CARE MODEL CASE STUDY: TELENEUROLOGY—PUBLIC PROGRAM

AMERICAN ACADEMY OF NEUROLOGY®

Introduction

Telemedicine involves the use of various electronic communications to practice medicine from a location that is remote from the patient and is increasingly common in various health care settings, including in the practice of neurology, especially since the start of the COVID-19 pandemic in 2020. Telemedicine in neurology, known as teleneurology, has been on the rise for years and is becoming increasingly integral across care settings, especially in providing urgent neurologic care to rural care settings that may have limited access to neurologists and neurology advanced practice providers (APPs). While teleneurology will never replace the need for face-to-face care altogether, it can provide critical patient access to care, and can, at times be equal in care and cost-effectiveness compared to face-to-face encounters for many conditions, while providing the neurology provider with opportunities for more career flexibility.

The AAN's Care Delivery Subcommittee, under the guidance of the Medical Economics and Practice Committee, set out to better understand different care delivery models and their professional and personal advantages and disadvantages compared to traditional fee-for-service care delivery models and reimbursement. The Care Delivery Subcommittee worked with Andrew Hollander, PhD, MBA, PMP, the program manager of New Mexico's statewide ACCESS Telemedicine Program, and Tarun Girotra, MD, a neurologist participating in the program, which is founded and administered by the University of New Mexico and made possible by a Center for Medicare & Medicaid Innovation (CMMI) grant to provide insight into the public teleneurology model. Responses have been edited and condensed for clarity.

This case study examines telemedicine outside the context of the COVID-19 pandemic, which has greatly increased the use of telemedicine.

The Care Model

The ACCESS Telemedicine model connects patients presenting with neuro-emergencies in rural emergency rooms with neurologists and other neurologic clinical experts from contracted academic medical systems, independent specialists, and a for-profit group of stroke neurologists from an adjoining state via telemedicine. Per the Health Resources & Services Administration (HRSA), the state of New Mexico is almost entirely designated as a Medically Underserved Area and its population density is ranked 45th in the United States. Many patients live in rural and underserved communities, making it difficult to receive specialty care, especially when presenting with an emergent condition, such as stroke or traumatic brain injury. However, in most cases, once an initial diagnosis is made, rural hospitals can continue care locally, which avoids patients being transferred to a higher level of care and associated expenses, which is often not necessary beyond initial diagnosis by a specialist. Beyond direct consultative services, the model includes an education for providers at rural and underserved hospitals to treat acute neurologic patients in their local facility and seeks to retain patients locally when possible by enhancing comfortability and expertise of providers in rural hospitals.

The Value Proposition

As with most anything, there are upsides and downsides to any care model. Based on the insights shared from Hollander and Girotra, the Care Delivery Subcommittee evaluated the model and distilled elements of this public teleneurology model into three symbiotic value propositions.

Value Proposition to the Patient

+ Decreased time to specialty treatment
+ Increased retention in local facility
+ High patient satisfaction

Value Proposition to the Provider

+ Increased income opportunities
+ Increased mentorship and education opportunities to rural providers
- Maintain high-quality consultation for neurology conditions
- Increased administrative burden related to credentialing

Value Proposition to the Health System

+ Increased availability to specialty care
+ Reduced emergent transfers
+ Increased local patient and provider retention
+ Enhanced specialty education to rural providers
+ Retention of health care dollars in local health systems
- Relies on the current fee-for-service payment system

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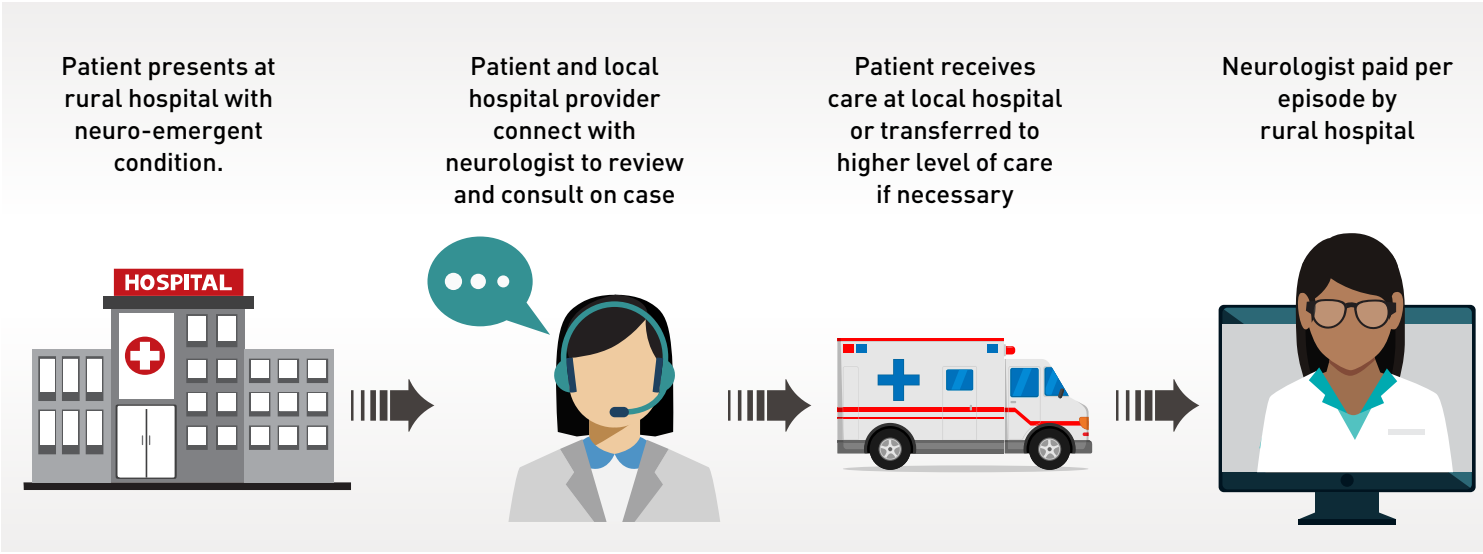
How It Works

To date, the ACCESS Telemedicine Program has recruited, trained, and implemented the program at 22 hospitals in rural and underserved areas in New Mexico. Patients present at one of the hospitals that contracts with the ACCESS Telemedicine program with a neuro-emergent condition. The patient and local hospital provider are connected with a credentialed neurology provider at a "hub" hospital and the neurology provider will review the case and consult with the in-person provider and patient via telemedicine to provide a neurologic diagnosis and discuss a care plan. If the case warrants transfer to a higher level of care, the patient will be transferred. If not, the patient receives care in the local hospital. Neurology providers at hub hospitals that perform consults are paid by the rural hospital for their services on a per-episode basis based on fair market value for the specialty and covers the cost of technical and clinical education to the rural hospital provider and nursing staff. The per-episode payment structure is more feasible for rural and underserved hospitals to maintain compared to alternative employment options or other fixed services. While the program relies on neurology experts to consult and diagnose, a key component of the ACCESS Telemedicine Program is education of rural providers to ensure a level of comfortability with neurologic care.

For example, a patient presents at a rural hospital with stroke and a consultation is performed with the local provider and a neurologist at a "hub" hospital via telemedicine. The neurologist and local provider perform an exam and discuss a diagnosis and plan of care. After diagnosis, the neurologist also discusses administration of tissue plasminogen activator (tPA) with the nursing staff caring for the patient and other features of the care plan. Of the educational aspect of the ACCESS Telemedicine program, Girotra says that he did not realize the gravity of deficient neurologic expertise in rural areas, and that the providers working in the emergency departments and inpatient units of rural hospitals are often managing conditions and diseases outside their "comfort zone" or training. He says, "Being able to provide my expertise as a stroke neurologist to them has been fulfilling professionally and improved patient outcomes by timely treating neurological emergencies."

The program uses a blend of educational opportunities for providers in rural and underserved hospitals:

- Foundational Neuroscience Workshops that cover neurologic assessment, stroke management, tPA administration, management of traumatic brain injury and acute head injuries
- Clinical Neurosciences Grand Rounds live streams to rural hospitals in the program
- Community Physician Educational Quarterly Forums where didactic education and case studies are presented remotely online
- Program and Technology Education: training staff on telemedicine procedures, equipment, data abstraction, and quality follow-up



The ACCESS Telemedicine Program bills those contracted rural hospitals a bundled amount by consultation and discipline of consult. The New Mexico Medicaid program has provided a bundled reimbursement at full price for consultations when program claims are submitted by the originating hospital, a strategy that works particularly well for the small- to medium-sized hospital as they only pay per episode, avoiding the standard additional fees and charges for on-call physicians, equipment, monthly subscription, and others charged by traditional telemedicine companies. This payment structure is more sustainable for rural hospitals as it avoids subsidies or support from the hub facility and reduces potential conflicts of interest related to recommending transport for lower acuity patients to increase hospital admissions. This program self sustains by extracting reimbursements from payors, which are most often the primary beneficiaries of decreased transports, rather than supporting the program by increased patient admissions.

The Provider Experience

This model is beneficial to both neurology providers performing consultations and the rural providers that may not have advanced neurological training. For the purposes of this case study, we focused on the neurologist experience. Girotra not only describes "an immense amount of professional satisfaction in providing care to the patients in the rural hospitals" but notes some of the personal benefits to participating in the program, including its flexibility. He says, "The ability to provide care remotely on a secure network has given me the liberty of not putting my personal life on hold. With just a laptop connected to my cell phone network, I have been able to see patients from the comfort of my home office or from my car in the grocery store parking lot." This flexibility encourages more neurologists to participate in the program and perform teleneurology consults and in turn, "provides an important safety net and prevents patient care compromise" for patients presenting with neurologic symptoms in rural areas of New Mexico.

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[1] American Academy of Neurology. (2014). AAN Position Statement on Telemedicine. *AAN.com/policy-and-guidelines/policy/position-statements/telemedicine/*

[2] Hatcher-Martin JM, Adams JL, Anderson ER, et al. (2019). *T*elemedicine in neurology: Telemedicine Work Group of the American Academy of Neurology update. *Neurology*. *n.neurology.org/content/early/2019/12/04/WNL.0000000000008708*

[3] Shaw, G. (2019). A New AAN Report Details Where There Is Evidence for Teleneurology—And Where There Are Gaps. *Neurology Today*. *journals.lww.com/neurotodayonline/fulltext/2019/12190/a_new_aan_report_details_where_there_is_evidence.9.aspx*