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Latest From the American Neuromuscular Foundation

Yuen T. So, MD, PhD
AANEM President 2020

American Association of Neuromuscular & Electrodiagnostic Medicine | Winter 2020
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ANNUAL MEETING
The AANEM Annual Meeting is the premier educational event for those involved in neuromuscular (NM) and electrodiagnostic (EDX) medicine. Members enjoy a substantial registration discount. The meeting is a mix of cutting-edge sessions and hands-on workshops from leading experts in neurology, PMR, and other disciplines. Attend to build professional relationships and keep current in your practice.

EDUCATION
Keep up-to-date in your practice and meet your education and maintenance of certification requirements with exclusive AANEM products developed by our experts.

NEWS SCIENCE EDITORIAL BOARD (NSEB)
The NSEB reviews more than 30 medical journals to identify important, newsworthy items in the field and summarizes pertinent manuscripts to share with AANEM colleagues. The NSEB consists of physicians from varied backgrounds, practice settings, etc.

MUSCLE & NERVE JOURNAL HIGHLIGHTS
Muscle & Nerve is a monthly, peer-reviewed, interdisciplinary publication of original scholarly contributions centered on studies of the muscle, the NM junction, and peripheral motor, sensory, and autonomic neurons.

MEMBERSHIP
As a member of AANEM, you are an important part of a prestigious community of healthcare professionals dedicated to strengthening the field of NM medicine and providing the highest quality patient care. AANEM provides you with the tools you need to stay current in your field such as access to relevant research and educational information and opportunities for networking and community-building across primary specialties.

ADVOCACY
AANEM's advocacy efforts aim to improve the quality of patient care. We monitor state and federal issues, work to ensure appropriate reimbursement, create position statements to educate lawmakers and insurance companies, and fight against fraud and abuse.

PRACTICE
AANEM offers several resources to help you run your practice such as coding and billing information as well as details surrounding government healthcare programs and rules (MACRA, EHR, MIPS, etc). AANEM also provides position statements on key topics and evidenced-based guidelines to help you deliver quality patient care.

PROFESSIONAL STANDARDS
AANEM's Professional Standards department helps medical professionals attain and maintain certifications demonstrating knowledge in their field and commitment to patient care. This is achieved through preparation and successful completion of the American Board of Electrodiagnostic Medicine (ABEM) exam, maintaining certifications through continuing medical education, and the Maintenance of Certification Program (MOCP). Technologists may earn certification through successful completion of the Certified Nerve Conduction Technologist (CNCT) exam; there is also a process for CNCT certification maintenance. AANEM acknowledges laboratories for achieving and maintaining established levels of quality, performance, and professionalism through the EDX Laboratory Accreditation program.

AMERICAN NEUROMUSCULAR FOUNDATION
The American Neuromuscular Foundation provides funds to help develop the next generation of researchers to advance the science and practice of NM and EDX medicine with the ultimate goal of improving the lives of patients with NM diseases.
Dr. So ushers in a new year for the AANEM. One of the tasks of the AANEM President is to choose the plenary topic for the annual meeting, and Dr. So’s choice will continue to emphasize the future of treatments and therapies in NM diseases. This year’s topic is “Emergent Therapies in Neuromuscular Diseases.” “I am incredibly lucky to be involved in the 2020 Annual Meeting,” he says of his new position. “This is an amazing time in the history of our field. There are so many great stories we can’t wait to present this year.”

Themes you might encounter in 2020 include new treatments for previously untreatable diseases that were fatal only a few years ago and promising new drugs in the pipeline. These are just several exciting topics that will be covered at the 2020 AANEM Annual Meeting in Orlando, Florida. Read on to hear about Dr. So’s goals as AANEM President for the upcoming year, and what has kept him coming back to stay involved with the association for decades.

Dr. So, what are your goals as AANEM President?
Education, Research, and Advocacy - with the ultimate goal to serve our members as well as we can.

There is never a better time to do this. There has been an explosion of scientific advances in our field. With these advances comes increased need for education and advocacy to enable our members to serve their patients more effectively. Each new advance also creates opportunities for research. AANEM, together with our American Neuromuscular Foundation (formerly the AANEM Foundation for Education and Research), are well positioned to capitalize on all of these discoveries and advancements.

Talk about your plenary topic for the 2020 Annual Meeting. What are you most excited to hear about?
The theme will be “Emergent Therapies in Neuromuscular Diseases.” This is an exciting area in our field, with significant new treatments added over the past few years and dozens more currently in clinical trials. Our plenary speakers will cover the treatment prospects of a wide range of NM diseases, such as new genetic therapies in motor neuron diseases and muscular dystrophies, and new immunotherapies in myasthenia gravis and immune neuropathies. I am hopeful that there will be late-breaking news from several clinical trials just in time for our October meeting. I look forward to discussions on the scientific data, cost-effectiveness analysis, logistical challenges, as well as future implications of all these new developments.
The Exhibit Hall at our 2019 AANEM Annual Meeting served as a reminder of the changes in our field. The increased presence of the pharmaceutical industry was evident. There are exciting new treatments that are also extremely expensive. It is important for AANEM to be an independent source of information for clinicians to guide the practice of NM medicine.

Why should people attend the 2020 AANEM Annual Meeting in Orlando, Florida?
Our 2020 meeting will be the place to hear thoughtful presentations by leading experts in our field. The AANEM Annual Meeting has always been the largest and most comprehensive meeting in NM medicine. It will also be a great occasion to network with colleagues all over the world. Besides, Orlando is a great place to visit in October.

What inspired you to join AANEM, and what has kept you motivated to stay involved?
AANEM is the central hub for me to interact with colleagues all over the world. The size of the organization is close to perfect, certainly not too big and yet big enough to be very relevant. It brings in colleagues with similar interests and expertise, and yet we are diverse enough that we can constantly learn from each other.

What benefits has AANEM membership provided you over the years?
It often is the only national meeting I go to in the fall. The course syllabi along with other educational materials are valuable resources for my own education as well as in my teaching of residents and fellows.

I was fortunate to get involved with various AANEM committees over the years. That opened another dimension in my career. Learning about new issues and processes, and making connections with other colleagues were instrumental in my personal professional growth.

Finally, what inspired you to become a physician, and what advice would you give to young physicians emerging out of residencies and fellowships?
It is very gratifying to learn about the intricacies of the human body and then apply that knowledge to help people in need. And to our young physicians out there… get involved and make an impact. You are the future of medicine.
The Annual Meeting is always a great time to reconnect with colleagues, make new friends in your field, and celebrate all the advances in NM and EDX medicine. The 2019 meeting in Austin, Texas, was the most well-attended annual meeting in AANEM history, with more than 1,500 attendees.

Here are a few highlights from the meeting.

**Top Sessions**
The 2019 meeting featured a plethora of great sessions. These five were the best attended.
2. Diagnosis and Treatment Breakthroughs in Genetic Testing
3. Updates of Demyelinating Neuropathies
4. Hot Topics in NM Literature
5. MUAP Recruitment Analysis Made Simple

**A Reimagined Residency/Fellow Experience at the Annual Meeting**
*By Taylor Harrison, MD, AANEM Chair – Graduate Medical Education Committee*

At the 2019 Annual Meeting, the AANEM introduced new workshops for residents and fellows covering the topics of repetitive nerve stimulation and NM US anatomy. Workshops provide an excellent learning environment in that they facilitate active discussion between teaching faculty and learners, and trainees have the immediate opportunity for hands-on application of new knowledge and techniques.

Workshops emphasize active learning as opposed to the passive learning in the traditional lecture-hall format, and the small group format facilitates meeting new people with shared interests.

The cost of workshop attendance is a fraction of the conventional workshop cost (only $25), which the AANEM believes is a valuable investment in the future practitioners of EDX and NM medicine.

We hope our resident and fellow members will take advantage of this unique learning opportunity as we continue to expand this program.

“I come for a lot of things. The most fun part is seeing my friends and colleagues around the country who are doing the same thing that I’m doing. We learn a lot about nerve and muscle testing.”

- Ronald Bingham, MD, PMR  
AANEM Member since 1988
2020 Annual Meeting to Emphasize Emergent Therapies

If you haven’t already done so, be sure to mark your calendars now for the 2020 AANEM Annual Meeting, taking place October 7-10. This year we’re heading for some sunshine – the JW Marriott Grande Lakes in Orlando, Florida – to showcase the premier educational event that brings together EDX and NM specialists from around the world. The focus of our 2020 meeting is “Emergent Therapies in Neuromuscular Diseases.”

AANEM President, Yuen T. So, MD, PhD, says this is an amazing time in the history of our field. “There are so many great stories we can’t wait to present this year.”

There will be an abundance of exciting topics covered at the 2020 AANEM Annual Meeting. With so many advances in treatments recently, there are new ways to handle previously untreatable diseases that many thought fatal only a few years ago. The meeting will highlight some of these therapies, and provide up to date knowledge of everything going on in the world of NM disease.

For his plenary speakers, Dr. So has selected experts with significant experience on topics related to emergent therapies for some prominent NM diseases, including ALS, SMA, myasthenia gravis, and others. The new Surinderjit Singh lecture for the plenary has yet to be chosen but here is the current list of plenary speakers for the 2020 Annual Meeting and the diseases they will be discussing.

2020 Plenary speakers
- Gil Wolfe, MD – Myasthenia Gravis
  Reiner Lecture
- Merit Cudkowicz, MD, MSc - ALS
  Lambert Lecture
- John Day, MD, PhD – Overview of Genetic Therapies
  Olney Lecture
- Craig McDonald, MD – Dystrophinopathy
- Charlotte Sumner, MD – SMA
- Luis Querol, MD, PhD - Inflammatory Neuropathies

Returning in 2020
In addition to the premier educational offerings at every annual meeting, we have made a point to improve social events every year. After all, when else will you get this chance to catch up with colleagues in your field from across the world? Get excited for the Abstract Reception, the President’s Reception, and various other coffee breaks and social activities throughout the meeting.

New Sessions
There will be many great sessions returning for 2020, including the top 5 from last year. However, we also have some exciting new speakers and topics on tap for Orlando. These were selected by the AANEM Program, SIG, Ultrasound, and Technologist Committees. We hope you’re just as excited to learn about these topics as we are!
- NM Complications of Cancer Treatment With Chemotherapy and Immune Checkpoint Inhibitors
- Recognizing and Treating Amyloidosis and Amyloid Polyneuropathy
- Mission to Mars: NM Medical Issues in Space Travel
- Teleneurology & Technology in NM Medicine
- CBD in NM Medicine
- Transiting the Child to Adult NM Care
- Planning Your NCS Study
- Troubleshooting: When Something Doesn’t Make Sense
Share Your Research in NM and EDX Medicine ————
Submit an abstract for the 2020 AANEM Annual Meeting

The best place to share your scientific research on NM or EDX medicine is at the AANEM Annual Meeting. Abstracts are being accepted through March 15, 2020, for the 2020 meeting in Orlando, Florida. All accepted abstracts will be published in *Muscle & Nerve.*

You may qualify for one of the following Abstract Awards
The American Neuromuscular Foundation supports its educational and research goals by funding several annual awards. This gives physicians the opportunity to be recognized among their peers for research, and to attend the AANEM Annual Meeting. The awards aren’t the only reason to apply, however. Submitted abstracts are published in the AANEM Abstract Guide, and your research is published in *Muscle & Nerve.* This is a great way to gain additional exposure and recognition for your research!

By submitting your abstract, you may be considered for the following American Neuromuscular Foundation awards. Further details regarding award criteria can be found at www.neuromuscularfoundation.org/awards.

**Golseth Young Investigator Award:** Given to the best research paper submitted to the AANEM Annual Meeting by a young physician. The first author on the research project must be one of the following: a medical student in an MD, DO, DVM, or foreign equivalent program; a resident; a fellow-in-training; or, a physician within 3 years following completion of residency or fellowship training. The Abstract Review Committee will invite up to 10 authors to apply for this award.

**Best Abstract Award:** Given to the best abstract submitted to the AANEM Annual Meeting. All abstracts submitted will be considered for this award unless the authors indicate they do not wish to be considered.

**President’s Research Initiative Award:** Given to up to 10 of the best abstracts submitted on the topic chosen by the AANEM President each year. The 2020 President’s Research topic is “Emergent Therapies in Neuromuscular Diseases.”

**Residency and Fellowship Member Award:** Given to AANEM Residency and Fellowship members who are the first author and the designated abstract presenter at the annual meeting.

**Medical Student Research Award:** Given to up to 10 medical student members who are the first author and the designated abstract presenter at the annual meeting.

**Technologist Member Recognition Award:** Given to technologist members who are the first author and the designated abstract presenter at the annual meeting.
“I think anyone in the field of neuromuscular or electrodiagnostic medicine should submit their work to the AANEM Annual Meeting,” said Ryan Castoro, DO, MS, and recipient of a 2019 President’s Research Initiative Award and a 2019 Residency and Fellowship Member Recognition Award. “There are few meetings in medicine where nearly all the experts converge in one place, but the AANEM meeting is one of them. Submitting an abstract is a great opportunity to further develop your work and career and the entire submission process was very simple and straightforward.”
Training Program Directors: Test Resident and Fellow Knowledge with AANEM’s 2020 Self-Assessment Examinations

Each year, nearly 200 institutions use AANEM's NM and/or EDX self-assessment exams (SAEs) as unique learning tools to test their physicians-in-training and compare their knowledge with others around the country. Upon completion of the exams, each institution will receive SAE coaching reports and detailed feedback to see areas where their residents and fellows excel and where they can improve. These are great tools to meet ACGME milestones.

AANEM’s 2020 SAEs will be proctored May 4-11, 2020, and all SAEs will be completed online this year. To prepare for the 2020 SAEs, institutions can begin registering candidates and reserving space in computer labs for the exams.

To learn more and to register your candidates, visit www.aanem.org/ProctoredSAEs.

Key AANEM Self-Assessment Exam Dates
- April 6, 2020: Final registration deadline
- May 4-11, 2020: Proctored exam dates

Welcome to Our New Learning Management System

AANEM has implemented a brand new learning management system to make it even easier for you to find new tools and fulfill all of your educational needs. All of our products are now stored in this system, so you can quickly search through our catalog and track your progress on our CME/CEU activities.

Visit our store at education.aanem.org and view educational tools like the ones below.

- **Self-Assessment Exams**
  
  Great tools for studying for board exams and meeting MOC requirements.

- **Interactive Training Tools**
  
  Practice and master EMG waveform and MUAP recruitment assessment.

- **Performance in Practice**
  
  Determine practice gaps, increase competence, and meet MOC requirements.

- **Monographs and Case Studies**
  
  Brush up on your EDX & NM disease knowledge.
Many Ways to Access 2019 Annual Meeting Materials

If you couldn't attend the 2019 AANEM Annual Meeting, no worries! You can still experience it in a variety of ways. We are offering our 2019 meeting content in a number of different packages, so you can pick the package best for you. These resources are a great way to ensure the meeting’s educational content is always available at your fingertips.

2019 Annual Meeting Collection

With so many great sessions that were offered at the 2019 AANEM Annual Meeting, it would’ve been impossible to attend every session in person. However, AANEM has a solution - the 2019 Annual Meeting Collection, a digital download of session presentations. The download includes the presentation slides and the presenter's audio commentary for most sessions at the meeting*.

Purchasers of the 2019 Annual Meeting Collection can receive CME/CEUs for sessions in which CME/CEUs were offered at the meeting.

Member Price - $450
Nonmember Price - $780

*The 2019 Annual Meeting Collection contains most of the session presentations; however, it does not include Ask the Experts sessions, sessions that experience technical difficulty during recording, and workshop materials. Workshop materials are available in the Workshop E-bundle.

2019 Workshop E-Bundle

AANEM offered a variety of workshops at the 2019 Annual Meeting, including several that have never been offered before! If you weren't able to attend, AANEM offers the 2019 Annual Meeting Workshop E-Bundle.

Purchasers of this bundle will receive handouts from all workshops that utilize handouts (35 or more) via a single, downloadable PDF. These handouts contain the teaching points of the workshops; however, the workshops are not recorded and audio/video is not available.

Member Price - $100
Nonmember Price - $250

Workshop CME/CEUs are only available for in-person attendance. Workshop CME/CEUs cannot be obtained by purchasing the 2019 Workshop E-Bundle.
Authors examined the potential causal effect of smoking on ALS using the Mendelian randomization method. Genome-wide association study data was reviewed for loci associated with smoking (current or ever smoked). Over 500,000 total participants study data was compared with genomic data from over 12,000 patients with ALS. Based on this method, smokers were found to have a higher risk of ALS compared to non-smokers and provides (further) evidence for a causal relationship.

Genome linkage studies use genetic markers associated with a risk (such as tendency to smoke, cancer, or hypercholesterolemia), compared with incidence of a particular condition, in this case ALS. This can overcome some limitations of traditional epidemiology such as recall or selection bias, by being independent of patient self-reporting or selection. Furthermore, Mendelian randomization can suggest a causative link if certain conditions are met.

In this study, individuals that ever smoked were found to have a higher risk of ALS compared to those that never smoked, which provides further support for more traditional epidemiological studies.

Comments: Epidemiological studies of ALS can be limited by the sometimes rapid progression of the disease, and this provides information on use of new methods of risk analysis. I think it will become increasingly important to understand how to use whole genomic data to determine risk, not only for researchers but soon for clinicians.
Epidemiological studies of ALS can be limited by the sometimes rapid progression of the disease. New methods of risk analysis including genome-wide association studies were reviewed in reference to the recently published ALS-GWAS. Analysis of whole genome data with linkage disequilibrium score regression on over 20,000 (mostly European) ALS patients and 59,000 controls looked at correlations with over 700 phenotypic traits. Positive correlations for ALS were seen with smoking status and moderate physical activity. Negative correlations were seen with higher cognitive performance, higher educational attainment, and light physical activity. Secondly, Mendelian randomization suggests a causative relationship between hyperlipidemia and ALS.

Genome linkage studies use genetic markers associated with a risk (such as tendency to smoke, cancer, or hypercholesterolemia), compared with incidence of a particular condition, in this case ALS. This can overcome some limitations of traditional epidemiology such as recall or selection bias, by being independent of patient self-reporting or selection. Furthermore, Mendelian randomization can suggest a causative link if certain conditions are met.

Comments: In this no-hypothesis exploratory study, there is some genetic confirmation of epidemiologically suggested risks for ALS including smoking, lower education, and hyperlipidemia, though the traditional epidemiological studies for low-density lipoprotein and ALS are somewhat mixed. The positive correlation with moderate exercise was unexpected and needs further explanation. Use of whole genomic data to determine risk for ALS may be useful in overcoming limitations in epidemiological studies of ALS in both research and clinical practice.

Comments: In severe cases of CTS, with nonlocalizable EDX studies (absent evoked sensory responses and absent motor responses), the addition of US imaging may be a useful adjunctive tool in confirming entrapment of the median nerve at the carpal tunnel and also detecting pathology proximally that may mimic CTS in the forearm. Although CTS is more common than most alternative diagnoses, the treatment is significantly different for other potential diagnoses and ultrasound may be useful in sorting this out.
Editorials Accompanying Manuscripts

Articles of particular importance are often accompanied by editorials written by experts in the field. *Muscle & Nerve* featured 3 editorials in November and 2 in December on topics that should appeal to the broad readership audience of *Muscle & Nerve*.

**Editorial Topics:**

**NOV. ISSUE 2019**

- Eye-controlled, power wheelchair performs well for ALS patients
- Development of grading scales of pedal sensory loss using Mokken scale analysis on the Rotterdam diabetic foot study test battery data
- Electrolyte beverage consumption alters electrically induced cramping threshold

**DEC. ISSUE 2019**

- Clinical-neurophysiological correlations in CIDP patients treated with subcutaneous immunoglobulin
- Muscle pathology of hereditary motor and sensory neuropathy with proximal dominant involvement with TFG mutation

**Invited Reviews in October, November, December 2019 Issues**

Almost every issue of *Muscle & Nerve* features at least 1 Invited Review. Members of AANEM can receive FREE CME CREDIT from selected Invited Reviews designated for credit by the AANEM.

**Editorial Topics:**

**OCT. ISSUE 2019**

- Clinical-neurophysiological correlations in CIDP patients treated with subcutaneous immunoglobulin
- Muscle pathology of hereditary motor and sensory neuropathy with proximal dominant involvement with TFG mutation

**Review on MRI-based biomarkers for muscular dystrophy:**

Advancements in magnetic resonance imaging-based biomarkers for muscular dystrophy, by Doris G. Leung, MD, PhD.

**Systematic review on ultrasound elastography and peripheral nerves:**

Ultrasound elastography for the evaluation of peripheral nerves: A systematic review, by Tze Chao Wee, FAFRM(RACP), FFPMANZCA, and Neil G. Simon, PhD, FRACP.

**Review on myopathy and myasthenia overlap:**

Trouble at the junction: When myopathy and myasthenia overlap, by Stefan Nicolaou, MD, Justin C. Kao, MBChB, and Teerin Liewluck, MD.
Changes That Will Impact Muscle & Nerve Authors

Planning to submit an article to Muscle & Nerve soon? Before you do, here are some new procedures recently highlighted in the October issue by Editor-in-Chief Zachary Simmons, MD, that will impact authors:

**Case Reports:**

- Case reports will become a smaller part of Muscle & Nerve content.
- The educational mission will be served primarily by continuing to publish Invited Reviews and AANEM Monographs.
- The category of “Noteworthy Cases” is being eliminated, and all case reports should now be submitted as Letters to the Editor (limited to a maximum length of 750 words).

**Options for Rejected Articles:**

- Some authors of rejected articles may receive a decision letter that will refer the author to three Wiley journals where they may submit their paper.
- This is in response to the rejection rate increasing at Muscle & Nerve in recent years, leading to some rejections that are indeed scientifically sound or educationally valuable, but that fall below the level of other submissions or do not fit well into the journal’s mission.

**ORCID:**

- Submitting authors are now required to have an ORCID ID. This keeps with current journal trends.
- This can be accomplished through the submission process if you do not have one.

Read the full editorial by Dr. Simmons on this topic titled, “Changing with the times” published in the October 2019 issue of Muscle & Nerve.

## Issues & Opinions in Muscle & Nerve

Don’t miss several important Issues & Opinions articles highlighting some of the most relevant topics in our field right now.

### Guidelines for NM US Training

- NM US has become an essential tool in the diagnostic evaluation of various NM disorders, and, as such, there is growing interest in NM US training.
- The aim of this paper is to develop consensus-based guidelines for NM US training courses.

### The Utility and Practice of EDX Testing in the Pediatric Population: An AANEM Consensus Statement

- This article was created by AANEM to highlight the varying accessibility of NCSs and needle EMG studies depending on the physician and institution.
- AANEM convened a consensus panel to perform literature searches, share collective experiences, and develop a consensus statement.

## Get the Most Out of Your Muscle & Nerve Subscription

To ensure you’re maximizing your Muscle & Nerve subscription and not missing any of the journal’s excellent content, be sure to download the Muscle & Nerve app and sign up to receive content alerts via email.

### Muscle & Nerve App – Download it Today!

With this app, you...

- Are notified when a new issue is available
- Stay current with the latest articles through Early View
- May download articles and issues to review offline
- Can save favorite articles for quick and easy access
- May share articles with colleagues or students

The Muscle & Nerve app is available for iPhone, iPad, and iTouch devices and can be downloaded via the iOS App Store.

### Content Alerts via Email

Stay on top of the latest science news by signing up for Muscle & Nerve’s email content alerts.

2. If you have a Wiley Online Library account, log in. If not, create an account. (Note: This is a different username and password than your AANEM account).

Once you’ve created your account, go back to right-hand side of the Muscle & Nerve homepage on Wiley Online and click “Get New Content Alerts.”

Once you complete these steps, you’ll receive email notifications when early view articles and issues are published online.
Please tell us about your educational background.

I did my medical schooling in India. After graduation, I completed internal medicine and neurology residencies (DM) and served as a faculty at the Institute of Medical Sciences, Banaras Hindu University (BHU), Varanasi. I restarted my career in the United States as a neurology resident in 2004 at Saint Louis University and then as a neurophysiology fellow. In 2008, I became a faculty member at the University of Missouri Columbia. I currently have a joint appointment at the University of Missouri Columbia and the Neurosciences Institute, SSM Health Medical Group, Saint Louis. As a neurologist, I have tried to balance myself between patient care, clinical research, education, and leadership; teaching residents, technologists, and medical students is my passion.

Why did you join AANEM?

AANEM was my first stop to discovering opportunities - patient care, education, and research related to NM and EDX medicine. I was fascinated by the very rich online as well as print resources such as podcasts, monographs, and self-assessment examinations. It is great value for the membership fee. NM and EDX SAE series with explanatory answers are very popular among faculty and residents and help to pass the board. Joining AANEM was also recommended by my program director, Dr. Ghazala Hayat (AANEM member since 1986).

Why have you continued your membership with AANEM over the years?

AANEM is a unique platform bringing two subspecialties together - neurology and physical medicine and rehabilitation. It has served my needs very well as I grew from a resident/fellow to faculty. From providing new knowledge to collaborating with neurologists and physiatrists and providing opportunities for leadership skill development through committees and informal mentorship, it has been very helpful.

Also, the Training Program Partnership has become a favorite of NM and EDX Training programs by providing residents and fellows free AANEM membership and access to member benefits and significant discount at the annual meeting registration and for educational products.

How has your AANEM membership impacted your career?

The AANEM has been a very powerful influence on my career. It helped me to make collaborations through social networking as well as lifelong learning through the annual meetings, online content, and self-assessment series. It has also helped me develop leadership skills.
and team spirit. I have enjoyed interactions with many physicians, technologists, and researchers through social networking at AANEM; some of them became good friends.

What has been your most memorable and/or favorite experience as a member of AANEM?

This is a tough question. All the AANEM meetings have been memorable as I get to know new people, new places, try new cuisine, and learn new information. Serving on the News Science Editorial Board as a committee member and now as a chair has been one of the best experiences. This allowed me to meet new members, interact with the board members, and have a closer look at the AANEM family who work behind the scenes. Every quarter, we have been reviewing 30+ journals and NM websites. Selecting articles, writing abstracts, presenting in a conference call, listening to individual comments and voting to select appropriate articles for the readers has been fun learning as it involved multiple skills - writing, presenting, listening, and editing.

What AANEM resources/products have you used over the years and how have they benefited you?

AANEM provides excellent educational opportunities. I use both print and online content depending upon the opportunity. I have enjoyed the self-assessment examination series (EDX and NM SAE) and monographs. I often use them during my presentation, bedside teaching, and patient care. The coding and billing resources are very helpful. SAEs are vital for EDX and NM medicine boards and in-service exams. I have also used the AANEM job listings for residency and fellowship openings. Some of our residents have matched through this.

What AANEM resources/products have you used over the years and how have they benefited you?

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What inspired you to become a physician?

The draw toward medicine and my current work has evolved over time. When I applied to medical school, I knew I wanted to connect with and help others, but I didn’t yet know what form that would take. Through residency and my early years on faculty, I became more aware of and intrigued by the systems and team dynamics that harness multiple people’s skills to advance a mission. I now divide my time between the one-to-one clinical work of unraveling nerve and muscle conditions through EDX medicine, and team-based efforts toward developing educational programs with the hope of broader impact. It’s interesting to think that while I have become more specialized within a clinical niche, my view of impact has also broadened as I think about developing people and systems.

What is the AANEM Community?

The AANEM community is a diverse global community of EDX and NM medicine lovers. Get involved and get connected. I recommend residents and fellows become members during their 1st and 2nd year of residency before the NM rotation, try to be a part of the Training Program Partnership, and enjoy the benefits. If you are planning to practice EDX medicine, take the EDX medicine board and get your lab certified through AANEM.

What inspired you to become a physician?

The draw toward medicine and my current work has evolved over time. When I applied to medical school, I knew I wanted to connect with and help others, but I didn’t yet know what form that would take. Through residency and my early years on faculty, I became more aware of and intrigued by the systems and team dynamics that harness multiple AANEM members?

What advice would you give to new AANEM members?

AANEM is a diverse global community of EDX and NM medicine lovers. Get involved and get connected. I recommend residents and fellows become members during their 1st and 2nd year of residency before the NM rotation, try to be a part of the Training Program Partnership, and enjoy the benefits. If you are planning to practice EDX medicine, take the EDX medicine board and get your lab certified through AANEM.

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AANEM continued to offer its “Women in Neuromuscular Medicine” session at the 2019 Annual Meeting. The topic becomes more timely as the demographics in neurology and physiatry evolve, with more women entering these fields every day.

The medical field in general will feel the influence of more women in medicine for generations to come – for the first time, there are more women than men enrolled in medical school.

This year’s session articulated the challenges and opportunities facing women in medicine, and helped identify resources and methods of addressing gender bias in the workplace.

“The session highlighted some important progress that has been made for women NM practitioners over the years, but it also demonstrated that much more needs to be done to support the success of women in this field,” said Dianna Quan, MD, and Chair of the Women in Neuromuscular Medicine session. The session also featured Sandra Hearn, MD, Holli Horak, MD, and Kamakshi Patel, MD, MPH, to discuss negotiation summary and a survey that was taken before the meeting to discuss trends among women in AANEM membership.

When it comes to women in AANEM leadership, much progress has been made. Four of the 6 Board of Directors are women (including Dr. Quan), and Dr. Horak is serving as Secretary-Treasurer for 3 years. Bonnie Weigert, MD, is president-elect and will begin her term following the 2020 Annual Meeting and both Resident and Fellow Leadership Liaisons are women.

“We have focused on being an inclusive, welcoming association,” says AANEM Executive Director, Shirlyn Adkins, JD. “I’m pleased with the amount of female representation we have within leadership. It reflects the changing times in medicine overall, and continues AANEM’s trend of encouraging a diverse leadership group.”

What has been your favorite experience as a member of AANEM?
At the 2018 Annual Meeting, I attended a small group “challenging cases” discussion session. Around the table, I found myself entrenched in a conversation about how to apply diagnostic criteria for neuropathies and where this aspect of the field might be going. My new colleague was clearly very bright, analytical, and familiar with the relevant literature. We enjoyed the discussion enough to share a meal together afterward. Upon exchange of contact information, something about his name struck me as familiar! He was Dr. Gautam Malhotra, Associate Professor of PM&R at Rutgers New Jersey Medical School (featured member spotlight in AANEM Edge Winter 2018). Later in the conversation, I connected him as a contributing author to (and now reviewer of) the McLean Course in Electrodiagnostic Medicine text, a resource I had relied upon extensively in residency. My copy of his words is riddled with heavy highlighting, notes, and coffee stains, and I felt a little starstruck to have encountered this expert who had influenced my early EDX development when I was working to master basic principles. And then, here we were, debating and discussing interesting ideas together! I now look forward to catching up with Gautam and other friends at AANEM, and we have exchanged ideas and advice both on career decisions and academic opportunities.

What AANEM resources/products have you used over the years, and how have they benefited you?
As a resident, I frequently looked for the case studies, to learn from others’ real experience. They helped me hone pattern recognition skills, and understand how electrophysiologic principles apply in practice, where co-existing pathologies and technical factors often muddy the data. More recently, I have been enjoying the podcasts, hearing from experts and learning from their experience. I’ve been fortunate to get to participate in a few podcast interviews, speaking with experts like Dr. John Norbury and Dr. James Richardson.
As a member of AANEM, you already have one of the best resources readily available to you … your fellow AANEM members! There is a wealth of knowledge within the AANEM member community and now we’ve made it even easier for you to harness that knowledge through AANEM Connect.

AANEM Connect, accessible via the front page of the AANEM website, is an online forum that enables members to ask questions of one another. Since we launched Connect last year, dozens of topics have been discussed, yielding more than 250 replies from fellow members. These posts have generated more than 27,500 page views on our site in the last year, and the number keeps rising every day.

How does AANEM Connect work?
Before a member can use AANEM Connect, they will need to agree to the terms and conditions of the site. Any AANEM member can post a question and any member can respond to that question; however, there is a volunteer team standing by to ensure that answers are provided to questions within 48 hours. AANEM Connect will be actively monitored on weekdays to ensure each question is receiving a response.

AANEM Connect Volunteers:
James W. Albers, MD, PhD
Bassam A. Bassam, MD
Daniel Dumitru, MD, PhD
Shawn Jorgensen, MD
Channarayapatna R. Sridhara, MD
Erik V. Stalberg, MD, PhD
Kathryn A. Stoelp, MD, MS
Louis H. Weimer, MD
Justin A. Willer, MD

Visit www.aanem.org/Membership/Member-Portal/AANEM-Connect to access AANEM Connect.
AANEM Returns to Capitol for 6th Annual Hill Day

AANEM hosted its 6th Annual Day on Capitol Hill on May 20, 2019. A record number (18) of AANEM’s State Liaisons attended the event and met with dozens of legislative offices to educate Senators and Representatives about EDX medicine and the current challenges facing the patient and professional community.

The Liaisons’ primary “ask” of the offices was for support of AANEM’s efforts to advance quality standards for EDX medicine to both improve patient care and stop the fraud and abuse in this area. Along a similar line, the liaisons also asked the offices to support the bipartisan Strengthening the Health Care Fraud Prevention Task Force Act (H.R. 525), which passed the House and was awaiting consideration in the Senate. The bill is currently sitting with the Senate Finance Committee. This important legislation would enhance public-private partnerships and facilitate additional activities to identify and eliminate fraud and abuse. Finally, the liaisons thanked the offices for providing the National Institutes of Health (NIH) with a $2.2 billion funding increase for Fiscal Year (FY) 2019 (per the request of AANEM and the healthcare community in general in 2018) and asked them to provide the NIH with at least a $2.5 billion increase for 2020 to bring total funding up to a minimum of $41.6 billion annually. This standard investment would serve to ensure meaningful progress in a variety of research portfolios and bring benefits to patients facing serious and life-altering neuromuscular conditions.

“We’ve now been active on Capitol Hill for 6 consecutive years. The congressional offices are very familiar with us and our efforts. Nearly every single office was very supportive of our cause and they were all eager to assist us in any way possible. These were some of the most productive meetings we’ve seen yet and we’re hopeful for some concrete action on this issue in the near future,” said Health Policy Director Millie Suk, JD, MPP. The AANEM State Liaisons will head back to Capitol Hill in March 2020.

We will continue to keep you informed as AANEM efforts to collaborate with CMS and Capitol Hill to promote quality standards in EDX medicine move forward.

If you are interested in getting involved in any of the AANEM advocacy efforts or just want to learn more, contact the AANEM policy department at policy@aanem.org. Visit the action center on our website to learn more about how to set up a visit and talk with your legislators: www.AANEM.org/Advocacy/Action-Center.
Friday, November 1 marked the release of the Centers for Medicare and Medicaid Services (CMS) Final Rule of the 2020 Physician Fee Schedule. If you haven’t had the opportunity to read the 2,400+ page document plus addendum, here is a brief summary of some of the items that could affect you and your practice:

- **Work Relative Value Units (RVUs)** for all EDX and NM codes monitored by AANEM remain unchanged, except for the destruction by neurolytic agent code, 64640, which saw an increase in work RVUs.
- **Practice Expense (PE) RVU’s and Malpractice RVU’s**—small adjustments were made to the PE and malpractice RVU’s of the nerve conduction study and needle EMG codes that resulted in slight changes in reimbursement.

### 2019-2020 Relative Value Unit (RVU) Comparison—Nerve Conduction Studies and Needle EMG

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
<th>Year</th>
<th>Work RVUs</th>
<th>Non-Facility PE RVUs</th>
<th>Malpractice RVUs</th>
<th>Total Non-Facility RVUs</th>
<th>Non-Facility Reimbursement (in dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>95885</td>
<td>Needle EMG; done with NCS; limited</td>
<td>2020</td>
<td>0.35</td>
<td>1.41</td>
<td>0.01</td>
<td>1.77</td>
<td>63.88</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2019</td>
<td>0.35</td>
<td>1.36</td>
<td>0.02</td>
<td>1.73</td>
<td>62.35</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change</td>
<td>Same</td>
<td>0.05</td>
<td>-0.01</td>
<td>0.04</td>
<td>1.53</td>
</tr>
<tr>
<td>95886</td>
<td>Needle EMG; done with NCS; complete</td>
<td>2020</td>
<td>0.86</td>
<td>1.86</td>
<td>0.03</td>
<td>2.75</td>
<td>99.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2019</td>
<td>0.86</td>
<td>1.78</td>
<td>0.04</td>
<td>2.68</td>
<td>96.58</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change</td>
<td>Same</td>
<td>0.08</td>
<td>-0.01</td>
<td>0.07</td>
<td>2.67</td>
</tr>
<tr>
<td>95887</td>
<td>Needle EMG; non-extremity; done with NCS</td>
<td>2020</td>
<td>0.71</td>
<td>1.66</td>
<td>0.03</td>
<td>2.40</td>
<td>86.62</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2019</td>
<td>0.71</td>
<td>1.58</td>
<td>0.04</td>
<td>2.33</td>
<td>83.97</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change</td>
<td>Same</td>
<td>0.08</td>
<td>-0.01</td>
<td>0.07</td>
<td>2.65</td>
</tr>
<tr>
<td>95907</td>
<td>Nerve conduction studies; 1-2 studies</td>
<td>2020</td>
<td>1.00</td>
<td>1.65</td>
<td>0.06</td>
<td>2.71</td>
<td>97.80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2019</td>
<td>1.00</td>
<td>1.66</td>
<td>0.06</td>
<td>2.72</td>
<td>98.03</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change</td>
<td>Same</td>
<td>0.01</td>
<td>-0.01</td>
<td>0.01</td>
<td>0.23</td>
</tr>
<tr>
<td>95908</td>
<td>Nerve conduction studies; 3-4 studies</td>
<td>2020</td>
<td>1.25</td>
<td>2.03</td>
<td>0.06</td>
<td>3.44</td>
<td>124.15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2019</td>
<td>1.25</td>
<td>2.00</td>
<td>0.07</td>
<td>3.52</td>
<td>126.86</td>
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<td></td>
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<td>Change</td>
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<td>-0.17</td>
<td>-0.01</td>
<td>-0.08</td>
<td>-2.71</td>
</tr>
<tr>
<td>95909</td>
<td>Nerve conduction studies; 5-6 studies</td>
<td>2020</td>
<td>1.50</td>
<td>2.55</td>
<td>0.07</td>
<td>4.12</td>
<td>148.69</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2019</td>
<td>1.50</td>
<td>2.62</td>
<td>0.08</td>
<td>4.20</td>
<td>151.36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change</td>
<td>Same</td>
<td>-0.07</td>
<td>-0.01</td>
<td>-0.08</td>
<td>-2.67</td>
</tr>
<tr>
<td>95910</td>
<td>Nerve conduction studies; 7-8 studies</td>
<td>2020</td>
<td>2.00</td>
<td>3.32</td>
<td>0.10</td>
<td>5.42</td>
<td>195.61</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2019</td>
<td>2.00</td>
<td>3.40</td>
<td>0.11</td>
<td>5.51</td>
<td>198.58</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change</td>
<td>Same</td>
<td>-0.08</td>
<td>-0.01</td>
<td>-0.09</td>
<td>-2.97</td>
</tr>
<tr>
<td>95911</td>
<td>Nerve conduction studies; 9-10 studies</td>
<td>2020</td>
<td>2.50</td>
<td>3.89</td>
<td>0.10</td>
<td>6.49</td>
<td>234.22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2019</td>
<td>2.50</td>
<td>3.99</td>
<td>0.13</td>
<td>6.62</td>
<td>238.58</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change</td>
<td>Same</td>
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<td>-0.03</td>
<td>-0.13</td>
<td>-4.36</td>
</tr>
<tr>
<td>95912</td>
<td>Nerve conduction studies; 11-12 studies</td>
<td>2020</td>
<td>3.00</td>
<td>4.30</td>
<td>0.13</td>
<td>7.34</td>
<td>268.13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2019</td>
<td>3.00</td>
<td>4.28</td>
<td>0.16</td>
<td>7.44</td>
<td>268.13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change</td>
<td>Same</td>
<td>0.02</td>
<td>-0.03</td>
<td>-0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>95913</td>
<td>Nerve conduction studies; 13 or more studies</td>
<td>2020</td>
<td>3.56</td>
<td>4.89</td>
<td>0.15</td>
<td>8.60</td>
<td>310.37</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2019</td>
<td>3.56</td>
<td>4.85</td>
<td>0.18</td>
<td>8.59</td>
<td>309.58</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change</td>
<td>Same</td>
<td>0.04</td>
<td>-0.03</td>
<td>0.01</td>
<td>0.79</td>
</tr>
</tbody>
</table>

*Continued on next page*
Conversion Factor. CMS finalized the conversion factor for Calendar Year (CY) 2020 at $36.0896. This is an increase of $0.0505 from 2019.

Evaluation and Management (E/M) Guidelines. CMS finalized its policy to utilize the CPT framework and RUC recommendations for E/M office visits. These changes will be implemented on January 1, 2021. Key elements of the office visit final rule include:

- Effective January 1, 2021, CMS will adopt the CPT guidelines to report office visits based on either medical decision making or physician time.
- CMS adopted the RUC work recommendations for the office visit codes. The work value increases represent $3 billion in redistributed spending, resulting in a 3% reduction in the conversion factor.
- The impact on specialty payments will be significant due to this redistribution with family medicine projected to see an increase of 12% and many specialties that do not perform office visits decreasing by 7% or more.
- CMS will implement an add-on payment for office visits for primary care and patients with serious or complex conditions.

Medicare Telehealth. CMS finalized its proposal to add three new telehealth codes, which describe a bundled monthly episode for care for treatment of opioid use disorders. This treatment includes care coordination, individual therapy, and group therapy and counseling.

Physician Enrollment. CMS finalized new authority to deny or revoke a physician’s enrollment if he or she has been subject to prior action from a state oversight board, federal or state health care program, Independent Review Organization (IRO) determination(s), or any other equivalent governmental body or program that oversees, regulates, or administers the provision of health care with underlying facts reflecting improper physician or other eligible professional conduct that led to patient harm. CMS excluded required participation in rehabilitation or mental/behavioral health programs and required abstinence from drugs or alcohol and random drug testing from the type of sanctions or disciplinary actions that could trigger a denial or revocation.

For a more detailed summary of the changes to RVUs for codes specific to EDX and NM medicine, members may log onto the Member-Only Coding Resources found on the AANEM website under Practice. For questions, please contact the AANEM policy department at policy@aanem.org.

2020 CPT Code Changes

Last September, the American Medical Association (AMA) released the 2020 CPT code changes that went into effect January 1, 2020. There were some minor changes and additions relevant to EDX and NM medicine. AANEM’s Online Coding Guide (available for purchase in the Marketplace at www.aanem.org) has been updated to reflect these changes. The 2020 Guide also includes new coding tips and updated frequently asked questions.

Changes that may interest AANEM members include:

- Bilateral Procedures: The guidelines for modifier 50, Bilateral Procedure, have been revised with instructions for reporting add-on procedures that are performed bilaterally. Previously, the instructions for reporting add-on procedures when performed bilaterally varied throughout the code set. For 2020, instructions for reporting add-on procedures when performed bilaterally has been standardized to indicate that add-on codes should be reported twice, instead of using modifier 50.
- Biofeedback: Code 90911 has been deleted and codes 90912 and 90913 have been added to report biofeedback training. Parenthetical notes have been added regarding the proper reporting of the new codes. Codes 90912 and 90913 describe 15-minute increments of one-on-one physician or other qualified health care professional contact with the patient for biofeedback training of the perineal muscles, anorectal sphincter, or urethral sphincter. EMG and/or manometry is included when performed.

For questions about upcoming code changes, please contact the Carrie Winter with the AANEM policy department at policy@aanem.org.
An Introductory Guide to Electrodiagnostic Billing

Matthew Grierson, MD; Carlo Milani, MD; Kevin Fitzpatrick, MD; Earl Craig, MD; Carrie Winter, RHIA, AANEM Health Policy Manager; Carolyn Millett, AAPM&R Senior Manager of Reimbursement & Regulatory Affairs

Introduction
EDX testing can be an important and helpful extension of the clinical evaluation for patients with peripheral and/or central nervous system disorders. EDX testing can be used to evaluate symptoms, achieve diagnostic clarity, and follow the clinical course of a disease process and response to treatment. Billing for EDX procedures can seem more complex than billing for other physician services; however, in this article, we offer a guide for appropriate EDX coding.

EDX testing typically includes both a nerve conduction study (NCS) and needle electromyography (EMG). However, in select cases, one may be performed without the other. The EMG codes are chosen based on whether or not NCS is also performed on the same day, so this will be discussed first.

Nerve Conduction Study Coding
Physicians are encouraged to test the fewest number of nerves needed to assess or diagnose a medical issue when performing NCS. The AANEM has developed a position statement to aid physicians in designing a NCS that tests a reasonable number of nerves to achieve a diagnosis in >90% of cases. The “Maximum Number of Studies” table in the position statement is designed to identify outlier trends and prevent abuse and overutilization. The guideline does not provide a “hard maximum.” However, physicians who differ more than 10% from established norms may be asked to provide additional information about the characteristics of their patient population or practice style to justify their billing.

There are seven main codes used to bill for NCSs. The correct code is selected based on the number of nerves tested as identified in Appendix J of the American Medical Association Current Procedural Terminology (CPT) codebook.

<table>
<thead>
<tr>
<th>Nerve Conduction Studies (Bill one code per patient per day:)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>95907</td>
</tr>
<tr>
<td>95908</td>
</tr>
<tr>
<td>95909</td>
</tr>
<tr>
<td>95910</td>
</tr>
<tr>
<td>95911</td>
</tr>
<tr>
<td>95912</td>
</tr>
<tr>
<td>95913</td>
</tr>
</tbody>
</table>

* See Appendix J in the AMA CPT codebook for the list of nerves that may be counted

Appendix J is described in further detail below and has a list of distinct nerves that can be counted for NCSs. Each nerve qualifies as a distinct nerve in your sum for billing NCSs for a given patient on a single day. For the purposes of coding, a single nerve is defined as a sensory nerve, a motor (with or without F waves) nerve, a mixed nerve, or an H-reflex test. Each nerve is counted only once when multiple sites on the same nerve are tested, such as with “inching” studies.

It should be noted that most nerves have a contralateral counterpart and bilateral testing is often necessary for comparison purposes. The nerve on each side should be counted separately toward the total. Multiple NCS CPT codes cannot be billed for a given patient on a single day.

Appendix J
Appendix J found in the AMA CPT codebook is a list of individual nerves created for the purposes of billing NCSs. The list identifies each individual sensory, motor, or mixed nerve, or nerve segment that can be counted separately toward the NCS total. Each line of Appendix J’s list of nerves refers to a different nerve and should be counted as an individual unit. For example, the ulnar motor nerve has 4 different nerve segments that can each be counted separately towards the total (i.e. ulnar motor nerve to the abductor digiti minimi, ulnar motor nerve to the palmar interosseous, ulnar motor nerve to the first dorsal interosseous, ulnar motor nerve to the flexor carpi ulnaris).

Electromyography Coding
EMG coding is generally based on the number of limbs examined (or, in certain cases, specific paraspinal muscle levels), but the choice of which group of CPT codes to use for billing depends on whether a NCS is also performed on the same day.

For EMG studies performed with a NCS on the same day, one should bill using CPT codes 95885 (limited study), 95886 (complete study), or 95887 (non-extremity study). These are considered “add-on” codes, and may not be billed independent of a NCS code. These are billed in units based on the number of extremities tested. One unit includes all muscles tested in a particular extremity, with or without the relevant paraspinal muscles. A complete study of a limb should include at least 5 muscles that are innervated by 3 or more peripheral nerves (e.g. radial, ulnar, median, tibial, peroneal, femoral) or 4 or more spinal levels. In some
instances, a complete study may be billed without the relevant paraspinals muscles when this testing is contraindicated or not feasible and the reasons are appropriately documented. A non-extremity code can be billed when evaluating muscles innervated by the cranial nerves (e.g. genioglossus, laryngeal muscles), the phrenic nerve (i.e. diaphragm), paraspinal muscles tested independent of limb testing, abdominal muscles, or other muscles not associated with an extremity. Codes 95885 (limited study) and 95887 (non-extremity study) can be billed in multiple units, although some carriers may deny such claims unless you list multiple units as separate line items.

When there is no NCS performed on the same day, one should bill using CPT codes 95860-95864 (complete studies, based on number of limbs evaluated), 95870 (limited study), 95865 (larynx), 95866 (hemidiaphragm), 95867 (unilateral muscles supplied by cranial nerves), 95868 (bilateral muscles supplied by cranial nerves), or 95869 (thoracic paraspinals). Only 1 unit of service of codes 95860-95864 may be reported per patient for a given examination.

### Needle EMG

<table>
<thead>
<tr>
<th>NCS performed on same day</th>
<th>No NCS performed, may only bill each code once</th>
</tr>
</thead>
<tbody>
<tr>
<td>95885</td>
<td>Limited study</td>
</tr>
<tr>
<td></td>
<td>• Bill one unit per limb</td>
</tr>
<tr>
<td></td>
<td>• Less than 5 muscles</td>
</tr>
<tr>
<td></td>
<td>• Includes related paraspinals</td>
</tr>
<tr>
<td>95886</td>
<td>Complete study</td>
</tr>
<tr>
<td></td>
<td>• Five or more muscles innervated by 3+ nerves, with or without relevant paraspinals muscles</td>
</tr>
<tr>
<td></td>
<td>• Or 4+ spinal levels</td>
</tr>
<tr>
<td></td>
<td>Bill 1 unit for each limb</td>
</tr>
<tr>
<td>95887</td>
<td>Non-extremity (e.g. cranial nerve or axial) muscle(s)</td>
</tr>
<tr>
<td></td>
<td>Non-extremities</td>
</tr>
<tr>
<td></td>
<td>Larynx</td>
</tr>
<tr>
<td></td>
<td>Hemidiaphragm</td>
</tr>
<tr>
<td></td>
<td>Cranial nerve muscle (unilateral)</td>
</tr>
<tr>
<td></td>
<td>Cranial nerve muscle (bilateral)</td>
</tr>
<tr>
<td></td>
<td>Thoracic paraspinals (not T1-2)</td>
</tr>
</tbody>
</table>

### Case Studies

This section offers two sample case studies to demonstrate how to put the coding guidance into practice.

#### Case Study 1

A 62-year-old man with history of cervical fusion is referred for EDX testing with 2 months of symptoms that started without an inciting event. He reports painless weakness of the left ankle dorsiflexors. Over the past two months, he has had progressive difficulty walking and describes a left foot slap with intermittent tripping. His primary care physician referred the patient for further evaluation with EDX testing.

On examination, the patient has 4/5 weakness with left ankle dorsiflexion. Upper limbs are notable for mild weakness and atrophy of the right deltoid muscle. Sensory exam is intact. Deep tendon reflexes are 3+ symmetric in the upper limbs, 2+ symmetric in the lower limbs, with up-going plantar response and clonus on the right. Dural tension signs are absent in the lower limbs. The following EDX studies were performed:

Continued on next page
Sensory NCS
1. Left sural sensory
2. Left superficial fibular sensory

Left lower limb EMG
The left lower limb was initially examined with needle electromyography, evaluating the following:

1. Tibialis anterior (TA)
2. Fibularis longus
3. Gastrocnemius
4. Tibialis posterior
5. Extensor hallucis longus (EHL)
6. Vastus medialis (VM)
7. Adductor longus
8. Lumbar paraspinals

All of the muscles examined in the left leg showed increased insertional activity with prominent positive sharp waves and fibrillation potentials and also fasciculations. In addition, they all demonstrated chronic motor unit changes, including polyphasia, increased duration, and increased amplitude.

Motor NCS
1. Left fibular motor to extensor digitorum brevis (including F-wave)
2. Left tibial motor to abductor hallucis
3. Bilateral tibial H-reflexes

Right upper limb, right lower limb, and non-extremity EMG
Based on the results from the left leg, along with a history and examination that suggested a more global process, additional testing was performed in the right upper and lower limbs.

Upper Limb
1. Deltoid
2. Biceps
3. Brachioradialis
4. Infraspinatus
5. Pronator teres
6. Triceps

Lower Limb
1. TA
2. VM

The results revealed similar involvement in the right arm and leg, bilateral thoracic paraspinals, and the genioglossus muscle confirming the suspicion for motor neuron disease.

Case Study 1: Correct Billing

NCs; 5-6 studies
Rationale: The total of nerves studied is 6. Note that the F-wave does not count as an additional study, but bilateral H reflexes do count as 2 separate studies.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Code</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle EMG, each extremity, with related paraspinal areas, when performed, done with nerve conduction, amplitude and latency/velocity study; complete, 5 or more muscles studied, innervated by three or more nerves or four or more spinal levels</td>
<td>95886 x 2 units</td>
<td>(Left leg, Right arm)</td>
</tr>
<tr>
<td>Needle EMG, each extremity, with related paraspinal areas, when performed, done with nerve conduction, amplitude and latency/velocity study; limited</td>
<td>95885 with modifier 59</td>
<td></td>
</tr>
<tr>
<td>Needle EMG, non-extremity (cranial nerve or axial) muscle(s) done with nerve conduction, amplitude and latency/velocity study</td>
<td>95887 x 2</td>
<td></td>
</tr>
</tbody>
</table>

Diagnosis: Amyotrophic lateral sclerosis

Continued on next page
Case Study 2
A 32-year-old woman presents for EDX evaluation on referral from her family physician. Her symptoms started mildly 6 months ago without inciting event and have been getting progressively worse the past 2 months. She reports pain and numbness in the left arm and hand with radiation to the ring and little fingers. She denies weakness.

Examination reveals no swelling, atrophy, or skin changes. Neurovascular exam is fully intact throughout the bilateral upper limbs. Ulnar entrapment neuropathy, C8 radiculopathy, and thoracic outlet syndrome are highest on the differential diagnosis for pain and numbness in the ring and little finger.

The EDX evaluation is focused to evaluate the patient for the most likely possibilities as an extension of the history and physical examination but can be expanded if abnormalities suggest other issues.

Sensory NCS
1. Left median from palm to index finger
2. Left median from wrist to index finger
3. Left ulnar from wrist to the short finger
4. Right median from palm to index finger (comparison)
5. Right median from wrist to index finger (comparison)
6. Right ulnar from wrist to the short finger (comparison)

Motor NCS
1. Left median motor to abductor pollicis brevis (APB)
2. Left ulnar motor to abductor digit minimi

NCS are notable for conduction block of the ulnar nerve at the elbow.

Left Upper Limb EMG
The left upper limb was examined with needle electromyography evaluating the following:
1. First dorsal interosseus (FDI)
2. APB
3. Flexor carpi ulnaris (FCU)
4. Biceps
5. Triceps
6. Deltoid
7. Cervical paraspinal muscles

Needle EMG was performed on the left upper limb and included evaluation of the FDI, APB, FCU, biceps, triceps, deltoid, and the upper, middle and lower cervical paraspinal muscles. All muscles tested showed normal insertional activity, normal recruitment, and normal motor unit morphology.

Case Study 2: Correct Billing

<table>
<thead>
<tr>
<th>Sensory NCS</th>
<th>Motor NCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-6 studies</td>
<td></td>
</tr>
</tbody>
</table>

Rationale: Although 8 tests were performed, the two median studies to the index finger only count once on either side since they are different segments along the same named nerve segment from Appendix J.

<table>
<thead>
<tr>
<th>Needle EMG, each extremity, with related paraspinal areas, when performed, done with nerve conduction, amplitude and latency/velocity study; complete, five or more muscles studied, innervated by 3 or more nerves or 4 or more spinal levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis: Ulnar neuropathy at the elbow</td>
</tr>
</tbody>
</table>


For coding and billing questions, please contact the AANEM policy department at policy@aanem.org.
Congratulations to ABEM’s Newest Certified Nerve Conduction Technologists!

The following technologists successfully passed the November 2019 Certified Nerve Conduction Technologist (CNCT) Examination.

- Melissa Anderson, CNCT
- Stephen C. Beck, CNCT
- Michelle Dory, CNCT
- Vianka Gil Lopez, CNCT
- Danielle Heaton, CNCT
- Ong Hui Hui, CNCT
- Matt Johnson, CNCT
- Wahby Khater, CNCT
- Michael Menard, CNCT
- Jody A. Nadeau, CNCT
- Erica Norton, CNCT
- Otto Trapaga Quincoses, CNCT
- Tan Yam Eng, CNCT

ABEM Certification Opportunities for 2020-2021

Certified Nerve Conduction Technologist (CNCT)

- Spring Exam
  - Registration Opened February 1, 2020
  - Registration Deadline: March 31, 2020
  - Exam: April 30-May 2, 2020

- Neuromuscular Ultrasound Certificate of Added Qualification
  - Registration Opens: June 1, 2020
  - Registration Deadline: July 31, 2020
  - Exam: August 31-September 4, 2020

- Maintenance of Certification Program (MOCP) Exam
  - Registration Opens: August 1, 2020
  - Registration Deadline: September 30, 2020
  - Exam: November 19-21, 2020

Certified Nerve Conduction Technologist (CNCT)

- Fall Exam
  - Registration Opens: August 1, 2020
  - Registration Deadline: September 30, 2020
  - Exam: November 5-7, 2020

ABEM Initial Certification Exam

- Registration Opens: October 1, 2020
- Registration Deadline: November 30, 2020
- Exam: March 10-13, 2021

Dates are subject to change. Visit www.abemexam.org for more information and official exam dates.
Eligibility Requirements
Candidates must meet eligibility requirements for the year in which the examination is taken, regardless of prior approval. Eligibility does not automatically carry over from year to year.

Candidates must
• hold a valid, unrestricted license to practice medicine;
• be board certified by either the ABPN, ABPMR, AOPN, AOPMR or the Canadian equivalent;
• be board certified by ABEM; and
• have conducted and/or interpreted 150 neuromuscular ultrasound examinations on suitable patients over the past 36 months, with 15 or fewer being for needle guidance.

Further Details
• The NM US CAQ is a one-time exam. Once a physician obtains this CAQ, no maintenance of certification is required.
• Primary ABEM certification must be maintained in order to maintain the CAQ.
• Interested in taking the NM US CAQ Exam? An interest form is available at www.abemexam.org.

ABEM Offers US Certificate of Added Qualification

The American Board of Electrodiagnostic Medicine (ABEM) welcomes its first class of those who passed the Neuromuscular Ultrasound Certificate of Added Qualification (NM US CAQ). This is being offered as an additional certification available to ABEM certified physicians.

The following physicians successfully passed the NM US CAQ:

• Arthur Androkites, MD
• Andrea Boon, MD
• Michael Cartwright, MD
• Dale Colorado, DO, MPH
• Vincent DeOrchis, MS, MD
• Kunal Desai, MD
• Xiaoli Dong, MD
• Lester Duplechan, MD
• Colin Franz, MD, PhD
• Rocío Carolina García Santibáñez, MD
• Christopher Geiger, DO
• Steven Herskovitz, MD
• Vasudeva Iyer, MD, DM
• Stephen Johnson, MD, MS
• Jongyeol Kim, MD, MS
• Sang Beom Kim, MD
• Mary Kneiser, MD
• Monika Krzesniak-Swinarska, MD
• Hani Kushlaf, MD
• Patrick Kwon, MD
• Eric Mittelmann, MD
• Daniel Phillips, MD
• David Preston, MD
• Sami Saba, MD
• Sarada Sakamuri, MD
• Katalin Scherer, MD
• Elena Shanina, MD, PhD
• Steven Shook, MD
• Eric Sorenson, MD
• Jeffrey Strakowski, MD
• Bum Chun Suh, MD
• Thananan Thammongkolchai, MD
• Joel Torres, MD
• Joy Vijayan, MD
• John Watson, MD, MS
• Stephen Wheat, MD
• Craig Zaidman, MD
• Elina Zakin, MD

“I am excited about the initiative ABEM has taken to establish a certificate of added qualification (CAQ) for neuromuscular ultrasound,” said Michael S. Cartwright, MD, and chair of the ABEM’S NM US CAQ committee. “Neuromuscular ultrasound is an important complement to electrodiagnostic testing and has a growing presence in electrodiagnostic laboratories worldwide. As more training programs incorporate neuromuscular ultrasound, use of this powerful diagnostic tool will continue to grow. By obtaining this CAQ, physicians can demonstrate their knowledge and skill in this technique.”

Questions?
Please contact the ABEM office at 507.288.0100.
Labs Accredited or Reaccredited in 2019

AANEM would like to recognize the following labs for earning their accreditation or reaccreditation in 2019. All labs listed below completed accreditation or reaccreditation prior to December 1, 2019. We are happy to report that in 2019, every lab either accredited or reaccredited with exemplary status!

Accredited With Exemplary Status
Northwell Health Partners at Lenox Hill Neuromuscular Laboratory
University of Rochester Department of Physical Medicine and Rehabilitation
Bienville Orthopaedic Specialist Neurodiagnostic Laboratory
Central New York Physiatry, P.C.
MossRehab
Scripps Clinic Torrey Pines EMG laboratory
Kimberly J. Mercurio, M.D. at Neurological Surgery and Spine Surgery
Neuroscience Institute at Northwell Health
Redding Spine and Sports Medicine
Neurological Institute of New Jersey
UConn Health Neurodiagnostic Laboratory
Mount Auburn Hospital EMG Lab

Reaccredited With Exemplary Status
Mount Vernon Rehabilitation Medicine Associates
Geisinger Medical Center
Hospital of the University of Pennsylvania, Department of Neurology
Trinity Health Of New England Medical Group, MA
M Health at the University Minnesota Electrodiagnostic Laboratory
Vincent Di Carlo, M.D. & Associates, P.A. DBA Neurology & Physical Therapy Centers of Tampa Bay
St. Josephs Outpatient EMG Lab

To learn more about AANEM’s Electrodiagnostic Laboratory Accreditation Program, visit www.aanem.org/Accreditation.

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2019 Lab Accreditation by the Numbers

- **43** States
- **215** Main Labs
- **369** Labs (including satellites)
- **285** Techs in Accredited Labs
- **617** Physicians in Accredited Labs
At the 2019 AANEM Annual Meeting in Austin, Texas, the AANEM Foundation for Research & Education announced its name change to the American Neuromuscular Foundation (ANF).

“The Board and the staff are excited about this new name and look. We are planning to grow the American Neuromuscular Foundation into a strong leader of neuromuscular research,” said Shelly Jones, Foundation Director. The AANEM provides for all the expenses of the Foundation, so 100% of all donations are used to fund research or provide education to researchers. The AANEM is also a strong supporter of the Foundation, transferring over $3 million to the Foundation in 2016 to help ensure the future of research funding.

“There were attendees at the annual meeting that thought the AANEM had changed its name too,” said Shirlyn Adkins, AANEM Executive Director. “This is not the case. Only the Foundation’s name has changed. The ANF is separately incorporated from the AANEM and is able to receive tax-deductible donations.”

Enjoy this photo gallery featuring the group selfie with 2018-19 President Dr. Anthony Chiodo and many other AANEM members flaunting their new orange Foundation shirts!

Be sure to donate to the Foundation to help us STRENGTHEN the global effort to CURE neuromuscular disease. Visit www.neuromuscularfoundation.org for more information.
One of the American Neuromuscular Foundation’s (ANF) newest development grant award recipients, Dr. Michelle Kvalsund, was inspired to apply for the ANF grant because of her experience working as a neurologist in Zambia. She wanted to pursue research on acute flaccid paralysis (AFP), a sudden onset of weakness or paralysis of the limbs over just hours or days.

“As an early career physician scientist, this award appeared to be a perfect fit to achieve my career goals of becoming an independent physician scientist with research interests focused around polyneuropathies,” she said.

Development grants are intended to recruit a generation of talented physicians and scientists to help launch research into muscle and nerve disorders. Dr. Kvalsund’s work certainly fits the foundation’s mission.

Dr. Kvalsund’s grant proposal is titled “Prevalence and Spectrum of Adult Acute Flaccid Paralysis in Zambia.” The project will involve a prospective period prevalence study of AFP among adult admissions to the University Teaching Hospital in Lusaka, Zambia. AFP has many causes and can be life-threatening by causing weakness of respiratory muscles. Further breakthroughs and discoveries regarding this phenomenon could have global implications, as recent pandemics such as West Nile Virus and Zika virus are associated with AFP, and their origins can be traced to sub-Saharan Africa.

“I have found these disorders to be common among patients admitted to the University Teaching Hospital in Lusaka,” Dr. Kvalsund said of her travels. “These disorders present a diagnostic challenge owing to the broad range of toxic, nutritional, infectious, and para-infectious conditions with similar clinical presentations and limited access to diagnostic testing. I recognized a need for improving early diagnosis to direct better management and reduce the morbidity and mortality I was observing.”

“I hope that the knowledge gained might lead to new scientific discoveries that can generate improvements in the care of patients around the globe, both through opportunities to improve surveillance and through the study of acute flaccid paralysis in a region where very little is known.”

The grant includes complimentary registration to an AANEM Annual Meeting (along with a free membership during the grant year) and travel costs to attend the meeting. Dr. Kvalsund will present the finds of her research at an upcoming AANEM Annual Meeting, once her project is complete. AANEM funds the ANF’s operations, allowing all ANF donations to go toward funding research and education projects like the one proposed by Dr. Kvalsund.

Dr. Kvalsund completed her neurology residency at Vanderbilt University Medical Center in 2013. She returned to her medical school alma mater, Michigan State, as a clinical instructor and neuropsychiatry fellow in the MSU International Neurologic & Psychiatric Epidemiology Program. She divides her time between East Lansing, Michigan, and Zambia, where she already conducts research and serves as an honorary lecturer within the University of Zambia School of Medicine.

“She is observing and documenting things that no one else has seen,” wrote Dr. Michael Andary, Program Director, ACGME Physical Medicine and Rehabilitation Residency at MSU. “She is doing research and clinical work that very few, if any, Western trained neurologists have seen. I believe that much of what Dr. Kvalsund is observing, reporting, and doing research on is original, unknown, and poorly understood.”

The goal of her forthcoming work will be to “improve clinical care of these highly disabling and often life-threatening conditions in this setting.”

“I hope that the knowledge gained might lead to new scientific discoveries that can generate improvements in the care of patients around the globe, both through opportunities to improve surveillance and through the study of acute flaccid paralysis in a region where very little is known.”

The ANF is able to finance research projects through its $3 million endowment from the AANEM and generous individual donations, allowing the foundation to fund projects every year. Dr. Kvalsund’s work will be funded for 2 years, hopefully providing actionable insights for other scientists.
Dr. Mathula Thangarajh Hopes to Share Insights on Duchenne Muscular Dystrophy

Dr. Mathula Thangarajh, Assistant Professor of Neurology at Virginia Commonwealth University, was chosen for an American Neuromuscular Foundation Development Grant for her research proposal regarding “Cognition in Duchenne Muscular Dystrophy.” Dr. Thangarajh is dual board-certified in neurology with special qualifications in child neurology and NM medicine.

The disease being studied, known as duchenne muscular dystrophy (DMD), is the most common type of muscular dystrophy, specifically in young children. According to Dr. Thangarajh’s proposal, it affects 1 in 3,500 boys. It can cause speech delay, learning difficulties, and attention-hyperactivity. “Of particular importance,” she wrote, “core cognitive skills are often weak in DMD.

Some of the core cognitive skills are potential targets for intervention.”

“Cognition has been identified as the number one area of unmet need in NM diseases. It also mirrors my clinical experience that, despite parents reporting a high burden of cognitive problems in this condition, medical teams do not screen effectively for these problems,” Dr. Thangarajh said of her research. “My project will quantify the magnitude of cognitive problems in boys with DMD using a technology-based platform that will allow us to screen and triage for these problems efficiently in a busy clinic setting.”

The grant includes complimentary registration to the AANEM Annual Meeting in Orlando, Florida in October 2020 (along with a free membership during the grant year). Dr. Thangarajh’s development grant will help fund this work for an entire year.

An article titled “The NIH Toolbox for Cognitive Surveillance in Duchenne Muscular Dystrophy” was published in the scientific journal Annals of Clinical and Translational Neurology as a result of this research.

Among those endorsing her candidacy for the ANF Development Grant were Kristina K. Hardy, PhD and Associate Professor, Departments of Psychiatry, Behavioral Science and Pediatrics at George Washington University School of Medicine and Kathryn Wagner, MD, PhD and Director, Center for Genetic Muscle Disorders, Kennedy Krieger Institute and Professor of Neurology at Johns Hopkins School of Medicine. In a co-written note, they said “Mathula Thangarajh is an outstanding physician-scientist and this proposal has the potential for high-impact in the neuromuscular scientific community, and is also directly relevant for personalized model of care for children with muscular dystrophy.”

This study aims to shed light on DMD and some of the more controversial aspects surrounding its diagnosis and effects on patients, including whether “cognitive challenges are static or progressive in nature.” Dr. Thangarajh will present the findings of her research at an upcoming AANEM Annual Meeting.

American Neuromuscular Foundation
Strengthing the global effort to CURE neuromuscular desease

Vision
The ANF will become recognized leader in NM research

Focus
• Increase awareness
• Increase funding sources
• Increase research funding
Dr. Karissa Gable Works to Further CIDP Knowledge With Research Study

Chronic inflammatory demyelinating polyneuropathy (CIDP) Clinical Research Fellowship recipient, Dr. Karissa Gable, is working to define the pattern of immune regulatory cell pathology in CIDP. ANF clinical research fellowships are intended to recruit a generation of talented physicians and scientists to help launch research into muscle and nerve disorders. Dr. Gable’s particular interest in autoimmune neuromuscular medicine, said Dr. Richard O’Brien, Professor and Chair of the Department of Neurology at Duke. “She has been involved in laying the foundations of developing our neuromuscular biorepository program and contributing to our neuromuscular database that will enable our group to pursue a wide variety of research projects in neuromuscular immunology.”

The fellowship includes complimentary registration to an upcoming AANEM Annual Meeting (along with a free membership during the grant year) and travel costs to attend the meeting, where she will present her findings.

“I came across this fellowship opportunity at the perfect time when results from some preliminary data showed significant promise in further exploring the immune mechanisms of CIDP, and so decided to apply,” she said. “I have always been impressed with the dedication the ANF and AANEM have to promoting quality education, advocacy, and research.”

Dr. Gable’s development grant was made possible thanks to a grant from CSL Behring to the ANF. Her work will be funded for an entire year, hopefully providing actionable insight for other researchers.

Donate to Further Scientific Research in NM and EDX Medicine

The American Neuromuscular Foundation is funding incredible research projects and we want to keep that momentum going. Your donation to the American Neuromuscular Foundation helps us fund future development grants and clinical research fellowships in NM and EDX medicine. So many patients depend on this research and are hoping for breakthrough treatments and cures. Give to a cause important to you. Donate at www.neuromuscularfoundation.org/donate.
New AANEM Early Career Speaker Lectureship Award to Celebrate Legacy of Surinderjit Singh

New for 2020, the AANEM Annual Meeting plenary will include a speaker who is the winner of the Surinderjit Singh Young Lectureship Award. This lecture will honor long-time AANEM member Dr. Surinderjit Singh. The lectureship topic preferably will align with the theme of the 2020 Orlando meeting, “Emergent Therapies in Neuromuscular Diseases.” Other plenary speakers will review the current and future landscape in treatments of important neuromuscular diseases such as SMA, ALS, muscular dystrophy and myasthenia gravis.

This award was created after Dr. Singh’s wife, Jeena, chose to donate $50,000 to the American Neuromuscular Foundation in her husband’s honor, thus leaving a legacy of giving back to the field of medicine that gave so much to him. “We are honored to put this gift to good use, and involve the next generation of neurologists and physiatrists who might see how valuable the AANEM could be to their careers, just like Dr. Singh did,” said AANEM Executive Director Shirlyn Adkins, JD.

The award winner will receive a $1,000 honorarium, airfare ($500 U.S., $1,000 non-U.S.), and 2 days hotel accommodations. Candidates to speak must be within 10 years of finishing a residency or fellowship.

The application period for the 2020 Lectureship Award recently closed and Dr. So received a number of high-quality applications. Stay tuned as we announce the first ever winner of this award in March! We encourage young physicians within 10 years of finishing a residency or fellowship to consider applying next year.

About Dr. Surinderjit Singh
Surinderjit Singh, MD, MS was a member of AANEM from 1976 until the time of his death in 2018; most of his activity with the association was in the 1980s and 1990s. An American Board of Electrodiagnostic Medicine (ABEM) oral examiner from 1983-1998, Dr. Singh enjoyed the opportunity to join his colleagues in Chicago, IL. He served on several committees including the Relative Value Scale Committee, Professional Standards (later Professional Practice), the Quality Assurance Committee, and the Education Committee. He loved, among many things, both electrodiagnostic medicine and cricket.

Born in Malaysia in 1944, Dr. Singh was educated in India before completing his studies at the Universities of Wisconsin and Washington. He was then commissioned as the first Sikh Captain in the U.S. Army Medical Corps in 1973. He rose through the ranks to end as Chief of the Physical Medicine Department at Madigan Army Medical Center, retiring as a Lt. Colonel in 1980.

Later that year, he founded Electrodiagnosis & Rehabilitation Associates of Tacoma, WA, a private medical practice specializing in electrodiagnostic medicine. By 1992 it was the largest private physiatry practice in the Pacific Northwest, helping thousands of patients through their rehabilitation from injury and pain. He served as President and CEO of this organization until his retirement in 2001. He also served as medical director of the physical medicine and rehabilitation departments at both St. Joseph’s Medical Center and Tacoma General Hospital during his career. An avid cricketer, Dr. Singh played the sport all his life, the majority of which was spent with the Seattle Cricket Club. During his cricket playing years, he represented the U.S. on the National Cricket Team and was invited to play around the world. He spent his retirement traveling to as many countries across the world as he could with his wife and partner of 46 years, Jeena.

Jeena Singh was motivated to carry on Dr. Singh’s legacy by making this generous donation, providing generations of young physicians new opportunities to shine.

Easy Ways You Can Make a Lasting Impact and Help Cure NM Diseases

1) Give Through Your Will or Trust.
One of the easiest ways to support the ANF is to leave a gift in your will. You can name a specific dollar amount, or a percentage of what is left, after you leave specific gifts for family and friends. Simply add a sentence to your will stating “I give and bequeath to the American Neuromuscular Foundation, located in Rochester, MN, the sum of $____.”

2) Give Through Your Retirement Fund.
Another simple method is donating through your retirement account – just designate the ANF as the beneficiary of your pension plan, IRA, 401(k) or self-employed plan. This could be a great way to reduce your tax liability.

3) Give in Honor or in Memory of Someone.
Any gift to the ANF can be a tribute to yourself, a mentor, or other loved one like this lectureship.

If you would like help making a gift through your will, a retirement plan, or any other form of donation, contact Shirlyn Adkins, JD, AANEM Executive Director at sadkins@aanem.org
Eric Sogomonian doesn’t let much keep him down. Living in a house with stairs. All the negativity in the world. Being misdiagnosed with muscular myopathy for 2 decades.

The 22-year-old Staten Island native, who goes by Eric Sogo, was told he had muscular myopathy when he was a toddler. He was diagnosed with limb-girdle muscular dystrophy (LGMD) about 2 years ago when a doctor conducted some more in-depth testing.

“Basically, my legs cramp up a lot and they get stiff,” he says. “When the winter weather arrives, my legs get even more rigid. If I can, I stay home – either in my bed or the living room. I have weakness in my arms and legs, as well as a stuttering effect when I talk. Many people who I talk to think that I have an accent, but most of that comes from the LGMD.”

Eric used to like jogging, but it’s a bit of a risk now. He would run over the same crack in the sidewalk and fall, hit the same spot on his leg and reopen a continuously healing cut or scrape. Physical and occupational therapy has helped him improve his walking, and get up and down the stairs of his home, but he'll take the elevator wherever he can.

Unfortunately, Eric also has to watch his weight more than simply just to stay in shape.

“With my diet, my doctor has told me not to go over 150 pounds because if I do, my legs will collapse. They won’t be able to hold my body weight.”

Eric is one of millions who deal with the debilitating effects of NM disease. Despite his hardships, Eric continues to push forward with dreams and aspirations. His social media slogan, #DeleteTheWordCant, is an ethos by which he tries to live his life in every way.

Eric takes no medications for his disease, and he continues to workout as safely as he can. Walking, taking the stairs, and even swimming when the family goes to Florida for vacation.

He also takes the occasional 25-mile stroll across Staten Island. Eric made local headlines in the summer of 2019 by walking from the St. George Ferry Terminal to the Staten Island Mall to raise awareness for muscular dystrophy. He topped that 6-hour trek a few months later, walking for 12 hours and more than 25 miles from the terminal to Conference House Park on Staten Island.

Eric has naturally generated a bit of a social media following, which he hopes will help him fulfill his dream of being a motivational speaker and raising funds through his nonprofit foundation, which donates its proceeds to causes like the American Neuromuscular Foundation. His foundation was registered with New York State on Dec. 20, 2019. He has already given out slogan-embossed wristbands including to the stars of The Illusionists. Eric also has walks planned for the future, including one open to the public which is going to be around College of Staten Island (where he graduated) and an ultimate walk around the 5 boroughs of New York.

When he was originally diagnosed with LGMD, Eric said their doctor told his family the chances of him living a normal lifespan were “against him.” But for Eric, #DeleteTheWordCant is more than just a slogan.

“Take the word ‘can’t’ out of your vocabulary and either replace it with another word as to why you are unable to do something (a more defined and rational explanation), or get rid of that mindset altogether and say that you CAN,” he says. “New experiences are always a good thing. You can meet new people and learn new things and at the end of the day, the world will be a more positive place.”

He recalled the bullying he went through as a kid, being someone who was living with a disease that made him move

Continued on next page
differently. This is the negativity that he aims to turn into a positive force.

“All my life, people have told me I can’t do this or that. Graduate high school, college, or find a girlfriend. I’ve accomplished all of those things and a lot more.”

The walks across Staten Island represented Eric washing away the negativity, and letting people around the world know that they can accomplish their dreams, even with NM disease. He chooses to focus on the positivity in his life, and all the support he’s received since he began spreading his message.

“At the end of the day, it really doesn’t matter if you’re disabled, it’s really just a mindset.”

He believes that raising money for research into treatments and cures for NM disease has never been more important.

“It’s very important to donate, because technology is advancing faster than ever before. There’s more information available and better research being done,” Eric says. “People can have a better understanding of the overall problems when it comes to genetics.”

One researcher who has dedicated their life to fighting NM disease is Monkel Lek, PhD. A recent project of his was jointly funded by the American Neuromuscular Foundation and Muscular Dystrophy Association. The mission of his research was to help improve the diagnosis of NM diseases.

Dr. Lek’s motivation was personal – he was also diagnosed with LGMD. “At the time there was very limited information on my disease, which is why it was so hard to find the disease-causing gene and if there was any treatment,” Dr. Lek said. “I went back to university and then did research to contribute to all 3 of these areas. It took over a decade to find my disease causing gene, TCAP/Telethonin, and I didn’t want other patients to wait that long as I can empathize with the frustration of not knowing.”

For Eric Sogo, he hopes to bring his message of positivity to those who need it, and be an ally of organizations like the American Neuromuscular Foundation, which continues to need funding to drive more research.

“The more people that see the problems the muscular dystrophy community faces, the more donations will come, and the closer we’ll be to finding the greatest solution of all – the cure. But until we get there, more procedures, equipment and advancements are needed,” Eric says.

Please donate to the ANF to help provide patients like Eric with hope for a cure. Even a small donation can make a big difference.

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Michael Dolny – Making it Work With Duchenne’s Muscular Dystrophy

Michael Dolny is an easygoing, 30-year-old man who loves sports. A Southwest Florida resident, Michael could tell you all there is to know about hockey, football, or NASCAR. He loves attending Florida Everblades hockey games in nearby Estero, Florida. He hopes to one day use his vast sports knowledge – and a clear, stoic, made-for-radio voice – as a play-by-play commentator.

Michael also happens to live with Duchenne’s muscular dystrophy (DMD), an inherited disorder of progressive muscular weakness.

“I was formally diagnosed in 1997 when they did a muscle biopsy at the University of Miami,” Michael says. “My mom was careful not to tell me too much as to not overwhelm me.”

He admits it does slow him down a bit.

“I started realizing it as a kid in physical education class. I wondered why I couldn’t run as fast as the other kids,” he says. “But I didn’t let it stop me.”

Michael’s mother is a nurse, and she would speak to his school nurses to make sure they could take care of his needs. He’d get help with stretching to prevent sores, and he even recalls one truly great nurse, Frank, who offered to speak to his classmates so they understood what DMD was, and how it affected Michael’s life. His mother continued to help as he grew up, but she was beset by her own health issues stemming from a car accident – she was hit by a drunk driver on her way to help one of her patients.

As a kid, Michael still wanted to try new things, and didn’t let his diagnosis bother him too much. He still took part in sports, playing goalie in games where he could participate in a role that suited his physical skill set, like scooter ball. The object of that game is to continually pass a ball (the size of a softball) down the court and attempt to score a goal against the opposing team.

“I was actually pretty good,” he says.

But as he grew older, the symptoms of DMD continued to manifest themselves. He now gets around in a wheelchair. He experiences neck stiffness, inflammation, and headaches, and other complications of DMD.

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“Sometimes the small movements are the hardest,” Michael says. “Some days, moving my arm a few inches to reach the door is difficult. It really inhibits your movement a lot.”

He remembers being around middle school age, coming to terms with what was happening to his body.

“I felt like I had no choice but to accept it...there’s always moments where people would ask about my wheelchair. Sometimes people are afraid to ask you questions because they think you’re different.”

Michael sometimes views his wheelchair as an opportunity to connect.

“I always try to answer people’s questions and just be approachable about it,” he says. “At the end of the day, it’s just a device for mobility. It doesn’t make me different from anybody else.”

Luckily, Michael’s needs have been met over the last few years through local services that help people with disabilities. He started getting home health aide services in 2013. He says it can be a struggle to find a consistent caregiver. Sometimes they can’t suit your schedule, or it just doesn’t work out. Michael finally settled on an agency that gave him a caregiver named Owen. It’s been working out great for nearly 2 years now.

“It’s a big deal to have that continuity, getting to that point where you don’t have to say anything,” Michael says. “We’ve got a routine going – he knows what I need.”

Still, there can be difficult days. Michael describes living with DMD as living life in “slow motion.”

“I do try to stay positive, but it’s hard sometimes. Something as simple as going to the bathroom, it can take 10 minutes when you’re in a chair,” he says. He tries to look at the bright side of his situation. “It teaches you patience. The condition dictates almost every move you make. You’re constantly at the mercy of your disease.”

He believes that putting these scenarios into context for other people might motivate them to donate to causes like the American Neuromuscular Foundation. The foundation funds research projects that are helping to identify treatments and cures for NM diseases like DMD.

Mathula Thangarajh, MD, is an American Neuromuscular Foundation Development Grant Award recipient. Her project, which focuses on understanding cognition in DMD, was funded through this yearlong development grant. “Mitigating cognitive co-morbidity in boys with DMD will help them attain their full human potential and improve their quality of life,” she wrote in her project summary. “There is an urgency to address this unmet medical need, as the life-expectancy of boys with DMD has increased, and it is our collective responsibility to help emerging adults with DMD more capably meet their social, emotional, and financial milestones of adulthood.”

With advances in treatment, as Dr. Thangarajh cited, the life expectancy of boys with DMD has increased, and this leads to a continued need to understand the disease as it progresses.

Happily for Michael, his cognitive ability have not declined. He recently graduated from Florida Gulf Coast University with a degree in journalism that was paid for by a local vocational program. The program also helped him with school supplies and technology. Michael has interned for several local news organizations with onsite reporting at high school football games and other events, and has worked at a local Best Buy for more than 3 years, working in customer service. He’s engaged to a woman, Nicole, who also has a disability and is confined to a wheelchair.

“Nicole’s family has been a second family to me,” he says. “Having somebody like her that understands the situation is nice. We’re a good sounding board for each other – we help support each other where we can. At the end of the day, we’re there for each other.”

When asked why he thinks people should help fund research into NM diseases, he posed a simple scenario.

“Imagine watching your grandchild, son, or daughter deal with this disease and what it brings,” he says. “Think of what it would be like, seeing them deal with that? We should be trying to prevent these things. We’ve got a lot of bright scientists doing great work, and they just need opportunities.”

Donations to the ANF helps fund researchers searching for cures. Donate today at www.neuromuscularfoundation.org/donate
In celebration of Rare Disease Day—February 29, 2020 and the success of previous Special Reports, Neurology Reviews, in collaboration with the National Organization for Rare Disorders (NORD) will publish our 6th annual Rare Neurological Disease Special Report.

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<table>
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<th>Month</th>
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| **February** | 1 Spring CNCT Examination application registration opens  
2-8 AANEM attend the CPT Editorial Panel meeting  
17 Early bird registration ends for 2020 proctored EDX and NM Self-Assessment Exams |
| **March** | 4-7 Administration of the 2020 ABEM Examination  
8 AANEM State Liaison Committee meeting  
9 AANEM’s Annual Day on Capitol Hill  
15 Abstract submission deadline for 2020 AANEM Annual Meeting |
| **April** | 1 ANF Development Grant recipient notified  
6 Registration ends for proctored EDX and NM Self-Assessment Exams  
14 AANEM attends CPT Editorial Panel meeting |
| **May** | 1-2 Spring CNCT Examination administration (Days 2 and 3)  
8-9 AANEM Board of Directors spring meeting  
14 AANEM attends CPT Editorial Panel meeting  
19 Early-bird registration begins for 2020 AANEM Annual Meeting  
25-26 AANEM/Wakeforest NM US Workshop  
30 Neuromuscular Ultrasound Exam early bird registration ends |
| **June** | 1 Proctored EDX and NM SAE results  
1 Neuromuscular Ultrasound Exam early bird registration opens  
6-10 AMA House of Delegates annual meeting  
19 Early-bird registration begins for 2020 AANEM Annual Meeting  
25-26 AANEM/Wakeforest NM US Workshop  
30 Neuromuscular Ultrasound Exam early bird registration ends |
| **July** | 1 ANF Development Grant funding begins  
31 AANEM Achievement Award nominations due  
31 Neuromuscular Ultrasound Exam registration closes |
| **August** | 3 Early-bird registration ends for the 2020 AANEM Annual Meeting  
4 Regular registration for the 2020 AANEM Annual Meeting begins |
| **September** | 21 Online Registration Ends for the 2020 AANEM Annual Meeting |
| **October** | 1 AANEM Attends CPT Editorial Panel Meeting  
6 AANEM Board of Directors Fall Meeting  
6 Onsite Registration Opens  
7 AANEM Attends RUC  
7-10 2020 AANEM Annual Meeting in Orlando, FL |
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