Neurology Workforce Shortage:
What Leaders Must Do Now to Avoid Crisis

FOCUS PAPER

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I. INTRODUCTION

These are exciting times for neurology! Every year new treatments are brought to market. Neurologists and their care teams have more options to offer people affected by neurological conditions. People whose lives and futures are impacted and even devastated by multiple sclerosis, Parkinson's disease, and migraine have new hope.

Accompanying new treatments is an increasing demand for neurology services. As baby boomers age, the number of people affected by neurological conditions grows. Alzheimer's disease, dementia, and stroke most commonly affect people over age 65.

The neurology workforce is also aging. Every year baby boomer neurologists are reaching the age of retirement. There are not enough physicians and advanced practice providers in the neurology workforce or the training pipeline to meet the growing demand for their services. Medical groups and health systems are forced to compete ever more intensely to recruit qualified candidates to fill neurology provider positions.

Neurology faces a future of spiraling demand combined with constrained supply. This threatens a public health crisis.

What went wrong? What must be done?

II. RESEARCH METHODOLOGY

The author's 25 years of experience as a neurology practice administrator augmented an in-depth review of various publications, articles, and studies. Interviews were conducted with practicing neurologists (9,10), a regional director of a healthcare recruiting firm (11), and primary care physicians who are leaders of accountable care organizations (6,7).

III. PURPOSE OF THIS PAPER

The purpose of this paper is to examine the root causes of the neurology workforce shortage and to propose strategies to address the growing crisis.

IV. BACKGROUND

The demand for neurology services is increasingly outpacing the supply of clinicians who can provide them. Physician practices and health systems across the nation are experiencing growing competition for neurologists. Hiring neurology trained advanced practice providers (nurse practitioners and physician assistants) is challenging.

A 2013 study supported by the American Academy of Neurology (AAN) showed an 11% shortage in neurologists at that time and projected a 19% shortage by 2025. The supply of neurologists is projected to increase from 16,366 in 2012 to 18,060 by 2025, while the demand is projected to increase from 18,180 in 2012 to 21,440 by 2025 (1). The generally accepted standard of care for wait time to see a neurologist is two weeks. The 2012 national average neurologist reported patient wait time for first appointment was 35 days (2).

In 2016, the average wait time to see a specialist in Parkinson's disease was greater than two months, with one-third of centers reporting wait times greater than three months (3). Online research reveals countless individual reports of appointment wait times of many months for the most common neurologic conditions.

Factors on both sides of the supply and demand equation contribute to this imbalance.

A. Supply Constraints

A fundamental catalyst of supply constraint in the physician workforce is an outdated system of government incentives. This is compounded by changes in neurology workforce demographics and worker's expectations.

U.S. government involvement with the supply of physicians began with the birth of Medicare in 1965. Policymakers took a forward-thinking approach to health insurance for the growing population of Americans over age 65 who could not access private insurance.

The Medicare program included temporary funding for graduate medical education (GME) to strengthen the training pipeline of physicians to provide care to the newly insured. This GME funding was intended to be temporary, but it grew for the next 30 years, as did the supply of trained physicians. In 1997, amid concern for the financial impact of this program, the number of funded training institutions and positions was essentially frozen at 1996 levels.

Annually, $15 billion of U.S. taxpayer dollars now support GME positions for primary care and specialties nationally. The Medicare program remains the primary source of GME funding (4).

More than 20 years have passed since 1996, bringing unprecedented advances in technology and treatment to the field of neurology. During this period, the site of care for most healthcare services continued to change. GME funding and the site of training did not.

While the site of care for most healthcare services shifted away from teaching hospitals, training dollars did not. The structure of the government GME funding system discourages teaching hospitals from using training sites outside the hospital to better prepare physicians for the way they will practice medicine after training.

The result: Physicians who will enter the workforce to practice in sites of care *outside* the hospital are trained *in* the hospital. They are poorly prepared for a world where payers and employers will demand that physicians keep patients out of the hospital to control cost. There is a skills gap in the transition from training to practice. The neurology workforce, already restricted by funding policy, is made less productive by the rough transition from training to practice. Productivity is further impacted by changes in the workforce itself.

Neurologists under the age of 38 in 2018 are 'millennials' with different work-life priorities than older neurologists. The result is they work fewer hours and see fewer patients. This diminishes the impact of young neurologists entering the workforce.

The increase in women entering the physician workforce reflects our changing culture, but is another factor reducing supply. Many in this growing population of female physicians continue to carry the role of primary provider of child care and family care, despite their professional position. The result is they work fewer hours and see fewer patients.

The aging and retiring of the existing baby boomer neurology workforce compounds the shortage. As the supply of baby boomer neurologists declines, neurology groups and health systems pay higher compensation to younger neurologists for fewer work hours. While the work-life balance

shifts and compensation for young neurologists increases, the challenges of delivering neurology increase as well.

A powerful solution to the shortage of neurologists is innovation in the use of advanced practice providers (APPs). APPs, including nurse practitioners and physician assistants, are an integral part of the team in primary care and other specialties.

In neurology, this proven approach is impeded by a lack of training incentives, fee-for-service payer policies, negative attitudes by neurologists toward the team care approach, force of habit in the practice of neurology, and delayed adoption by neurology's largest trade association.

A regional director of a healthcare recruiting firm reported that APPs with neurology specific experience are even more difficult to recruit than neurologists (11). The root causes of the APP shortage, however, are less complex. Of the $15 billion GME dollars spent each year, $0 are allocated to GME funding for APPs. The direct consequence of this is a corresponding lack of formal neurology training programs for APPs (17). Nationally, there is only one known neurology GME program for APPs. That program has only two positions; not enough to staff that health system's own demand for these clinicians. Here again, the incentive model has not adapted to the changes in healthcare – in this case the increasing need for APPs.

A large commercial insurance plan with top five market share in a major U.S. metroplex lacks the contracting mechanism to allow in-network physicians to add their APPs to the plan's provider network. This impedes delivery of APP services to patients with this insurance plan. The AAN, the largest professional association of neurologists, only recently began supporting the addition of APPs to the neurology care team. With one known exception, physician training in neurology takes place in teaching programs that do not include APPs.

Neurologists are not trained to work in teams with APPs. APPs are not formally trained to work in neurology. Although the National Center for Health Workforce Analysis projects substantial

growth in APP presence in the neurology workforce by 2025 (5), there will still be a shortage in neurology.

In summary, the neurology workforce supply is constrained from many sides. Factors including government policy, advances in neurological care, demographic changes, failure to innovate, and changing clinician work/life balance expectations are limiting growth in the supply of neurology patient care. But it is the convergence with another force – demand expansion – that is creating the perfect storm.

B. Demand Expansion

Demand expansion in neurology is more straightforward than supply constraints. As the growth of the neurology workforce is constrained, advances in treatment for neurological conditions and longer life expectancy increase the demand for neurology services.

As life expectancy increases, more people develop neurological conditions. Parkinson's disease, stroke, Alzheimer's and other types of dementia are significantly more common in the elderly than in the general population.

Further increasing demand for neurology, advances in treatment mean there is more for clinicians to offer patients. Doing more takes more time, both in direct patient care and in clinician education. The demand for sub-specialized neurology services increases with the complexity of treatment options. The greatest concentration of neurologists equipped and trained to deliver these advanced treatments is in the millennial age group. If millennial-aged neurologists work fewer hours and take more time with patients than their predecessors, the workforce shortage is amplified.

While questions surround how to most accurately project the future neurology workforce shortage, the message is clear: There is a neurology workforce shortage coming, if not already present.

Patient access to neurology care will continue to decline unless leaders act now to change the way neurology services are delivered.

V. EXPLORING SOLUTIONS

As the challenges mount, leaders must consider how to change the way neurology services are delivered. The right solutions will deliver the right care at the right time in the right place. Prospective changes relate to primary care, behavioral health, expanding and connecting the care team, and growing the neurology team.

A. Primary Care as Part of the Solution

Primary care physicians/providers (PCPs) play an important role in the care team of every neurology patient. Effective collaboration with primary care is central to reducing demand on the neurology workforce. Unfortunately, primary care physician training, patient volume expectations, and a myriad of other modern-day practice challenges often leave PCPs without the tools and resources to take a more active role in managing patients with chronic neurological conditions.

PCPs must develop the skills needed to identify and make the most appropriate referrals to neurology, and to resume management of stable neurology patients. Referring too late can

decrease opportunities for effective treatment. Referring inappropriately increases cost, delays care, and increases patient wait times to see a neurologist.

PCPs may not be sufficiently trained to identify and make the most appropriate neurology referrals. Neurology rotations are limited, and usually elective, in primary care GME programs for medical students and residents. This impacts the effectiveness of the neurologist's role in the care team, exacerbating the shortage.

Two primary care physicians, each a leader of innovation in their healthcare market, were interviewed on this topic (6,7). Both reported their training required several rotations in surgery and obstetrics, but *no* required rotation in neurology. While one physician reported that his personal interest in the brain and nervous system drove him to complete two elective neurology rotations, he said he still finds neurology intimidating (7).

Both physicians, respected healthcare leaders with decades of practice experience, report limitations in their comfort level in managing patients with neurological conditions. Wide variations in this skillset exist between primary care providers, even within the same group practice (6).

Primary care GME programs must increase neurology exposure as part of a bigger plan to focus primary care training from the point of entry into medical school. Programs must offer specific, predictive, demand-based numbers of primary care and specialist medical school positions. Programs would remove surgery and obstetrics rotations from the primary care curriculum, replacing them with rotations in the cognitive specialties, including rheumatology, gastroenterology, endocrinology, infectious disease, and neurology. This focused program will better prepare PCPs to care for an aging population of Americans.

Sadly, as important as this change may be, it will take seven years for better primary care physician training to begin to impact the workforce, and decades to change it. What can be done now?

Neurologists and PCPs must collaborate more effectively to facilitate the successful transition of stable patients from neurology back to their PCP. Neurologists must provide a written long-term patient management plan to the PCP and provide the education and support needed to execute it. PCPs must lobby for payment for the neurologist's time to provide this support and to participate in quarterly care team meetings to monitor the success of the long-term patient care plan. Compensation for the neurologist's collaboration with the PCP will result in more robust patient care, as the saturated neurologist's office will find it difficult to dedicate their limited resources *pro bono.*

B. Behavioral Health

The most common comorbidities in neurology are in behavioral health. Depression and anxiety in particular compound and complicate neurological conditions. Addressing these complications improves lives and reduces demand on the neurology workforce.

The first step is to screen all neurology patients for depression and anxiety. Currently available electronic health record (EHR) and patient portal technology can be used to deliver these screenings reliably and without increasing workload on clinicians and staff.

It will take time and resources to select and implement the screenings, and to create the workflow to prompt patient participation and present the actionable results to the clinician. Any neurology practice that wishes to see patients over the age of 65 without suffering government-imposed financial penalty – that is to say *every* neurology practice – already has the most expensive and

effective tools at their disposal. They don't need new resources to screen for depression and anxiety. They need to make better use of the resources they already have by effectively utilizing their EHR software.

For treatment of patients with positive screenings for depression and anxiety, physicians and APPs may consider Cognitive Behavioral Therapy (CBT). CBT is highly effective treatment option that can be used to augment pharmacotherapy and in certain cases be the primary treatment itself. Treating these common neurological comorbidities will improve patient adherence, decrease disease burden, and allow for the practitioners to more effectively address the primary medical concern. In concert, these benefits translate to a decreased workload for the neurologist and the PCP alike.

C. Growing the Care Team

Nothing will increase the productivity of individual neurologists in lowering costs, increasing access, and delivering high quality patient care better and faster than leveraging the skills and time of the APP. But APPs and neurologists cannot meet all the needs of their patients without a network of healthcare professionals on their team. This network includes the neuropsychologist, social worker, therapists from multiple disciplines, and an emerging member of the team, the clinical pharmacist.

1. The clinical pharmacist

There is growing interest in the role of the clinical pharmacist – filled by a PharmD (Doctor of Pharmacy) – in the care team. New treatments, especially biological drugs with newly discovered mechanisms of action, have increased the complexity of medication management.

The clinical pharmacist is trained to address not only patient safety but also efficacy of treatment. Both are of concern when PCPs and specialists prescribe different medications to the same patient without comprehensive understanding of the implications.

Neurology medications can be particularly complex. Biologic drugs used by neurologists to treat multiple sclerosis are a good example. Biologics are often administered by intravenous infusion in a healthcare facility. They are aggressive, effective, and dangerous.

The systems in place to alert prescribers to adverse drug interactions are not designed to include infusion drugs. The prescribing neurologist can manually add the drug to the local health record, but persistent interoperability challenges prevent this manually added data from being reliably shared with other members of the patient's care team.

Because infusion drugs are not electronically prescribed and transmitted to a pharmacy, they are not added to the pharmacy database. The care team and even the retail and mail-order pharmacists – the last lines of defense against medication error – are blind to the drug interaction alerts when the most complex and dangerous drugs are prescribed by neurology.

The U.S. health system continues to struggle to deliver the right health information at the right time to the right people in the care team. Interim steps are needed now.

These steps do not include more neurologist time on the problem. Neurology providers report spending up to and sometimes greater than 50% of their face-to-face patient visit time managing the medication plan. After the visit, clinical support staff may spend up to or sometimes greater than an hour per patient to ensure access to prescribed medications. Educating and assisting the patient with application for financial assistance, obtaining insurance authorization, coordinating with clinicians to either appeal prescription benefit coverage denials or change the medication plan, and searching for best drug price, are all part of ensuring access. Neurology providers

spend even more time negotiating medication choices with other prescribers on the care team. This impacts neurology productivity.

A recent study involving neurology demonstrates that a clinical pharmacist's intervention helps prevent numerous drug related problems not caught by the system or the provider (8). Even if interoperability improves and systems reliably alert prescribers to adverse drug interactions, without a clinical pharmacist on the care team, effective pharmaceutical management will still consume too much of the neurology provider's time – or worse yet be missing.

Neurology teams that include a clinical pharmacist, however, can better educate patients about their medications and better collaborate with other prescribers. Advances in pharmaceutical treatment are not isolated to neurology. A clinical pharmacist's knowledge across specialties is particularly valuable here, given the wide range of comorbid conditions common to neurology patients. In this setting, a clinical pharmacist is focused on comprehensive medication management for the patient. This care team member is not pressured to squeeze all the complexities of delivering an effective, coordinated, accessible medication plan into a time slot that must also include the treatment of a chronic neurological condition. Care teams that include a clinical pharmacist can also leverage pharmaceutical industry resources to better support both providers and patients.

Adding a clinical pharmacist to the care team will recover patient visit time that neurologists and APPs devote to pharmaceutical management. Further study is required to develop the clinical workflow and financial model to support this team member.

2. Neuropsychology

Neuropsychological testing is an important tool in the neurologist's diagnostic toolbox. Neurologists, general and sub-specialists, say they would like to use neuropsychological testing more often to differentiate between physiologic conditions and behavioral health conditions and to monitor for actionable indicators of disease progression. Yet, neuropsychology services are widely unavailable to the neurology care team and their patients.

The value of neuropsychological testing can be seen clearly in the treatment of multiple sclerosis. Rapid advances in treatments for multiple sclerosis raise the stakes for early detection of any progression of this devastating disease. Along with mounting evidence that the damages wielded by this disease are cumulative and permanent, comes the recognition of cognitive impairment as an early sign of this disease and its progression. Neuropsychological testing is the only way to document cognitive decline in early stage multiple sclerosis.

3. Social Work

Including a licensed clinical social worker (LCSW) in the neurology care team brings a wide array of valuable services and resources to patients and families affected by degenerative neurologic disorders. These services may include advice on timing of disclosure to the employer and workplace accommodation requests, as well as exploring and accessing available employer, government, industry, and private benefits. A sharp LCSW knows how to get meals delivered and the power turned back on in the home of a wheelchair bound, cognitively impaired person before sundown.

The National Multiple Sclerosis Society makes LCSW services available for people with multiple sclerosis, but general neurologists treat a wider range of physically and cognitively degenerative

conditions. Neurology teams may choose to add the LCSW to the neurology team or research and identify multiple external resources to cover the range of patients in the neurology practice.

4. Physical, Occupational, and Speech Therapy

Physical, occupational, and speech therapists are not new to the neurology team. But lack of therapist specialization in neurology reduces their effectiveness in these roles. Neurologists may find that in their market a number of different therapists each treat a few neurology patients, not really enough to develop specific expertise or to justify additional training and certification specific to neurology.

Here's how to effect change in this at the neurology practice level: Plot on a map the locations of the therapists currently treating patients of the neurology group and overlap with the patient draw map. Because of the frequency and interval of these treatment plans, typically 2-3 times per week over a period of weeks or months, proximity to the patient's home is more important for these providers than for the neurologist. Circle the areas on the map of greatest correlation. Filter for provider network inclusion. Reach out to therapists in each area to find those who enjoy treating patients with neurologic conditions, want to become very good at it, want to do more of it, and are willing to commit to engage and collaborate with the neurology team long-term. Identify, engage, teach, learn, collaborate, and include a few devoted physical, occupational, and speech therapists in the neurology care team.

D. Expanding the Role of the Neurology APP

In addition to building the care teams outside neurology that work with neurology, neurologists must build their care teams within neurology. Expanding the role of the APP across common

sites of neurology care (hospital, office, and residential facilities) will deliver the most powerful strike against the neurology supply and demand problem.

In neurology, APP training is largely left to practicing neurologists. Time spent training an APP in neurology yields a long-term gain in available neurologist hours and patient access.

Despite the long-term benefits, this training is riddled with complications. The challenges range from pulling the neurologist hours from an underserved patient base, to the absence of standardized training programs, to the force of habit and negative attitudes by neurologists toward the effectiveness of the team care approach.

This resistance is more predominant in general neurology than in the subspecialties. Neurology care teams are more commonly found in the sub-specialties of neurology, such as multiple sclerosis and headache. The successful general neurology clinician must possess a wide base of knowledge that spans the neurology subspecialties. Diagnostic savvy may play a larger role in the skillset of the general neurology team.

It is clear that bringing the Neurologist/APP team to general neurology is no easy task; however, team care is critical to solving the long-term workforce shortage in neurology.

Neurologists must lobby the AAN to develop standardized neurology APP training programs designed for use by busy neurologists in active practice. Again, interim steps are needed now.

Neurologists must commit to develop, implement, train, and invest in a structure of clinician roles that delivers the right care at the right time in the right setting. They must commit to training APPs for an expanded role on the neurology clinician team.

Following the tradition of physician resident training in medical school, the hospital setting is a logical place for a neurologist to begin hands-on training with an APP. The role of the APP in the hospital setting is consistent across medical specialties. The specialist team is called in by a

patient's attending physician, typically to address a specific, acute problem. The first encounter is commonly delivered in a "split visit" that shifts the most time-consuming, and least critical, part of the hospital service from physician to APP. The supervising physician's time is focused on the elements of the visit that require a physician's training, expertise, and intuition.

Outside the hospital setting, however, the role of the neurology workforce becomes more complex as it focuses on long-term management of chronic disease. In the office setting, there is greater variation in the way the APP and neurologist work as a team.

The shared new patient visit in the office setting works like the split visit in the hospital setting. The APP will develop the skills needed to perform the bulk of the evaluation, discusses findings, and propose a treatment plan to the supervising neurologist. The neurologist's time, again, is focused on the elements of the visit that require a neurologist's training, expertise, and intuition. The shared visit can be used as an element of an APP training program and as an ongoing strategy in the neurology – especially general neurology – team playbook.

Experienced APPs who are well-trained in neurology can perform established patient visits independently or under the direct supervision of a neurologist. Direct supervision does not require the physician to join the APP and patient during the visit, it merely requires that the neurologist be present in the office, available to advise or assist the APP. Payer policy and acceptance of APPs into provider networks may limit the independent delivery of APP services, but the independent established patient visit remains a core strategy in the office-based neurology team playbook.

When paired with the shared new patient visit strategy, the transition to subsequent independent visits with the APP can be made smoothly and quickly. Patient education is emphasized throughout nurse practitioner (NP) training. Bringing the APP, particularly the NP, into the care team early with longer visit time scheduled to focus on patient and caregiver education increases

patient engagement. Educated engaged patients and caregivers make strong care team members. These members of the care team have the most control over treatment plan compliance, making them central to successful outcomes.

Successful outcomes for many of neurology's most devastating conditions are difficult to measure except by the length of time and level at which a patient's physical and cognitive function can be maintained. For example, Alzheimer's disease, Parkinson's disease, and multiple sclerosis are among the degenerative diseases treated in neurology. As these diseases progress, physical and cognitive decline occurs. When support from family, friends, and local programs are not be enough, a patient may move to a residential care facility.

At this point, the neurologist's office is no longer the right place to receive care. The right place to receive care is the residential care setting. The right provider of this care is the neurology team's APP. Residential facility visits are the right vehicle to deliver care.

Expanding the role of APPs in neurology is essential to extending the workforce to meet the growing service demands.

E. Staying Connected

Strategic use of the neurology clinician time over the disease course allows the neurology workforce to serve more people. Telehealth, transitional and chronic care management, and residential facility services offer such long-term connections.

Maintaining connection with patient and family after transfer to a residential facility allows the neurology care team to monitor and adjust the long-term care plan. As the patient's condition progresses, needs change. The long-term care plan must change as well as where services are delivered. To support the ongoing connection, Medicare will now pay for cognitive assessment

and care plan services every 6 months, across the sites of service from office to the various levels of residential care facilities. This service is appropriate for delivery by a neurology trained APP.

Medicare now pays for chronic care management (CCM) and transitional care management (TCM) so that care teams can better support patients through transition from hospital care and through the life-long course of chronic disease.

Neurologists and APPs must train and supervise registered nurses (RNs) and appropriate support staff in the delivery of TCM and CCM services. These services were developed for use in primary care but are appropriate for use when the patient's transitional or chronic conditions are primarily neurological.

Neurologist must lobby the AAN to develop guidelines for delivery of supervised CCM services in neurology.

Neurology care teams must leverage technology to connect with patients. As the neurology care team expands to serve the needs of more patients, technology must be used to maintain connections.

In almost every aspect of modern life, technology keeps people connected and increases access to goods and services. Businesses across service industries leverage technology to deliver better customer service with fewer employees. Fewer people serve the needs of larger populations with greater speed and efficiency at a lower cost.

Healthcare lags decades behind other service industries and the rest of the modern world in use of technology. This amplifies workforce shortages in healthcare. Despite years of national focus on implementing electronic health records and the electronic exchange of health information, outdated Medicare policy and fee-for-service payer models restrict the use of technology to connect people and information in healthcare.

Neurologists must continue to press for broader adoption of payable telehealth services.

F. Top of License Practice

With the demand for healthcare services outpacing the supply of clinicians to deliver it, patient access to care is at risk. Maintaining access to care becomes paramount. The care team must work very efficiently to deliver care to more people.

To maximize efficiency, all members of the team must work at the top of their license. Neurologists must only perform work that requires the license, training and expertise of a neurologist. APPs can perform work that requires the license, training and expertise of an APP. RNs can perform work that requires a nursing license. Work that does not require a medical or nursing license should be assigned to non-licensed staff.

Neurology teams must review clinician processes for steps that can be appropriately delegated to clinical support staff. A great example of work that is traditionally left to clinicians, but does not require any license at all, is medical record documentation.

Documentation of the practice of medicine is not the practice of medicine. Time spent charting means less time spent delivering patient care. Face-to-face patient time becomes face-to-back-of-head time as clinicians spend valuable visit time facing a computer monitor, clicking buttons in the EHR.

Scribes can be used to document the patient visit and recover the face-to-face time that has been lost. By returning the clinician's focus to the needs of the patient, the quality of visit time is increased and cost, in the form of visit time, is decreased. When the documentation is completed during the visit, the clinician spends less time at the end of the work day completing records. By

maximizing the percent of work hours licensed providers spend practicing medicine at the top of their license, more patients are helped, and provider job satisfaction is elevated.

Neurologists must implement a structure of clinician roles that supports patient access to the right level of care at the right time and in the right setting.

G. A Seat at the Table

Neurologists must commit a portion of the time recovered by improved processes to effect change in the powers that restrict patient access to the right care at the right time in the right setting. They must take a seat at the table of every power that hinders these goals and every power that can help attain them.

Neurologists must support legislative solutions to the GME funding problem. They must support the implementation of interoperability standards to share and present vital health information to the care team when and where it is needed. They must get involved in the design of payment models that support patient education and engagement, as well as collaboration time between members of the care team.

VI. CONCLUSION

The neurology workforce shortage exists and will get worse without change. There are not enough neurologists in practice or in the training pipeline to ensure neurology care will be available and accessible to all those who need it. Physician training programs are locked in the mire of an outdated system of government funding. Primary care physician training lacks focus on the cognitive specialties including neurology and the absence of formal neurology training

programs for APPs further hinders the supply of providers to meet the growing demand. It will take years before executed changes to formal training programs and their funding make a significant impact on the workforce.

Within this emerging crisis there is opportunity for innovation in the delivery of neurology care. While leaders take initiative to bring about change at federal and local levels, they must bring about change within their own practices and systems. Administrators and neurologists must work together to build, operationally support, and connect teams of providers with patients and family. Interprofessional expansion of the clinical neurology team can alleviate the implications of the workforce shortage. United by a common goal, the neurology team will deliver appropriate, timely, and targeted care to impact the growing population of patients in need of such specialized care.

Preparation for a successful journey begins with recognition between all members of the neurology group that changing the situation requires commitment to the investment of time and resources.

The starting point and path may vary between organizations. Leaders can begin by identifying the unmet needs of patients, caregivers, PCPs and each other. Are patients referred too late or inappropriately? Is new patient access delayed because neurologist's schedules are filled with stable neurology patients? Are comorbid anxiety and depression overwhelming patients and their families? Are social service needs being met? Are clinicians working at the top of their license? How much clinic time is consumed by medication management, coordination, pre-authorization, drug cost and coverage issues? What is the impact of these challenges on patients and their families? What is the impact on clinicians?

With the needs defined, the next step is brainstorming to identify the care team members whose expertise is best suited to meet those needs. For neurologists working without APPs, adding and

engaging APPs is the most important step in building the clinical care team. With APPs on the team roster, the next draft picks may be behavioral health providers or neuropsychologists supported by consistent screening for depression, anxiety and cognitive impairment. Reaching out and engaging PCPs and physical therapists in the community or engaging clinical pharmacists or social workers thru virtual visits may satisfy the greatest needs without consuming clinic space.

Within groups, roles can be matched to the individual strengths and interests of each neurologist. Every neurologist has a role. One neurologist may excel in developing the APP training program while another's strength is in teaching. Every group has a neurologist who will enjoy working with the IT team to source and implement psychological screenings and the technological solutions needed to stay connected with patients and the external care team. Others may enjoy reaching out to identify, develop, and connect the external community care team. Roles that include site-visit research and lobbying for government and payer policy change may require more time away from the office. Depending on the internal financial structure of the practice these roles may bear a greater impact to revenue generation and individual compensation. Potential disparities must be identified and addressed on the front end to avoid discourse and loss of commitment down the road. Caring for and supporting each other strengthens and empowers the team to pay it forward in care and support for their patients and families.

Other practice managers can compare the neurology workforce issues to their own situations and adapt plans to meet their specific needs. This will be particularly relevant to specialty practices. Areas of further study include APP specialty training and the development of operational and financial models for integrating the clinical pharmacist into medical practice.

END

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