CONSTELLATION REGIONAL LEARNING COLLABORATIVE

IMPACT REPORT

Constellation Quality Health

Authors: Erika Yourkiewicz, Sylvia Coleman, Maxine Arena, Benita Arokiaraj, Sydnie Fleming, Agner Munoz Vazquez and Samantha Murdaugh

SUMMARY

North Carolina (NC) lies within the "Stroke Belt" of the Southeast U.S., a region with some of the nation's highest prevalence rates of cardiovascular disease. While stroke is the fifth leading cause of death nationally, it ranks third in New Hanover County, NC.

As part of the **Constellation Quality Health Constellation Regional Learning Collaborative**, a five-year CDC-funded initiative focused on improving cardiovascular health outcomes across the Southeast, **Novant Health New Hanover Regional Medical Center (NHNHRMC)** launched a community-centered initiative to strengthen blood pressure management, expand stroke education, and connect patients with local resources. By integrating home monitoring, community paramedicine, and community-clinical partnerships, this project improved outreach, empowered patients, and created pathways for long-term systems change.

This initiative prioritized equitable access by focusing on rural communities, reducing transportation barriers, and delivering culturally responsive education through trusted community partners.

THE CHALLENGE

NHNHRMC serves as the tertiary care center for a nine-county region in Southeastern North Carolina, supported by 15 referral hospitals, 20 EMS agencies, and eight critical care transport teams. In 2024, the hospital treated more than 1,300 patients for stroke or transient ischemic attack (TIA). Of these cases, 71% were ischemic strokes, 16% intracerebral hemorrhage, 4% subarachnoid hemorrhage, and 9% TIA. Patients were predominantly older adults, with 53% ages 66–85, 30% ages 46–65, and 11% over age 85. The majority were Medicare beneficiaries (68%), and gender distribution was nearly equal.

Persistent barriers to prevention and care in this region include:

- Limited access to blood pressure monitoring devices
- Transportation challenges, particularly beyond a 40-mile radius of Wilmington, NC
- Lack of health literacy and culturally tailored education
- Unmet social needs influencing health outcomes

THE INTERVENTION

The NHNHRMC team designed and implemented a PDSA cycle (Plan-Do-Study-Act) to improve blood pressure management and stroke education among adults ages 18 and older diagnosed with hypertension, with a focused emphasis on rural communities where access to care and health literacy barriers are most significant.

KEY STRATIGIES

Community Engagement
Hosting community events that provided blood pressure, blood sugar, and cholesterol screenings paired with individualized counseling.

Health Literacy Support
Expanding education through home monitoring of vital statistics and patient-centered counseling.

Community-Clinical Linkages
Building strong relationships between patients and Community Paramedics (CPs) and Community Health Workers (CHWs) to provide follow-up support within a 40-mile radius.

INTERDISCPLINARY TEAM

James McKinney
Vascular Neurologist and Medical Director

Alyson Heller
Physician Assistant

Susanne Fahnemann
Community Paramedic

Carolina McCalmon
Physician Assistant

Erika Yourkiewicz
Post-Acute Care Coordinator for Stroke

Rosa Haywood
Inpatient Pharmacist

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PDSA CYCLE 1: HOME MONITORING AND PATIENT ENGAGEMENT

Change Idea Tested

Bluetooth-enabled home blood pressure monitors were provided to eligible patients who lived in safe home environments and demonstrated the ability to manage the equipment. CPs conducted follow-up visits and education, while CHWs addressed social drivers of health and support needs.

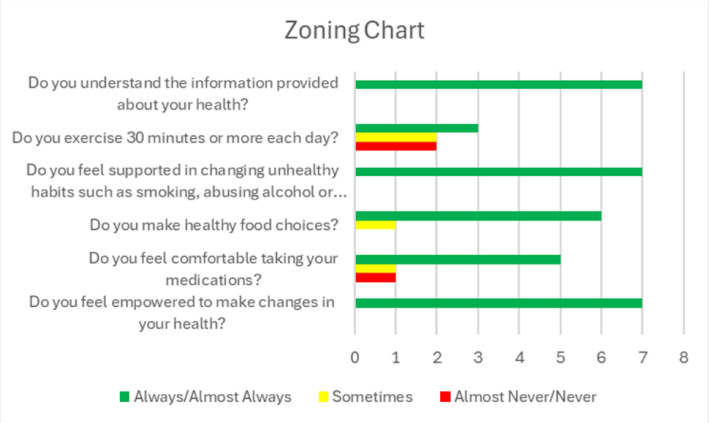
Implementation Findings

Limited availability of monitoring devices emerged as a key barrier, as units were shared across multiple hospital programs. In addition, patients living outside the 40-mile service radius could not consistently receive in-home follow-up support.

Action Taken

To address this challenge, five home monitoring units were secured through the NHNHRMC Hospital-at-Home program and allocated to support project participants, improving access to remote monitoring and continuity of care. Post-intervention survey responses indicated high levels of understanding, medication comfort, and perceived empowerment to make health behavior changes, with lower consistency observed in daily physical activity.

Patient Survey



Patient Self-Reported Engagement and Empowerment: *Post-intervention survey responses indicate high levels of understanding, medication comfort, and perceived empowerment to make health behavior changes, with lower consistency observed in daily physical activity.*

PDSA CYCLE 2: EXPANDING ACCESS THROUGH RURAL OUTREACH

Change Idea Tested

Geographic access barriers were assessed to determine how distance from the main campus and CP service area affected patient participation and follow-up care. Patients discharged home who lived outside the CP coverage area received home blood pressure monitors, individualized blood pressure parameters, and instructions for daily self-monitoring using a log.

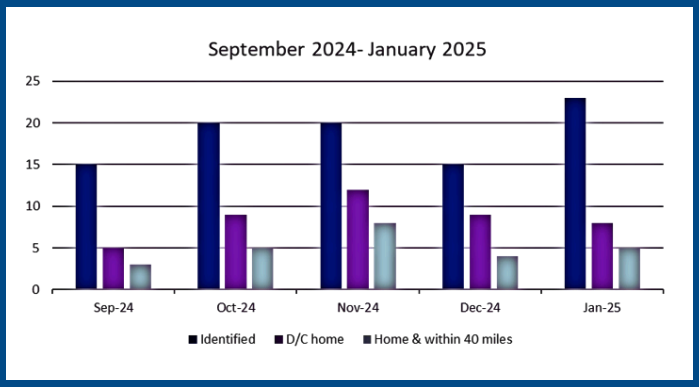
Implementation Findings

Program data showed that approximately 42% of eligible discharged patients lived outside the CP service area, limiting the ability to provide in-home follow-up visits. Distance created challenges for consistent patient engagement and highlighted gaps in access to post-discharge support for rural populations.

Action Taken

To address these barriers, NHNHRMC partnered with the Health Equity Team to expand outreach into rural communities by offering blood pressure, glucose, and cholesterol screenings, stroke risk assessments, and counseling at community-based sites, including three locations in Pender County and two in Brunswick County.

Discharge Patterns



Geographic Access and Discharge Patterns: *Monthly data show that a substantial proportion of patients discharged home lived outside the CP service area, reinforcing the need for rural outreach partnerships and alternative follow-up strategies.*

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SUCCESSES

Stronger Community Partnerships

This initiative strengthened cross-sector collaboration between NHNHRMC's Health Equity Team, CPs, and trusted community-based organizations, including food pantries, churches, and schools. These partnerships expanded the program's reach beyond traditional clinical settings and created new pathways to engage residents who may not regularly access healthcare services.

Patient Empowerment

A new survey tool was developed to support patient self-reflection and measure progress related to lifestyle changes and self-management behaviors. This tool encouraged patients to take a more active role in managing their health while providing staff with actionable insights to tailor education and follow-up support.

Expanded Reach

The initiative successfully extended services into rural communities. Through community-based screening events and the distribution of take-home blood pressure monitors, patients who might otherwise face transportation or access challenges were able to engage in ongoing monitoring and prevention efforts.

Increased Awareness

Targeted counseling and education sessions improved community understanding of stroke risk factors, hypertension management, and prevention strategies. These efforts helped raise awareness of early warning signs and the importance of routine blood pressure monitoring, supporting earlier intervention and stronger engagement in preventive care.

IMPACT AT A GLANCE

- COMMUNITY-BASED PARTNER SITES ENGAGED
- 53 PATIENTS IDENTIFIED WITHIN THE 40-MILE SERVICE RADIUS
- 29 PATIENTS ELIGIBLE FOR POST-DISCHARGE FOLLOW UP
- 8 PATIENTS RECEIVED HOME BLOOD PRESSURE MONITORING SUPPORT
- 1,282 STROKE EDUCATION TOUCHPOINTS DELIVERED
- CHW + COMMUNITY PARAMEDIC CARE COORDINATION INTEGRATED

CHALLENGES & GAPS

Several evaluation limitations were identified. A transportation-related survey question was omitted, limiting understanding of access barriers. Response options were incomplete, and only post-intervention data were collected, preventing direct before-and-after comparisons. Delays in data abstraction slowed analysis. Future improvement cycles will incorporate pre- and post-intervention surveys, expanded transportation measures, and standardized data abstraction timelines to strengthen evaluation quality and learning.

SUSTAINABILITY

This initiative has laid the groundwork for long-term improvement in stroke and hypertension care. Moving forward, NHNHRMC and partners will:

- Continue referrals to the CP program for blood pressure management and risk factor modification.
- Expand rural outreach screenings through partnerships.
- Strengthen collaboration with rural primary care providers to improve stroke prevention and follow-up.
- Leverage video visits to address transportation barriers.
- Seek sustained investment in monitoring devices and workforce capacity to expand access and equity.

> ***The Collaborative has been successful in highlighting the barriers in providing preventative care across a siloed system.***
>
> *Erika Yourkiewicz, NHNHRMC*

This initiative, led by NHNHRMC in partnership with Constellation Quality Health's Constellation Regional Learning Collaborative, demonstrates how community-centered care, cross-sector partnerships, and patient empowerment improve access, engagement, and prevention. By investing in CPs, CHW integration, rural outreach, and home monitoring, the region is building a more equitable and resilient cardiovascular care system that improves outcomes and saves lives.

INTERESTED IN PARTNERING FOR THE NEXT COHORT?

Healthcare providers, community organizations, and public health partners are invited to join future collaborative cohorts focused on improving hypertension and stroke outcomes through quality improvement, peer learning, and community-centered strategies. Email us below.

Constellation Regional Collaborative
regionalcollab@constellationqh.org