Two years ago, North Carolina received a cooperative grant from the Agency for Healthcare Research and Quality (AHRQ) to enhance support offered to primary care practices to improve quality of care. The Infrastructure for Maintaining Primary Care Transformation (IMPaCT) grant enabled North Carolina to provide technical assistance to other states about its existing system of primary care support infrastructure, and to build on the current system by pursuing two new initiatives. One focused on strengthening regional leadership, and a second aimed to improve transitions between inpatient and outpatient care settings. This brief summarizes key strategies, results, and lessons from the two new initiatives that North Carolina pursued through the IMPaCT opportunity.
Section 5405 of the Patient Protection and Affordable Care Act (ACA) authorized the establishment of a Primary Care Extension Program (PCEP) to enhance the quality of primary care services. PCEPs are based on the Agricultural Extension Service model. They focus on the implementation of new research findings in areas such as prevention, chronic disease management, and evidence-based treatment by primary care practices through peer-driven provider education. There is no universally accepted description of a PCEP.

In the ACA model of PCEP, health extension agents or community-based workers assist primary care practices in implementing quality improvement (QI) and practice change. Additionally, state hubs of state agencies, health profession schools, and others coordinate with local entities to assist primary care providers in implementing the patient-centered medical home (PCMH), achieving evidence-based improvement and peer sharing through learning communities.

In 2011, AHRQ launched the Infrastructure for Maintaining Primary Care Transformation (IMPaCT) initiative. This pilot PCEP has assisted states in strengthening, expanding, evaluating, and sharing primary care practice support efforts. The focus is transforming primary care practices and developing sustainable infrastructure for QI in primary care practices. AHRQ awarded IMPaCT grants to North Carolina, New Mexico, Oklahoma, and Pennsylvania with the understanding that models tested by these states could serve as an example for a national primary care extension service. As part of their IMPaCT awards, these four states have been responsible for disseminating their PCEP models to other states. IMPaCT has been a way to gain clarity around the PCEP concept. This brief focuses on the PCEP model in North Carolina.

**Partnering for Primary Care Extension in North Carolina**

North Carolina has created a nationally recognized program of primary care redesign and ongoing improvement that serves as a model of aligned state-level, multi-sector practice support. The state has harmonized a series of highly interconnected initiatives and built them into an infrastructure of existing statewide institutions. Collaborators across the state have learned that the sum is greater than the parts and forged ways to work together across institutional boundaries. North Carolina’s approach relies on shared aims, trust, and compromise. This approach continues to demonstrate better health outcomes, lower cost, and a new way of organizing and improving health care in a state. This section briefly describes key organizational partners in North Carolina’s system:

- **North Carolina Healthcare Quality Alliance (NCHQA):** NCHQA is a collaboration of the state’s physicians, hospitals, insurers, and other stakeholders working toward the goal of improved quality of care for all patients, regardless of payer. Initially established by the Governor’s Office in 2008, NCHQA now operates as an independent non-profit organization. It aims to provide unified leadership of providers, payers, and consumers to improve health and health care for all North Carolinians.

- **Community Care of North Carolina (CCNC):** In 1998, the State Office of Rural Health developed the CCNC program, which established and spread the idea of a medical home for patients enrolled in Medicaid. Since that time, Medicaid has provided practices, and regional networks of practices and hospitals with per member per month (PMPM) payments to serve as medical homes and improve the quality of care provided to this vulnerable population. CCNC has spread across the entire state and now has 14 distinct independent provider networks. The program has achieved Healthcare Effectiveness and Data Set scores for diabetes, asthma, and heart disease in the top ten percent nationally, while saving the Medicaid program more than $1 billion since 2003. Currently, CCNC is expanding services beyond Medicaid enrollees. The state received a Section 646 waiver that expanded...
CCNC’s reach to include dually eligible (Medicare and Medicaid) beneficiaries, thereby covering Medicare patients in 26 counties. The state was also awarded a Multi-Payer Advanced Primary Care Practice demonstration project from the Centers for Medicare and Medicaid Services. Under this demonstration, certain CCNC networks coordinate the care and improvement for patients covered by Medicaid, Medicare, Blue Cross Blue Shield of North Carolina, and State Health Plan (which together represent about 80 percent of covered lives).

- **North Carolina Area Health Education Centers Program (NC AHEC)**: The NC AHEC, established in 1972, is the largest regional health professions network of its kind in the country. It has become a full partner in assisting practice transformation efforts. Modeled after the agricultural extension concept, it works in association with the state’s four academic medical centers, universities, and community colleges to establish community-based training programs for health professions students and medical residents. Over the past 12 years, the NC AHEC has enhanced and emphasized education programs focused on performance improvement activities over traditional continuing education. This activity has included facilitating several large-scale improvement programs and training clinicians and practice coaches. It now also includes a large-scale practice coaching and improvement network program that is part of the overall strategy for statewide practice support. The NC AHEC became the operations arm of the North Carolina Improving Performance in Practice (IPIP) program, which provides collaborative learning opportunities combined with on-site practice coaching to assist practices that desire intensive transformation. The NC AHEC was also selected by the Office of the National Coordinator for Health Information Technology as the Regional Extension Center (REC) for the state, to assist primary care practices in implementing electronic health records. These efforts are all coordinated with CCNC networks and have led to an extremely effective structure for supporting primary care practices.
IMPaCT in North Carolina: Leadership and Learning

To further build upon North Carolina’s primary care support and extension infrastructure, a team of leaders from the aforementioned partner organizations, as well as provider champions and trailblazers with experience in quality improvement initiatives, pursued IMPaCT. Through this grant opportunity, North Carolina launched two learning collaboratives—the Regional Leadership Collaborative and the Care Transitions Learning Collaborative—to accelerate local-level process improvements and quality improvement in clinical performance measures.

The Regional Leadership Collaborative focused on developing leadership and quality improvement skills among regional teams, while the Care Transitions Learning Collaborative concentrated on integrating care transitions into primary care practices’ roles as part of the PCMH. Regional leadership development and care transitions from the hospital to medical home are timely, critical issues. They accelerate improvements in quality of care, and care outcomes.

The following sections describe both Collaboratives, share observations, and summarize lessons learned from IMPaCT.

Regional Leadership Collaborative

Through IMPaCT, North Carolina created a 17-month Regional Leadership Collaborative (RLC) to increase primary care practice capacity to implement and sustain primary care quality improvement initiatives through skill building and relationship building. North Carolina sees effective regional leadership as a critical component and key driver of regional quality improvement as it allows more local innovation and ownership of the statewide improvement program. Leadership at this level helps to spread the adoption of innovative models of primary care, such as the PCMH.

Research indicates that improvement depends upon leaders who share a vision and facilitate collaboration between organizations. Successful leaders have technical knowledge (e.g., about the elements of large system change processes and quality improvement), as well as the ability to build consensus and inspire staff and providers. The RLC focused on helping regional teams develop skills to: 1) lead successful quality improvement initiatives, and 2) increase coordination and collaboration between local CCNC networks and AHECs working toward shared objectives.

Thirteen regional teams made up of three to five clinical and quality improvement leaders participated in the RLC. The teams specifically included CCNC and NC AHEC personnel to ensure representation of clinical and QI expertise, as well as network leadership. Teams included: a) a local AHEC QI consultant who provided local practices with onsite facilitation and expertise on topics such as the PCMH; b) physician champions–typically a CCNC medical director; and c) where possible, academic health system champions to provide broader community and educational perspectives. Some teams included other medical leaders or CCNC QI directors.

North Carolina IMPaCT Faculty structured the RLC around monthly webinars and three face-to-face meetings. Webinars and meetings provided expert instructional content on QI methodology, team reporting, and project-specific consulting. Face-to-face meetings also provided time for teams to work together on guided activities. Teams also had access to a dedicated website to access meeting materials, webinar recordings, participating teams’ documents, and other project information.

To build team member knowledge and assist them in executing changes, monthly webinars and training focused on topics such as:

- Developing quality improvement and measurement design skills;
- Using performance data to manage systems of care...
and improvement;
- Planning and coordinating regional initiatives;
- Developing a common language and future vision;
- Understanding project management concepts;
- Creating and sustaining productive working relationships; and
- Using key drivers, small-scale testing, quality key indicators, and other QI tools.

Each team focused on a topic of regional priority and interest. Topics included:
- Cholesterol control in patients with ischemic vascular disease;
- Pre-visit planning for high-risk patients;
- Safe opioid prescribing in the emergency department;
- Self-management classes for patients with hypertension;
- Pain management and improved patient-reported quality of life for those with chronic pain;
- Improved care for diabetes patients; and
- Clinical decision support.

The range of topics addressed by participating teams demonstrates the versatility and applicability of the RLC. North Carolina IMPaCT faculty developed the RLC with the belief that it would be attractive to other states interested in spreading practice improvement through regional entities or hubs.

RESULTS

Anecdotal evidence from Regional Learning Collaborative participants suggests that teams strengthened their QI and leadership skills, and in many cases, improved collaboration among local CCNC and AHEC staff. In addition to skill-building and relationship-building, teams successfully educated providers and patients, implemented new practice processes or tools, and in some cases improved outcomes.

- Participating practices reported improved provider skills and awareness. Teams educated practices about options for pre-visit planning; raised provider awareness of patient circumstances leading to emergency department utilization; improved their ability to use run charts; and increased provider knowledge and skills for chronic pain treatment.
- Teams improved stakeholder collaboration. Teams engaged new practices, strengthened relationships between local CCNCs and AHECs, and made other new connections through the project. One team developed a new hospital readmission task force.

Care Alerts to Manage Diabetic Patients:
Spotlight on Community Care of Wake/Johnson Counties

Community Care of Wake/Johnston Counties partnered with Northern Piedmont Community Care - Community Care Partners, and Wake Area Health Education Center under IMPaCT for the Alert for Better Care in Diabetes (ABCD) initiative. This project focused on utilizing care alerts to identify diabetic patients overdue for elements of care. As a result of their work, they were able to help practices develop processes and utilize health information technology to manage their diabetic populations. Furthermore, ABCD has provided a structure for conducting Plan-Do-Study-Act rapid change cycles and measuring outcomes that can be applied to other projects. The team already has translated valuable lessons from ABCD, such as the importance of developing a QI team, assessing practices, using data, and creating driver diagrams, and applied them to a new project that seeks to decrease emergency room utilization for Medicaid high-ED (emergency department) utilizers.
Leaders helped practices **implement new processes.** One team implemented pre-visit planning in some electronic health record systems. They also mapped out a workflow to standardize pre-visit planning in all locations of a multi-site practice. A second team standardized policies and procedures for managing patients with adherence challenges, thereby establishing a framework for replication elsewhere. A third team implemented a chronic pain prescribing policy across emergency departments, along with new communication pathways to improve care coordination. Other teams established processes for analyzing data.

Practices **developed new tools and increased use of existing tools.** One team developed a step-by-step guide for intervening with patients with adherence issues; this guide outlines how to capture data about reasons for medication non-adherence and interventions implemented to address non-adherence. This team plans to link the data to patients’ overall service utilization and costs in order to evaluate outcomes. A second team increased use of a controlled substances reporting system. Other teams: 1) created a practice assessment tool to identify new practices’ interest in improving pre-planin care; 2) developed a table outlining how to use the Medicaid (CCNC) provider portal for pre-planin to help practices meet PCMH requirements; 3) increased practice use of a provider portal as a patient management tool; 4) implemented a new Living Healthy course for providers; and 5) created a transitional patient assessment tool.

**Teams improved outcomes.** One team reduced non-emergent emergency department utilization among its target population. A second team successfully moved patients into care and met patient care plans. A third improved post-discharge care as evidenced by a 40% increase in the number of patients seen within seven days of hospital discharge. This was a 30% increase in post-discharge face-to-face encounters, and a 14% decrease in the number of patients refusing services.

To support other practices in achieving similar results through this kind of a learning process, North Carolina developed a **Regional Leadership Collaborative Curriculum.** In addition to describing the RLC goals and genesis, this curriculum provides sample forms, team guidelines, event agendas, and assignments for modification and replication.

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**Hospitals As Partners: Spotlight on the Carolina Community Health Partnership**

The Carolina Community Health Partnership team, which included the Charlotte AHEC, focused on improving the transition process when a patient is discharged from the hospital by ensuring that an accurate medication list is created at the patient’s initial follow-up visit with the primary care provider. A key lesson learned from this IMPaCT project was the importance of working with hospitals and practices as equal partners to achieve desired outcomes. This project demonstrated that no single entity can be held solely responsible for maintaining an accurate medication list. Full collaboration between all involved parties is necessary to achieve common goals. One of the biggest accomplishments of this initiative was a strengthened relationship between the hospital, practice, and network that led to an increased ability to identify high-risk patients and improve care. With coaching and access to consultants and experts, team members developed QI skills, including learning how to identify key players, develop run charts, and analyze and present data.
Care Transitions Learning Collaborative

North Carolina’s IMPaCT Project also featured a Care Transitions Learning Collaborative. The primary objective of this initiative was to decrease avoidable hospital readmissions by improving patient care during the transition period from hospital to primary care practice. As it is estimated that the United States spends over $10 billion each year on potentially avoidable 30-day hospital readmissions, there are obvious financial benefits of improving the care transition process. However, there are also significant benefits for the patient. A successful and efficient care transition puts the patient in contact with his or her primary care provider soon after hospital discharge. This helps the patient better understand his or her treatment plan and avoid possible complications.

Most attention on improving care transitions has been focused on the hospital. With this IMPaCT initiative, North Carolina focused on the primary care practice side of care transitions. Through the Care Transitions Learning Collaborative, practices learned how to improve patient care following hospital discharge and documented their findings, which have been compiled into a guide for other practices seeking to improve their care transitions processes.

Nine primary care practices from North Carolina participated in this 17-month Learning Collaborative. IMPaCT faculty recruited practices that had an existing partnership between the local AHEC and Community Care center, and a likely capacity to improve clinical quality. Recruited practices also demonstrated the need for this type of initiative by showing 10 or more hospital readmissions within 30 days of discharge among patients enrolled in CCNC between July 2010 and June 2011. Each practice established a Care Transitions Improvement Team comprised of at least one physician champion and nurse, with the option to also include an office manager, scheduler, and patient or family member.

Through the Care Transitions Learning Collaborative, the Improvement Teams participated in the following activities from April 2012 to August 2013: 1) consultation and coaching from North Carolina IMPaCT faculty, NC AHEC, and CCNC; 2) monthly webinars to share updates with other teams; 3) conference calls; and 4) monthly progress reports. Monthly webinars were provided to participating practices along with quality improvement coaches (from NC AHEC or CCNC). The webinars were used as a learning platform where practices could share updates and receive further guidance. Because of the difficulty of getting the practice teams available to join the webinars, most of the content from the webinars was delivered to practices through their QI consultants (who were consistently on the webinars). Practices submitted monthly reports (often drafted and presented by their coaches) on their progress.

The project targeted four specific areas of improvement in the outpatient environment. First, practices aimed to increase timely access to care following hospitalization through scheduling processes and provision of after-hours care. Second, practices worked on better preparation for post-discharge visits by utilizing staff checklists and planning to address disease specific issues. Third, they focused attention on conducting thorough post-discharge visits that educated patients about their medications, warning signs, and disease management. Finally, practices were charged with communicating and coordinating an ongoing care plan that included office contact protocols and care management procedures.

As part of this Learning Collaborative, practices tested and helped develop a care transitions change package based on the Institute for Healthcare Improvement’s How-to Guide: Improving Transitions from the Hospital to Post-Acute Care Settings to Reduce Avoidable Rehospitalizations. The resulting Primary Care Transitions Change Package provides clear changes a primary care practice can undertake with specific instructions on how to adapt them to its practice. It covers how to:
North Carolina’s IMPaCT Initiative: Enhancing Primary Care Practice Support

**Results**

Practices have identified a variety of accomplishments and benefits from participation in the Care Transitions Learning Collaborative.

- Practices successfully implemented new processes to support care transitions. For example, participants developed or evaluated and streamlined practice workflows; added new providers to follow-up visits; triaged urgent calls in new ways; used data to track performance and trends in new ways; adopted new pre-visit planning strategies; and put in place policies to expedite the scheduling of post emergency department or hospital discharged patient visits.

- Teams put in place practice tools or maximized their use. Examples include: adding checklists to the electronic health record for hospital follow-up visits; developing an after-hours educational resources card; implementing follow-up checklists; updating community resources; and increasing use of the CCNC portal to monitor emergency department and hospital admissions in real-time.

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**Developing New Tools for Practice Workflow: Spotlight on SEAHEC and CCLCF**

The South East Area Health Education Center (SEAHEC) and Community Care of the Lower Cape Fear (CCLCF) partnered for IMPaCT. Through the Care Transitions Learning Collaborative the team learned about national benchmarks and existing best practices in the outpatient setting to improve care in inpatient settings. The team focused on establishing workflows for post-discharge planning and needed post-discharge summaries to establish the processes. The timing of a pilot of the region’s Coastal Connect Health Information Exchange contributed to the team’s success by creating an interface with the hospital that pushed patient reports out to practices. As part of the Regional Leadership Collaborative, the partners sought to further strengthen their established relationship. The patient-centered medical home is a common initiative for both organizations, so they worked together with providers to create tools for pre-visit planning for patients with chronic diseases and protocols for communication. The team established a shared website with project information and posted newly developed tools; including standing order templates, sample standing orders, and patient self-management tools for diabetes and tobacco cessation. As a result of coaching and other opportunities provided through participation in the project, the partners have implemented a new approach to joint meetings (e.g., providing one-minute updates on practices in common), and leaders are confident that change will be lasting and that the work with practices to support improvement will continue.
• Providers and staff learned new skills, with multiple practices engaging front desk, resident, or registration staff in education about concepts (e.g., follow-up visit components, Medicare transitional care management visit codes), or training about new processes or tools, such as a web portal to identify and track patients.

• Practices improved collaboration by successfully engaging hospitals and implementing workflows across departments.

• Finally, several practices improved care transitions, as indicated by an increase in the number of patients for whom the first outpatient follow-up visit occurred within seven days of hospital discharge.

**IMPaCT Lessons Learned**

The two Collaboratives conducted through North Carolina’s IMPaCT initiative have resulted in lessons that can inform similar efforts in other states.

• Having two concurrent learning collaboratives was confusing at times for participants who were involved in both. However, this enhanced the opportunity for collaboration between local AHEC and CCNC partners, and reinforced the importance of these relationships.

• Allowing regional teams to select their topic of focus made it more difficult to compare projects and focus technical assistance. An alternative strategy would be to require teams to select a topic from a short, defined list rather than leaving it open-ended. The goals of the collaborative may dictate the strategy.

• The Care Transitions Learning Collaborative benefited greatly from the use of practice coaches. These coaches served as the primary link between the faculty and the practices. NC AHEC and CCNC coaches provided vital assistance, particularly to practices that had fewer resources from which to draw.

• Anticipate data collection challenges with small samples sizes. Practices in the Care Transitions Learning Collaborative had small sample sizes, making it difficult to generalize their results. Most practices only had access to data for Medicaid patients, a subset of their full patient population.

• Using a mix of outcome and process measures allows for quicker assessment of effect. Seeing change in outcome measures takes longer than the duration of the collaborative. Process measures, however, can show results much sooner.

• Qualitative information is important for evaluating impact. Many of the achievements from the two Collaboratives were anecdotal insights about accomplishments, such as improved communication and reduction of duplicative efforts. These reflections occurred during team calls and meetings. Participant feedback demonstrated that the Collaboratives successfully increased provider and stakeholder knowledge about implementing change, and improved their QI and leadership skills.

• Learning collaboratives are a successful first step for engaging participants who ideally will continue to transform their practices and regions by spreading changes, replicating processes, and engaging partners. Teams and practices shared concrete examples of how they will apply lessons learned from the Collaboratives to other QI efforts.
### Conclusion

Through the IMPaCT grant opportunity, North Carolina built on the state's primary care extension and practice support system by administering the Regional Leadership Collaborative and Care Transitions Learning Collaborative. These IMPaCT Collaboratives collectively engaged 13 teams of regional leaders and health care providers from nine practices to strengthen regional leadership and QI capacity, and improve transitions between the hospital and medical home. Teams successfully implemented new processes; maximized use of practice tools; gained new skills; strengthened collaboration and relationships; and in some cases, improved outcomes related to post-discharge follow-up and non-emergent hospital utilization. With primary care practice support, regional leadership hubs, and care transitions all of keen national interest, North Carolina’s IMPaCT initiative materials—the *Primary Care Transitions Change Package*, and the *Regional Leadership Collaborative Curriculum*—provide helpful, detailed guidance on how to transform primary care practices.

### Endnotes


4. NASHP partnered with the University of North Carolina to administer the North Carolina IMPaCT Learning Community, through which Idaho, Maryland, Montana and West Virginia received technical assistance regarding adopting elements of North Carolina’s primary care extension model.


About the National Academy for State Health Policy:
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Acknowledgments
The authors acknowledge the North Carolina IMPaCT learning collaborative team members and faculty, whose dedicated efforts and experiences were the basis for this brief; Sonali Batish, Debbie Clapper, and Tara Robinson graciously shared reflections on behalf of their teams to inform the text boxes. NASHP’s Felicia Heider, Jill Rosenthal, and Larry Hinkle provided critical input and assistance. This brief was made possible by a grant from the Agency for Healthcare Research and Quality.

Citation:


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