the NC Controlled Substance Reporting System, and referral for treatment of substance use diagnoses.

## Structure

### Target Population

Based on SFY 2014 claims, 20% of Medicaid-eligibles have a diagnosed behavioral health condition. This number may be larger since many individuals with behavioral health disorders will go undiagnosed. Table 15 shows the distribution of beneficiaries with behavioral health diagnoses across the Medicaid enrollment statuses: Straight Medicaid, Carolina Access I (CA-I) and NCCCN-enrolled. The majority of beneficiaries with a diagnosed behavioral health condition are enrolled with NCCCN.

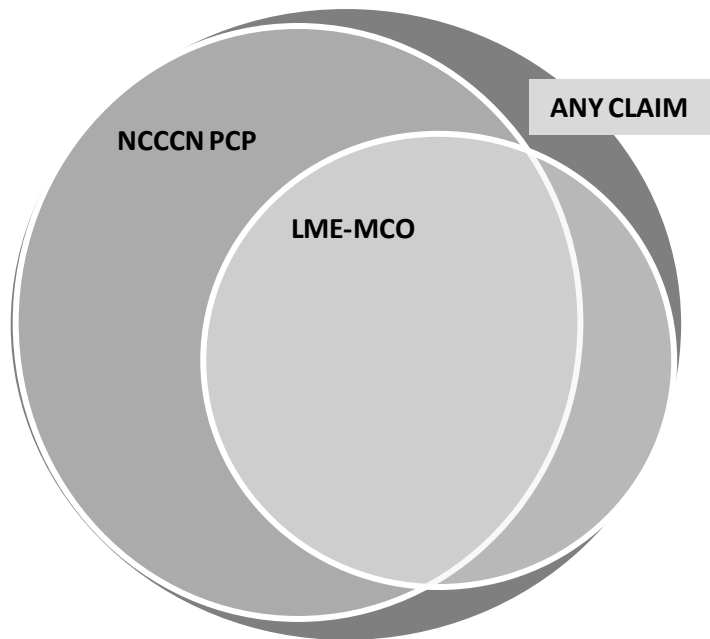
**Table 15: Distribution of NC Medicaid Beneficiaries with Behavioral Health Diagnosis based on Enrollment Status Compared to ABD Population.**

Medicaid / Health Choice Enrollment	Total # Eligibles (Statewide)	Any Behavioral Health Condition		Severe and Persistent Mental Illness (SPMI)		ABD (Excluding Any Behavioral Health)	
		#	% of Total Eligibles	#	% of Total Eligibles	#	% of Total Eligibles
STRAIGHT	336,293	59,859	<b>16.6%</b>	12,812	<b>21.2%</b>	45,822	<b>22.0%</b>
CA-I	48,587	13,336	<b>3.7%</b>	2,875	<b>4.8%</b>	10,424	<b>5.0%</b>
NCCCN-enrolled	1,401,515	288,373	<b>79.8%</b>	44,617	<b>74.0%</b>	152,029	<b>73.0%</b>
<b>TOTAL</b>	<b>1,786,395</b>	<b>361,568</b>		<b>60,304</b>		<b>208,275</b>	

Many individuals with mental health (MH) conditions, and even severe and persistent mental illness (SPMI), are treated exclusively in the primary care medical home, not in the specialty BH system. Also, the majority of individuals with MH and SPMI treated in the specialty behavioral health system are also seen for medical care in the primary care medical home. Figure 3 shows how the NCCCN PCP network and the LME-MCO specialty behavioral health system overlap in the treatment of Medicaid beneficiaries with diagnosed behavioral health conditions. NCCCN PCPs see 78% of the behavioral health population, whereas the LME-MCO population cares for 48%. Thirty-five% of the Medicaid population seeks care in both systems. Figure 4 displays this same information for only the Severe and Persistent Mental Illness (SPMI) population.

**Any Mental Health**

ANY CLAIM	<b>361,568</b>	<b>100%</b>
NCCCN PCP only	156,289	43%
LME-MCO only	46,162	13%
NCCCN PCP & LME-MCO	127,318	35%
Neither	31,799	9%

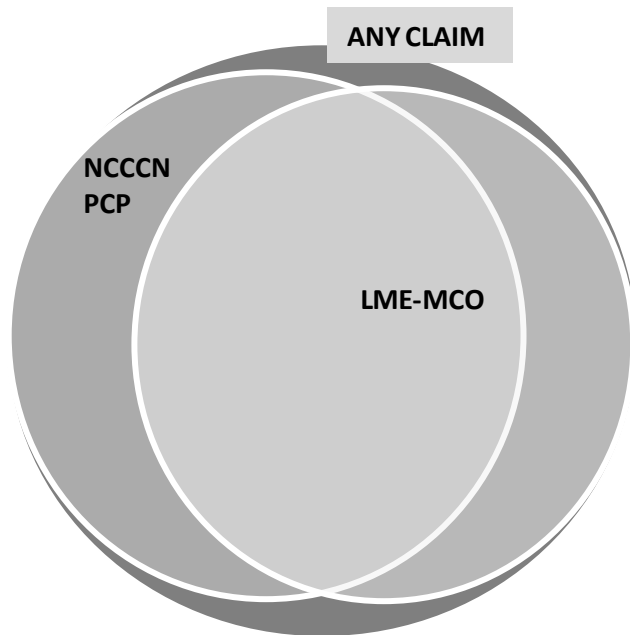


**Figure 3: Medicaid Treatment Patterns in Behavioral Health Population**



**Severe and Persistent Mental Illness (SPMI) Population Only**

ANY CLAIM	<b>60,304</b>	100%
NCCCN PCP only	12,460	21%
LME-MCO only	12,606	21%
NCCCN PCP & LME-MCO	31,472	52%
Neither	3,766	6%



**Figure 4: Medicaid Treatment Patterns in Severe and Persistent Mental Illness Population**

**Staffing**

Behavioral Health Integration accounts for 38 FTE across all of NCCCN, with over \$3.2M of funding for personnel.

**Central Office BHI Team Staffing:** The central office has three primary functions: clinical program facilitation, provision of shared informatics, and program standardization and support. The central office Behavioral Health Team, mirroring that of the networks, consists of a Psychiatrist Medical Director, a Behavioral Health Program Manager, a Program Analyst, and a board certified Behavior Health Pharmacist. The BHI team is also supported by the NCCCN Program Evaluation team, as well as the QI Practice Support program.

**Medical Director, Behavioral Health Integration – Psychiatrist:** The role of the Medical Director for Behavioral Health Integration is to serve as the primary lead for BHI projects and as a consultant and collaborator with the Community Care networks and other stakeholders. The Medical Director is the lead mental health champion to advocate for the implementation of evidence-based practices for integrated care in primary care settings across the NCCCN program.

**Behavioral Health Program Manager:** The Behavioral Health (BH) Program Manager works closely with network BH Teams (BH Coordinators and others as applicable) to shape NCCCN's BHI program into a unified behavioral health strategy, consistently share best practices across networks, and ensure that network BH teams are provided with standardized information and resources needed from Central Office (e.g. updated data and reporting information, updated pharmacy information, PCP and Care Manager training materials, etc.).

**Behavioral Health Pharmacist:** The Behavioral Health Pharmacy Coordinator has a leadership role for the direction and management of behavioral health pharmacy projects as well as creating and managing programs that address new policies as DMA implements them. This position serves as a resource to network psychiatrists, pharmacists, and care managers on psychiatric and general drug information, as well as Medicaid pharmacy policy issues related to behavioral health.

**Behavioral Health Program Analyst:** The Behavioral Health Program Analyst identifies BH standard data sets to be routinely collected and analyzed and serves as the NCCCN Informatics resource in the area of LME-MCO encounter claims and behavioral health medication claims. This position assists in the development, authorship, quality control, and distribution of behavioral health standard and ad hoc reports for behavioral health related projects at NCCCN.

**NCCCN Program Evaluation Support:** The Program Evaluation team at NCCCN assists the behavioral health team by developing and facilitating data review and analysis of priority populations in need of management. They evaluate and provide performance feedback on behavioral health improvement initiatives.

### Informatics Infrastructure

NCCCN imports all LME-MCO encounter claims into our informatics system. Therefore, NCCCN care managers and PCPs have access to patient-level behavioral health information including diagnosis and treatment and treating behavioral health provider. In addition, the encounter claim data is used in the creation of our priority population flags.

Individuals with mental health disorders are routinely flagged for care management interventions. In fact, of our highest yield priority patients, 55% have a mental illness and 21% have a severe and persistent mental illness (schizophrenia, schizoaffective disorder, or bipolar disorder). With confidential data sharing agreements in place, NCCCN provides population and patient-level reports to LME-MCO and behavioral health provider partners. These reports assist in targeting specific patients for integration of care.

## Performance Measurement

NCCCN BHI does not report separate Key Performance Indicators (KPI) to DMA. But, individuals with mental health disorders are captured in all of our KPI measures. Based on our QMAF results, NCCCN enrollees with MH conditions are receiving high quality care. Quality measure performance for diabetes (A1C control and blood pressure control) and hypertension (blood pressure control) are better than national HEDIS mean for the general Medicaid population enrolled in managed care.

## Return on Investment

Given the lessons-learned from the inception of the BHI program, as well as review of current health and spending data on Medicaid enrollees with mental health (MH) disorders and intellectual and development disabilities (I/DD), NCCCN's BHI program goals include:

- Accessible & responsive healthcare for people with MH & I/DD
- Improving healthcare outcomes for people with MH & I/DD
- Decreased healthcare costs for people with SPMI & I/DD
- Improved Treatment of MH & I/DD conditions in primary care
- Supporting NCCCN care managers in addressing the unique needs of Medicaid enrollees with I/DD

**NCCCN Medical Home Enrollment:** As noted above, 80% of NC Medicaid recipients with any mental health illness and 73% of NC Medicaid recipients with SPMI are enrolled in a NCCCN medical home. According to a 2015 NC-specific publication, enrollment in a primary care-based medical home was associated with increased use of primary and specialty care, better medication adherence, and reduced use of emergency department care by individuals with SPMI. Among patients with major depression, enrollment in a medical home was associated with increased use of certain preventive services, including cholesterol and cancer screening.<sup>87</sup>

*80% of NC Medicaid recipients with any mental health illness are enrolled in a NCCCN medical home.*

**Care Management/Transitional Care:** Approximately half of the patients actively care managed by NCCCN have a mental health disorder. In fact, patients with mental health disorders are *more likely* to be prioritized for care management than non-mental health patients. Evaluations provide strong evidence that NCCCN care managers have a positive impact on cost and utilization of patients with multiple chronic conditions, including patients coming out of a psychiatric hospitalization, patients with SPMI, and patients with severe and persistent mental illness already receiving high-intensity outpatient services like Assertive Community Treatment (ACT) in the specialty behavioral health system. NCCCN saw a 20% reduction in readmissions for patients with multiple chronic conditions, which includes behavioral health conditions.<sup>88</sup>

**Adult Depression Toolkit:** NCCCN's Adult Depression Toolkit is based on the IMPACT model of collaborative care for depression in primary care. The intervention uses teams of depression care managers, primary care doctors and psychiatrists to screen, treat, and track the course of depression. Studies have tracked the healthcare costs of individuals receiving this intervention over a 4-year period following the intervention. Costs for patients who received care under the IMPACT model, were an average of \$70 PMPM lower than costs for those receiving usual primary care. This represents savings of

<sup>87</sup> Domino, M., Wells, R., Morrissey, J., Serving Persons with Severe Mental Illness in Primary Care-Based Medical Homes. Psychiatr Serv. 2015 Feb 17

<sup>88</sup> Jackson et al. Transitional care cut hospital readmissions for North Carolina Medicaid patients with complex chronic conditions. Health Affairs. 2013 Aug;32(8):1407-15.

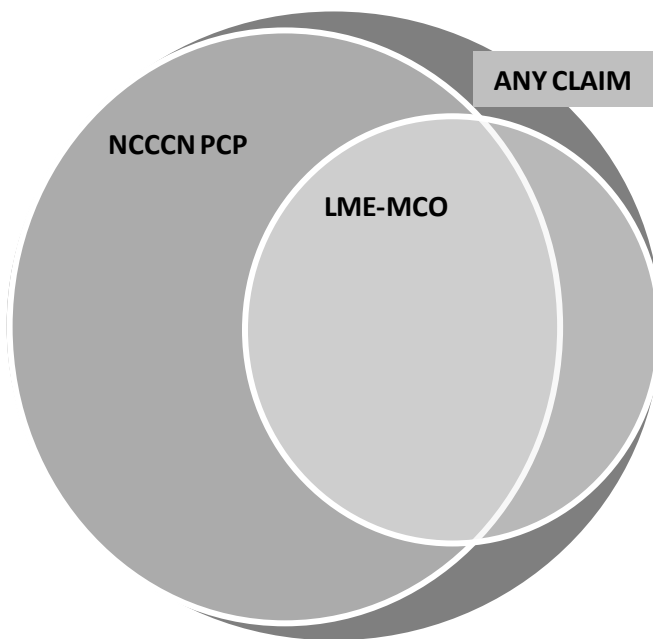
about 10% of total healthcare costs over a 4 year period. Results also indicated that patients in the collaborative care program were 87% more likely to have lower total healthcare costs than those receiving usual care.<sup>89</sup>

## Future Direction

As noted earlier, individuals with mental health disorders are three times more likely (than the average Medicaid recipient) to seek treatment from primary care doctors than in a specialty behavioral health provider. Individuals with intellectual and developmental disabilities are also seen more frequently in primary care than in the specialty LME-MCO system (Figure 5).

### Intellectual or Developmentally Disabled or Autism

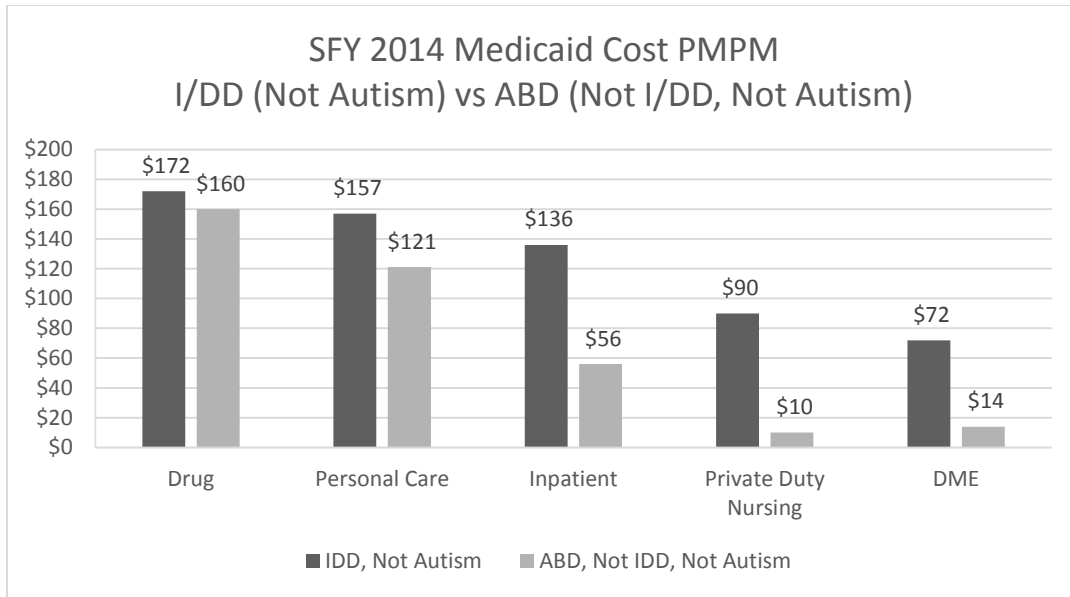
ANY CLAIM	<b>68,949</b>	<b>100%</b>
NCCCN PCP only	34,359	50%
LME-MCO only	8,393	12%
NCCCN PCP & LME-MCO	19,379	28%
Neither	6,818	10%



**Figure 5: Medicaid Treatment Patterns in I/DD and Autism Populations**

They also account for higher medical spending across multiple medical categories of service including: pharmacy, personal care services (PCS), inpatient hospitalization, private duty nursing, and durable medical equipment (DME), as shown in Figure 6 below.

<sup>89</sup> Unützer et al., Long-term Cost Effects of Collaborative Care for Late-life Depression. Am J Manag Care. 2008 Feb; 14(2): 95–100.



**Figure 6: Medicaid Cost Per Member Per Month – I/DD versus ABD populations.** Dollars represented are based on claims from SFY 2014.

**Program Priorities:**

1. Continue to build capacity for treating mental health conditions and I/DD in the primary care medical home
  - Continue to train primary care practices on mental health and IDD conditions and treatment
  - Identify and support NCCCN medical homes in each network who ‘specialize’ in the whole-person care of people with MH and I/DD
  - Develop referral partnerships between local primary care offices and preferred behavioral health practices
  - Work with DMA to recommend system changes that encourage and reimburse evidence based whole-person models of care
  - Expand use of the Depression Toolkit & IMPACT model of depression treatment in primary care
  - Expand use of SBIRT (screening, brief intervention, referral to treatment) in primary care
  - Expand pharmacy programs targeted at medication adherence and best practice prescribing for psychotropic medications (prescribed by any physician)
  - Increase our psychiatric consultation capacity and build a statewide consultation infrastructure
  
2. Further enhance care management that supports the unique needs of individuals with MH and I/DD
  - Continue to train care managers on mental health and IDD conditions and treatment
  - Address higher utilization of medical services (DME, pharmacy, PCS)
  - Provide medication reconciliation and develop other specialized pharmacy programs that promote best prescribing practices
  - Assist in the transition of individuals moving from the pediatric to adult medical homes

- Decrease preventable inpatient utilization in the I/DD population
- Strengthen Transitional Care Management of patients with MH and IDD moving from inpatient/ED/facility to community settings

**Behavioral Health Provider Partnerships:** In Spring 2013, the Artemis Project expanded into a local community through a pilot initiative. Community Care Partners of Greater Mecklenburg (CCPGM) and MeckLink (the LME/MCO at the time) formed a workgroup that included four Artemis Project agencies with sites in Mecklenburg County and, in conjunction with the MCO, identified four additional behavioral health providers to join the local collaboration.

The success of CCPGM's collaboration has led to the initiation of the Behavioral Health Provider Partners (BHPP) Project in six additional NCCCN networks. Each BHPP collaborative effort will consist of BH partners in the community, including BH Providers and LME-MCOs. Goals for these collaborations include:

- Strengthening BH provider, LME-MCO, and Primary Care collaboration to provide integrated whole person care
- Establishing and enhancing BH provider referral pathways to connect patients with local medical homes
- Projects to address quality and total cost of care for high-priority patient populations

## APPENDIX H: PEDIATRIC PROGRAM ANALYSIS

### Description and Background

Consistent with the contractor obligations in the master contract (2.2.1), the NCCCN Pediatric Program specifically implements quality improvement activities, including asthma and childhood obesity in connection with Health Check related activities. The Pediatric Program also coordinates and supports initiatives such as CC4C by ensuring that initiative goals and objectives are met (2.2.3).

In Appendix A of the Master Contract, the following are activities the Pediatric Program assists local networks in achieving:

- 1.11: Develop Network processes and performance measures, such as: creating an interdisciplinary team to help manage and optimize care (there is a pediatric team at every network as a result of the NCCCN Pediatric Program)
- 1.16: Implement and operate the State Health Check/EPSTD (Early, Periodic, Screening, Diagnosis, & Treatment) Program including the following activities: provide and coordinate health check services (the Pediatric Program has taken the Health Check program under its supervision and now produces an annual report to DMA of activities)
- 1.18: Develop and implement CC4C (Care Coordination for Children) to improve health outcomes, reduce overall cost of care, and achieve performance measures. The NCCCN Pediatric Program has trained CC4C care managers on evidenced-based practices, use of risk screening, and coordination of care to address those children at highest risk for toxic stress.
- 1.19: Implement population management, quality improvement, and cost containment initiatives. The Pediatric Program has trained QI staff in all of the networks on QI principles to apply within local practices using a population management approach.
- 1.23: Educate all NCCCN enrolled providers about NCCCN initiatives through orientation, training, and technical assistance. The Pediatric Program has conducted numerous statewide trainings to NCCCN providers on topics that include: Managing the Foster Care population, Using Motivational Interviewing with Children who are Overweight/Obese, Integrating Mental Health into Primary Care, ADHD Diagnosis and Management and linkages to schools, dental varnishing in 0-3 year olds.

The NCCCN Pediatric Program has several pillars that support three main clinical focus areas. These foundational pillars include:

- Population management, practice support, quality improvement, prevention, the medical home, and role of the electronic health record (EHR)
- From this foundational perspective, we have focused on the following areas with our local networks and primary care providers:
  - *EPSTD*: well visits, vision & hearing, BMI percentile coding, lead screening, oral health, immunizations, & routine developmental/behavioral screening at all ages.
  - *Mental Health Integration* (social/emotional/developmental): ADHD, maternal depression screening, adolescent depression screening, & social/emotional screenings (0-20 yrs.).
  - *Children and Youth with Special Health Care Needs*: Foster Care, Obesity, Asthma, Sickle Cell, & Language & Communication Delays

The key functions of the NCCCN Pediatric Program are geared to support the work of the local network staff and in effect, impact local delivery of care by primary care clinicians. The following are the key functions at the central office:

- Identify pediatric clinical priorities
- Stewards of Child Core Quality Measures: ongoing collaboration with DMA
- Pediatric Quality Improvement: train pediatric QI staff on both QI principles and clinical content. Assist that staff in prioritizing QI measures, engaging practices, and establishing a network pediatric team (Pediatric Champion, Pediatric QI, Health Check Coordinator, CC4C, ABCD Coordinator, behavioral health, etc.) to coordinate pediatric efforts across practices, development of 5 Maintenance Of Certification (MOC) Part 4 activities to support QI work in primary care (Maternal Depression, Adolescent Health, Oral Health, Foster Care, Obesity Prevention)
- EPSDT: NCCCN Pediatrics oversees the Health Check Coordinators (assist with clinical priorities, facilitate their work, monitor their annual reports) & collaborates with DMA on the Health Check billing guide as well as standards for preventive care
- Pediatric EHR: practice support, help practices work with their vendors to close the gap in pediatric quality and function, assist in practice connection to HIE (Health Information Exchange); statewide impact on vendor pediatric content and on HIE components for child health.
- Convene State Workgroups: engage state partners in the following areas (Sickle Cell, Foster Care, Oral Health, ABCD, and Pediatric Workgroup). Collaborate with NC Pediatric Society & NC Academy of Family Physicians to engage and support primary care practices that serve children.

*Much of the benefit of the Pediatric program to the State is longer term cost savings on preventive, behavioral health, and chronic disease care impacting the medical, educational, and juvenile justice systems.*

## Structure

### Target Population

Approximately 74% of the Medicaid population in North Carolina is under the age of 21 years, which amounts to 1,064,729 recipients. The Pediatric program specifically targets those recipients in early childhood, school-age, and adolescents (0-20 year olds).

### Staffing

Program Director, Program Manager, Pediatric EHR Lead Consultant, 4 regional EHR Coaches, 2 Data Analysts/Program Evaluators, 14 part-time QI Specialists (one at each network). The Pediatric staff across NCCCN are included in the 752.15 FTE for care management, with an additional 55.81 FTE for the Health Check Coordination program and oversight of the CC4C program.



Much of the funding for the Pediatric program is included in the \$52,848,166 that funds the care management program as a whole. Additional funding comes to support the Health Check program and CC4C. Beginning in 2010, the CHIPRA grant has funded all pediatric activity at the Central Office. A no-cost extension was approved until October 2015 which will fund the following positions:

- 25% of Program Director
- 20% of Program Manager
- 100% of EHR Lead Consultant
- 100% of 4 EHR Coaches
- 100% of 2 Data Analysts/Program Evaluators
- 10% of 14 QI Specialists

Beyond CHIPRA, the funding of the Central Office team will revert to NCCCN contract.

**Table 16: Staffing and Funding for NCCCN Network Care Management Programs (excluding PMH)**

	FTE	Funding
<b>Care Management</b>	752.15 (adult and pediatric included)	\$52,848,166
<b>Health Check</b>	52.65	\$2,321,642
<b>Care Coordination for Children (CC4C)</b>	3.16 (NCCCN)	\$486,626 (NCCCN)
	280.89 (Local Health Dept.)	\$16,925,074 (LHD)

#### Informatics Infrastructure

The NCCCN Pediatric Program has used the following IC infrastructure to enhance the work done at the network level:

- QMAF & EPSDT Profile
- Provider Portal (foster care flag)
- Integrated critical pediatric care processes into the IC (foster care passport, risk stratification, pediatric comprehensive health assessment, pediatric preventive care registry, sickle cell care plan)

#### Performance Measurement

- Key performance indicators related to the program:
  - ED visits may show a decrease as a result of the focused work in preventive care
  - KPI results for children are only a fraction of those for adults but the Pediatric Program can have an effect on the total cost PMPM because of our work with children in special populations.
- Quality measures:
  - See Appendix K for complete list of measures

## Return on Investment

In prevention work, the return on investment is in the long term benefits and those accrue not only to Medicaid but cross into other systems (education, juvenile justice, etc.). The following Pediatric Program priorities have significant ROI or population health benefit to the state:

1. Foster Care: The network pediatric teams have worked to establish medical homes for children in foster care. Those that are enrolled in NCCCN have \$519 PMPM lower costs compared with un-enrolled children in foster care.
2. Sickle Cell: Promoting use of hydroxyurea for children with Sickle Cell leads to improved disease control and decreased ED use and hospitalization rates. Providing care management to high risk adolescents and adults through NCCCN care management garners \$1,400 in savings over 6 months.<sup>90</sup>
3. EPSDT: Reduction in ED usage, improvement in immunization rates.<sup>91</sup>
4. Developmental and Behavioral/Social-Emotional/ Mental Health: The CC4C program focuses on identifying children with toxic stress or other risk factors for poor medical, educational, or legal outcomes. Early intervention with children with adverse childhood events leads to decreased long-term costs.
5. Mental Health Integration in Pediatric Primary Care: Behavioral health integration strategies have shown a strong ROI. A 2014 Milliman study estimated \$7.1 - \$9.9 billion savings to Medicaid nationally.<sup>92</sup>
6. Oral Health: 4+ varnishings by age 3 have been shown to significantly decrease caries and there is documented savings over 10 years in restorative dental care estimated at \$34 million.<sup>93</sup>
7. Pediatric EHR Development: Further developing pediatric EHRs in NC will lead to improved quality data reporting and opportunities for pediatric medical homes to improve population health outcomes.
8. Childhood Obesity: Decreasing rates of childhood obesity leads to lower adult morbidity related to diabetes, cardiovascular disease, and osteoarthritis. Childhood obesity programs have shown long term cost savings averaging \$41,500 per male recipient and \$30,600 per female recipient.<sup>94</sup>
9. Asthma: Promoting evidence-based asthma guidelines, promotion of shared decision making tools, use of care alerts, and care management interventions have all lead to a reduction in ED usage and hospitalization rates for children with asthma.<sup>95, 96</sup> 97.2% of NCCCN enrollees receiving appropriate medication management based on 2013 QMAF Chart Review results.

## Future Direction

The NCCCN Pediatric Program will continue to focus on the following areas in the next year:

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<sup>90</sup> Wang, et. al. Hydroxyurea is associated with lower costs of care of young children with sickle cell anemia. *Pediatrics* 2013 Oct; 132 (4): 677-83

<sup>91</sup> Coker et al. Does Well-Child Care Have a Future in Pediatrics? *Pediatrics* 2013; 131 (2):S149-S159

<sup>92</sup> Milliman. Economic Impact of Integrated Medical-Behavioral Healthcare. American Psychiatric Association. April 2014.

<sup>93</sup> [http://www.cdc.gov/pcd/issues/2012/11\\_0219.htm](http://www.cdc.gov/pcd/issues/2012/11_0219.htm)

<sup>94</sup> Brill, Alex, "Long-Term Returns of Obesity Prevention Policies," Matrix Global Advisors, for RWJ, 2013

<sup>95</sup> Ivanova, et al. Effect of asthma exacerbations on health care costs among asthmatic patients with moderate and severe persistent asthma. *J Allergy Clin Immunol.* 2012 May;129(5):1229-35

<sup>96</sup> Rust, et al. Potential Savings From Increasing Adherence to Inhaled Corticosteroid Therapy in Medicaid-Enrolled Children. *American Journal of Managed Care.* March 20, 2015

## Appendix H: Pediatric Program Analysis

- Maintain practice support and quality improvement coaching for pediatric quality improvement indicators
- Continue CQM reporting to CMS
- Establish Pediatric QI Specialist as part of network staff
- Incremental improvement in pediatric QMAF measures
- Increase in practices engaged with Pediatric EHR initiative and connection to HIE

The following are new initiatives the NCCCN Pediatric Program will also work to implement in the next year:

- Obesity Prevention (Early Childhood)-Maintenance of Certification part 4
- Foster Care-Maintenance of Certification part 4
- Sickle Cell-dissemination of sickle cell co-management guidelines to primary care providers and specialists. Enhance relationship between care managers and public health educator counselors
- Care Manager and CC4C training to address specific populations (foster care, adolescents with chronic conditions who are transitioning, & sickle cell)
- Closing gaps in pediatric EHR content for practices and vendors
- Implement quality reporting from Pediatric EHR project
- Expand pediatric practice connection to HIE
- Further integration of CC4C into the Pediatric Program planning/activities, as well as identifying appropriate indicators for performance and quality.
- Regular Health Check Coordination Leads meeting/conference for planning and quality improvement.

## Care Coordination for Children Program Overview

CC4C is a population management program for children birth to 5 years of age. The CC4C program is administered as a partnership between Community Care of North Carolina (NCCCN), the NC Division of Public Health (DPH) and the NC Division of Medical Assistance (DMA). As mentioned previously, CC4C employs 281 FTE care managers through the Local Health Departments (LHD). Don't we need to mention the CC4C Care Managers are through the local HDs?

The goals of the program are to provide care management services for the target population and to:

1. Identify and reduce barriers to care for identified children
2. Identify and link to community services for identified children
3. Encourage early identification and treatment of needs and medical conditions
4. Strengthen and empower the family to manage the child's care
5. Strengthen the relationship to the medical home
6. Improve quality of care & health outcomes for engaged children, and in so doing reduce costs.

### Target Population

- Children with special health care needs as defined by the Title V Maternal Child Health Block Grant:
  - Chronic physical, developmental, behavioral or emotional condition
  - Expected to last at least 12 months
  - Requires health & related services of a type & amount beyond that required by children
- Children exposed to toxic stress in early childhood, including but not limited to:
  - Extreme poverty in conjunction with continuous family chaos
  - Recurrent physical or emotional abuse
  - Chronic neglect
  - Severe and enduring maternal depression
  - Persistent parental substance abuse
  - Repeated exposure to violence in the community or within the family
- Children in the foster care system
- Children in the neonatal intensive care unit who need assistance as they transition back to the community and linkage to a medical home
- Children flagged as priority populations based on above-expected potentially preventable costs, or specific pediatric high risk populations.
- Children identified potentially high cost or in need of care management services identified on data provided through claim based reports and real time admission, discharge and transfer hospital data.

### Services

CC4C services are provided based on patient need and according to risk stratification guidelines. A comprehensive health assessment is completed to assist the care manager in identifying the child's needs, plan of care and frequency of contacts required to effectively meet desired outcomes. Patient-centered goals are developed based upon the needs of the child and in agreement with the family or caregiver. Contacts occur in multiple settings including the medical home, hospital, community, child's home, and by phone. All documentation for CC4C services is completed in NCCCN's case management information

system (CMIS.) CC4C care manager's work in close collaboration with NCCCN care managers and the medical home to meet the needs of the population.

The Life Skills Progression (LSP) assessment is used in children identified as having experienced toxic stress to help identify the needs of the family and measures a parent's life skills (the abilities, behaviors and attitudes) that help a family achieve a healthy and self-sufficient level of functioning. The tool assesses 35 dimensions that look at relationships/support systems; education and employment; health and medical care, mental health and substance use/abuse and access to basic essentials. The LSP also assesses the child's developmental progress.

#### Medical Home Relationship

Each medical home serving children birth to 5 years of age has a specific CC4C care manager(s) assigned to work with their clients. This stable relationship supports effective and complete communication between the medical home and CC4C care manager and builds upon the medical home/ patient relationship.

## APPENDIX I: NCCCN INFORMATICS CENTER OVERVIEW

To support the work that NC Community Care Networks, Inc. performs on behalf of the NC DHHS, the Informatics Center integrates data from the following sources: DMA paid claims, eligibility and enrollment data; real-time pharmacy fill history as from Surescripts and ESI; real-time hospital admission/discharge/transfer data from >50 NC hospitals; hospital discharge summaries from UNC Hospitals; laboratory results from LabCorps and Solstas labs; NC Immunization Registry (NCIR) and birth certificate records; electronic health record (EHR) data from a growing number of primary care practices; and information obtained directly from clients, health care providers, and care managers recorded in our care management applications.

Information is accessed by the NCCCN networks 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 applications include:

**Care Management Information System (CMIS)/Global Health Record:** CMIS is a patient-centric, electronic record of care management activities used by NCCCN care managers since 2001, with over 1,000 active users statewide. In addition to Medicaid and Health Choice recipient data, CMIS also contains enrollment, eligibility and case management services for HealthNet projects across the state, which are regional collaboratives for the care of the uninsured. Patients enrolled in Medicaid, Health Choice and HealthNet all reap the benefits of the continuity of care provided by CMIS, which maintains a health record and single care plan that stays with the patient as he or she moves from one area of the state to another, or across eligibility programs. CMIS contains standardized health assessment and screening tools, disease management and health coaching modules, and workflow management features; and now includes mobile applications with online/offline capabilities to improve care management efficiencies in home and community settings.

**PHARMACeHOME:** The Pharmacy Home Project was created to address the need for aggregating information on drug use and translating it to the network pharmacist, care manager and primary care provider in a manner best suited to their care delivery needs. The system provides a patient-level profile and medication history for point-of-care activities, as well as a population-based reports system to identify patients with medication-related issues that may benefit from specific care interventions by pharmacists, care managers or PCPs in the medical home. PHARMACeHOME reconciles drug use information from multiple sources--such as prescription fill history, hospital discharges summaries, the primary care electronic health record, and care management entries from medication reviews in the patient's home—to automate the process of efficiently and accurately identifying medication discrepancies, adherence issues, and potential drug therapy problems.

**Provider Portal:** NCCCN released Provider Portal in August 2010, which allows secure web-based query access to the health record of NC Medicaid recipients, by treating providers involved in NCCCN quality initiatives. The portal provides medical home and care team contact information, medication fill history and current medication regimen (with indication of adherence and therapy gaps); clinical care alerts for point-of-care decision support; and visit history including inpatient, ED, office visits, imaging, immunizations, labs, and DME supplies. Medical home providers have direct access to cost, utilization,

and quality, and care gap reporting for their patient population to assist with population management. The portal also provides access to a comprehensive resource of low-literacy patient education materials and multilingual medication counseling tools. Over 2,200 users of our Informatics Center Provider Portal access healthcare information for over 28,000 Medicaid recipients every month. Outside of NCCCN personnel, behavioral health providers and BH-MCOs represent 1/3 of our active users.

**Reports Site:** NCCCN distributes reports related to population management, care management, and quality/performance through a secure web portal and report distribution system, serving a variety of functions:

- **Population Needs Assessment: Identification of demographic, cost, utilization, and disease prevalence patterns by service area.** The NCCCN patient database is updated quarterly with over 80 data elements describing demographic characteristics, prevalence of chronic medical and mental health conditions, spending by category of service, and rates of hospital, ED, and other service use; for analysis at the patient-, practice-, county- or network-level. This aids in program planning and resource allocation; identification of outlier patterns, and tracking of local utilization patterns over time.
- **Risk Stratification and Identification of High-Opportunity Patients.** The size and complexity of the Medicaid population, in terms of physical health, mental health, and socioeconomic needs, necessitates intelligent mechanisms for identifying patients most appropriate for care management interventions, particularly in the face of limited resources. The use of historical claims data to screen patients who are most likely to benefit from care management intervention greatly improves the efficiency the care team. We have developed proven, innovative models for the flagging of priority patients for care management outreach, and for prioritization of transitional care support at the time of hospital discharge. Custom reports are also generated for to identify patients appropriate for specialized interventions. Examples include: chronic pain or opiate misuse; palliative care; foster care; behavioral health-related care gaps; high risk pregnancy; or inappropriate ED use for non-emergent conditions.
- **Monitoring of ED and Inpatient Visits.** A number of detailed utilization reports are updated weekly with every claims payment cycle, to enable users in practices and networks to readily examine hospital and ED utilization by their enrolled patients. In addition, real-time feeds from >50 NC hospitals provide current information about patients in the hospital setting. These reports are very flexible for answering a variety of questions (for example, to understand key drivers of ED utilization or hospital readmissions, or to examine patterns of patient traffic and care delivery across settings), and for identifying impactable patients in a timely fashion.
- **Program Evaluation and Tracking of Key Performance Indicators.** Performance on key cost and utilization indicators (total cost of care, admission rates, ED visit rates, and potentially preventable admissions) is tracked and reported on a risk-adjusted basis at the practice, county, network, and program level.
- **Tracking of Clinical Quality Indicators.** In addition to quality measures tracked in an annual chart review process for a random sample of NCCCN enrollees, we track a number of quality measures for the full population through quarterly analysis of claims data. Measures can be aggregated to the practice, county, network, or statewide level; and viewed with national benchmarks and trend information. Measures are related to diabetes, asthma, heart failure, cardiovascular disease,

pediatric well visits and dental care, behavioral health care, and breast, cervical, and colorectal cancer screening.

- **Clinical Data Applications: Registries and eQMs.** For practices who have adopted electronic health records and established connectivity to the NCCCN Informatics Center, we are able track real-time performance on a wide array standard clinical quality measures to support rapid-cycle clinical quality improvement initiatives and coordinated, proactive approaches to assure that patients with chronic conditions receive recommended services. Current disease registry capabilities include diabetes, hypertension, and asthma. Additional registries to support management of heart failure patients and preventive care for pediatric populations are soon to be released.



## APPENDIX J: NCCCN 2015 QUALITY MEASURES

Condition	Measure	Source
<b>Asthma</b>	Continued Care Visit with Assessment of Symptoms	Chart Review
	Assessment of Environmental Triggers	Chart Review
	Appropriate Pharmacological Therapy	Chart Review
	<i>Suboptimal Control (Beta Agonist Overuse) – under review</i>	Claims Review
	<i>Suboptimal Control and Absence of Controller Therapy – under review</i>	Claims Review
	Asthma Hospitalizations (per 1000 asthma member-months)	Claims Review
<b>Ischemic Vascular Disease</b>	Aspirin Use	Chart Review
	Smoking Status and Cessation Advice or Treatment	Chart Review
<b>Hypertension</b>	BP Control <140/90	Chart Review
	BP Control <150/90	Chart Review
<b>Diabetes</b>	A1c Testing	Chart Review
	A1c Control < 8.0% (Good)	Chart Review
	A1c Control > 9.0% (Poor)	Chart Review
	BP Control <140/90	Chart Review
	Foot Exam	Chart Review
	Smoking Status and Cessation Advice or Treatment	Chart Review
	A1c Testing	Claims Review
	Nephropathy Screening	Claims Review
	Use of ACE/ARB for Patients with DM and HTN	Claims Review
<b>Heart Failure</b>	LVF Documentation	Chart Review
	ACE Inhibitor/ARB Therapy	Chart Review
	Beta Blocker Therapy	Chart Review
	Left Ventricular Function (LVF) Assessment	Claims Review
	Heart Failure Admissions	Claims Review
	Heart Failure 30-day Readmissions	Claims Review
<b>Adult Preventive Services</b>	Breast Cancer Screening (Mammography)	Claims Review
	Cervical Cancer Screening (Pap Smear & HPV Testing)	Claims Review
	Colorectal Cancer Screening	Claims Review
<b>Pediatric Preventive Services</b>	Dental Topical Fluoride Varnishing	Claims Review
	Annual Dental Visit (ADV)	Claims Review
	EPSDT Visit (W15)	Claims Review
	Well-Child Visits in the First 15 Months of Life	
	EPSDT Visit (W34)	Claims Review
	Well-Child Visits in the Third, Fourth, Fifth and Sixth Years of Life	
	EPSDT Visit	Claims Review
	Well-Child Visits (Ages 7-11)	
	EPSDT Visit (AWC)	Claims Review
	Adolescent Well-Care Visits	

## Appendix J: NCCCN 2015 Quality Measures

	BMI	Claims Review
	ABCD/Developmental Screening	Claims Review
	MCHAT/Autism Screening	
	School Age Development and Behavioral Screening	Claims Review
	Adolescent Development and Behavioral Screening	Claims Review
	Vision Screening	Claims Review
	Hearing Screening	Claims Review
<b>Behavioral Health Measures</b>	Annual Glucose Screening in Children	Claims Review
	Receiving Antipsychotic Therapy	
	Annual Lipid Screening in Children	Claims Review
	Receiving Antipsychotic Therapy	
	Antidepressant Medication Management	Claims Review

## APPENDIX K: PEDIATRIC CLINICAL QUALITY MEASURES LIST

TYPE	North Carolina Pediatric Measures List	CMS (yearly) CARTS	CCNC - QMAF (Quarterly)	PEHR Measures	Data Source
	<b>Prenatal/Perinatal</b>				
CMS 1	Timeliness of prenatal care	x			Vital Records
CMS 2	Frequency of ongoing prenatal care	x			Vital Records
CMS 3	% of live births <2500g	x			Vital Records
CMS 4	Caesarean rate for low-risk first birth women	x			Vital Records
	<b>Immunizations</b>				
CMS 5	Childhood Immunizations	x	coming 2014		DMA/NCIR
CMS 6	Adolescent Immunizations	x	coming 2014	x	DMA/NCIR
	<b>Screening</b>				
CMS 7/QMAF	BMI - Weight assessment for children/adolescents	x	x	x	Claims
CMS 8	ABCD - Screening for potential delays in social and emotional development - ages 0-3	x			Claims
QMAF - EPSDT	NC ABCD - Developmental and behavioral screening at the WCV ages 0-5		x	x	Claims
QMAF-EPSDT	99240 - MCHAT, school age and adolescent screening rates (PSC & Bright Futures)		x	x	Claims
QMAF-EPSDT	Hearing Screen		x	x	Claims
QMAF-EPSDT	Vision Screen		x	x	Claims
CMS 9	Chlamydia screening for women	x			Claims
	<b>EPSDT - Well Child-Care Visits (WCV)</b>				
CMS 10/QMAF	EPSDT - WCVs in the first 15 months of life	x	x	x	Claims
CMS 11/QMAF	EPSDT - WCVs in the third, fourth, fifth and sixth years of life	x	x	x	Claims
QMAF	EPSDT - WCV for ages 7-11		x	x	Claims
CMS 12/QMAF	EPSDT - WCV for 12-21 yrs. of age—with PCP or OB-GYN	x	x	x	Claims
	<b>Dental and Dental Varnishing</b>				

Appendix K: Pediatric Clinical Quality Measures List

CMS 13	Total eligible receiving preventive dental services (EPSDT measure Line 12B)	x			416
CMS 17	Total EPSDT eligible who received dental treatment services (EPSDT CMS Form 416)	x			416
QMAF	Annual Dental Visit - Prevention and/or Treatment		x	x	Claims
QMAF	Patients with dental fluoride varnish claims in first 42 months of life (IMB-PORRT)		x	x	Claims
<b>Availability</b>					
CMS 14	Children and adolescents' access to primary care practitioners (PCP)	x			Claims
<b>Emergency Department</b>					
CMS 18/ QMAF	Emergency Department (ED) Utilization—Average number of ED visits / MM	x	x		Claims
<b>Asthma</b>					
QMAF	Continued care visit (Annual Chart review)		x	x	NCCCN-Chart
QMAF	Asthma Action Plan (Annual Chart review)		x	x	NCCCN-Chart
QMAF	Environmental triggers (Annual Chart review)		x	x	NCCCN-Chart
QMAF	Appropriate pharmacological Rx (Annual Chart review)		x	x	NCCCN-Chart
QMAF	Beta-agonist overuse (Claims Data - Quarterly)		x		Claims
QMAF	Absence of controller Rx (Claims Data -Quarterly)		x		Claims
QMAF	Asthma hospitalizations (Claims Data-Quarterly)		x		Claims
<b>ADHD</b>					
CMS 21	Follow-up care for children prescribed attention-deficit/hyperactivity disorder (ADHD) medication (Continuation and Maintenance Phase)	x			Claims
<b>Diabetes</b>					
QMAF	A1c control (poor) (Annual Chart Audit)		x		NCCCN-Chart
QMAF	Lipid management (poor) (Annual Chart Audit)		x		NCCCN-Chart
QMAF	Smoking status/cessation (>10 years old) (Annual Chart Audit)		x		NCCCN-Chart
QMAF	Eye exam in children > 10 year old (Claims Data - Quarterly)		x		Claims
QMAF	Nephropathy screening > 10 (Claims Data - Quarterly)		x		Claims
<b>Mental Health</b>					
CMS 23	Follow up after hospitalization for mental illness	x			Claims
QMAF	Annual glucose screening in children receiving antipsychotic therapy (age ≤ 18)		x		Claims

Appendix K: Pediatric Clinical Quality Measures List

QMAF	Annual lipid screening in children receiving antipsychotic therapy (age ≤ 18)		x		Claims
	<b>Family Experience of Care</b>				
CMS 24	HEDIS CAHPS@4 w/ supplements for children w/ chronic conditions and Medicaid	x			Claims
	<b>New Measures</b>				
CMS New 2013	Human Papillomavirus (HPV) for Female Adolescents	x	coming 2014	x	Claims
CMS New 2013	Medication Management for People with Asthma	x			
CMS New 2013	Behavioral Health Risk Assessment (for Pregnant Women)	x			PMH
MU and BF	Depression screening for all ages > 12		See QMAF EPSDT		Claims
MU and BF	Maternal Depression screening			x	No Claim Code