

WORLD NEUROLOGY

THE OFFICIAL NEWSLETTER OF THE WORLD FEDERATION OF NEUROLOGY

A CONTINUING JOURNEY

The Fight Against Stroke in India

BY ROHIT BHATIA, MD, DM, DNB

The stroke epidemic has arrived in India. While we were busy combating the scourge of infections and deficiency diseases, non-communicable diseases (NCDs) including stroke stealthily crept up on us.

With a population of 1.2 billion today and growing, India finds itself starting at a stroke epidemic (See “The Stroke Fact Sheet in India.” on page 8.)^{1,2}



Rohit Bhatia

In addition to strokes due to conventional risk factors, cardio-embolic stroke due to rheumatic valvular heart disease, cerebral venous thrombosis, and strokes related to tuberculous meningitis still remain important causes of stroke, especially in the young

Indian population. (See Figure 1.)

The recently published Prospective Urban Rural Epidemiology (PURE) study from 18 low-, middle- and high-income countries showed that incidence of major cardiovascular disease was highest in low-income countries, despite the fact that these countries had the lowest risk-factor burden³.

Challenges in stroke care include a limited number of trained neurologists who are mostly urban, a large number of patients who are mostly rural, a lack of knowledge and awareness both about stroke risk factors and treatment in the general public and prohibitive cost of stroke

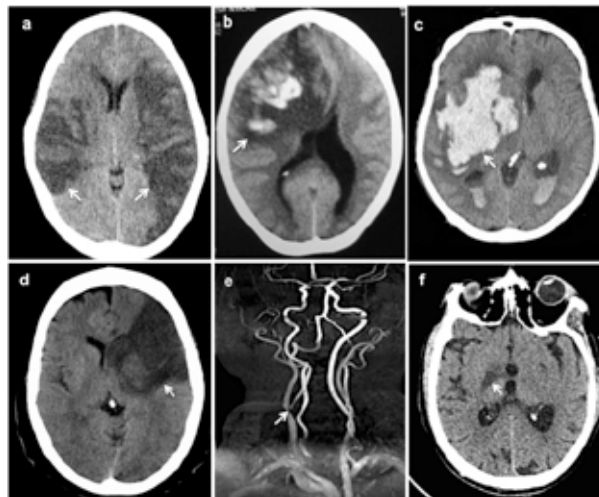


Figure 1. Types of strokes (arrows): (a) bilateral arterial infarcts in a patient with rheumatic heart disease and atrial fibrillation (b) venous infarct in a post-partum patient with superior sagittal sinus thrombosis (c) intracerebral hemorrhage in a hypertensive patient, (d) arterial embolic infarction due to large artery atherosclerosis and carotid stenosis (e) and (f) perforator artery infarction in patient with tubercular meningitis.

care. There is a lack of uniformity and standardization of secondary and tertiary

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International Neurology Forum in Kazakhstan

BY AIDA KONDYBAYEVA, MD

For years, the World Federation of Neurology (WFN) has reached out to Kazakhstan

and its neurology community. However, language barriers made it difficult to establish a connection.

After a two-year effort by Prof. Daniel Truong and Saltanat Kamenova,

with the valuable assistance of Aida Kondybayeva, the International Neurology Forum for Parkinsonism and Related



Aida Kondybayeva

Disorders was held in Kazakhstan. The forum was hosted by the Asfendiyarov Kazakh National Medical University and was attended by more than 120 Kazakh neurologists.

Prof. Aikan Akanov, rector of the university, opened the forum by thanking the organizers and emphasizing the importance of the event for Kazakhstan. Internationally known speakers included Profs. Erik Wolters from the Netherlands, Truong from the United States and Carlo Colosimo from Italy. Speakers from Kazakhstan included Guram Pichkhadze from the Virtual Institute of Neuroscience, Saltanat Kamenova, chairwoman of the department of neurology at the university and Marat Asimov, chairman of the department of medical psychology.

All of the lectures were translated in real time for the audience. The topics discussed were broad and included the diagnosis, pathology and neuropsychology of Parkinson's disease, tremor and dystonia, as well as the management of these disorders. In addition to the presentations, several workshops were offered, led jointly by Profs. Shelekov, Truong, Perlenbetov and Nurmagambetova.

The meeting was supported with a grant from the International Association for Parkinsonism and Related Disorders (IAPRD). All participants received a free textbook as a gift from the IAPRD. On the last day of the forum in her closing remarks, Prof. Kamenova noted the importance of this event for doctors and young neurologists of Kazakhstan and

thanked Profs. Wolters and Truong for their noble mission in the development of the educational program. •

Kondybayeva is with the Asfendiyarov Kazakh National Medical University.



Opening statement of the International Neurology Forum by Prof. Aikan Akanov on Sept. 23, 2014, with Prof. Guram Pichkhadze, Erik Wolters and Daniel Truong.



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FROM THE EDITOR-IN-CHIEF

Neurodevelopmental Disorders in India: From Epidemiology to Public Policy

BY DONALD SILBERBERG, MD

Epidemiologic studies address many needs, ranging from contributing to the understanding of disease pathogenesis to stimulating the development of public policy that addresses health needs. A successful example of the potential for new information to stimulate public policy is the nationwide study of the prevalence of neurodevelopmental disorders in India, carried out by members of the International Clinical Epidemiology Network (INCLIN).



DONALD H. SILBERBERG

When I suggested the study 10 years ago, almost no data was available for India or for neighboring countries. After successfully obtaining funding from the U.S. National Institutes of Health (NIH), the voluntary health organization Autism Speaks and The Government of India, Dr. Narendra Arora, then the newly appointed executive director of INCLIN, hosted meetings in New Delhi in order to develop the study.

The investigators included, in addition to Dr. Arora, MKC Nair, director of the Child Development Center, Medical College Thiruvananthapuram, Kerala; Sheffali Gulati, pediatric neurology chief, All India Institute of Medical Sciences, New Delhi; Vinod Bhutani, neonatologist, Stanford University, Palo Alto, California; Maureen Durkin, anthropologist/epidemiologist, University of Wisconsin, Madison; and Jennifer Pinto-Martin, epidemiologist, School of Nursing, University of Pennsylvania. Dr. Arora wisely involved the National Trust, part of the Ministry of Social Justice and Empowerment, Government of India, a choice that undoubtedly contributed to our success in helping to develop public policy.

The main objectives of our research were:

- To estimate the prevalence of Neurodevelopmental Disorders (NDDs) among children aged 2-9 years, among urban, rural, hilly areas and tribal communities in India
- To gather data on risk factors for NDDs
- To develop and disseminate screening and diagnostic methodology for India and other countries in which individuals with NDDs have been underrecognized.

The domains studied were: Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders, Intellectual Disability, Epilepsy, Learning Disability, Neuromuscular Disorders, Cerebral Palsy, Speech and Language Disorders, Hearing,

and Vision Impairment.

Increasingly robust screening questionnaires were developed, expanding on the well-known “10 Questions” screen¹. More than 50 clinicians and social scientists contributed to the design and execution of the study. Analysis of the data derived from the original 39-question Neurodevelopmental Screening Tool (NDST) used in gathering data from 4,000 families from six regions of India revealed that optimal sensitivity and specificity was achieved by using only 11 questions.

The questionnaire that was finally used is described in several publications^{2,3,4,5}. Countrywide results (excluding tribal data) revealed that from 10 percent (hilly areas), 13 percent (urban areas), to 18 percent (rural areas) of children ages 2-9 years were found to have one or more NDD. The tribal prevalence was 4.96 percent, perhaps reflecting lower infant and child survival.

The study was supported by: NIH (USA) Grant R21 HD53057, MKC Nair (PI), J. Pinto-Martin and D. Silberberg (Co-PIs), S Gulati, Network Coordinator); Autism Speaks (USA); The National Trust (Government of India) and INCLIN. Importantly, the NIH funding was obtained via the Fogarty International Center’s “Brain Disorders Across the Lifetime” program. (See Dr. Donna Bergen’s article on page 4).

On the basis of the methodology and results, The Government of India has undertaken two initiatives:

- Questions regarding disability were included for the first time in the 2011 Census of India.
- A national program for screening, diagnosis and treatment of NDDs was launched in 2013, the Rashtriya Bal Swasthya Karyakram (RBSK; National Child Health Program). The program is funded with more than \$400 million, in order to develop 630 centers for screening and subsequent care of those found to have a neurodevelopmental disorder. Activities to achieve implementation are under way in many regions of India.

This outcome serves as a case study of epidemiology as “translational research,” a term ordinarily used to describe the process of bringing research laboratory results to the bedside. Clearly, epidemiology can be used to serve advocacy, as we work to improve neurologic health in all regions of the world. •

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WFN Training Centers

BY WOLFGANG GRISOLD AND STEVEN LEWIS

A worldwide concept for regional training

The mission of the World Federation of Neurology (WFN) is to foster quality neuro-

logy and brain health worldwide by promoting global neurological education and training. The WFN Education Committee has developed a concept paper to define the standards and requirements for WFN Training Centers worldwide. The purpose is to establish worldwide standards of neurological care and at the same time improve local training in neurology.



Wolfgang Grisold

see TRAINING, page 7

PRESIDENT'S COLUMN

WFN Matters

BY RAAD SHAKIR

Following the Council of Delegates meeting in Boston, the World Federation of Neurology (WFN) trustees decided to invite Prof. Steve Lewis, Chicago, to act as a co-opted trustee. Lewis also chairs the WFN Education Committee. The Education Committee is therefore represented at the trustee level to inform and coordinate all educational activities.

The nominating committee under the chairmanship of Prof. Marianne de Visser (Netherlands) will seek names of interested members of societies to be nominated for the two positions of treasurer and elected trustee. The elections will take place in Santiago during the 21st World Congress of Neurology. As stated in my last column, the COD approved the establishment of the new position of WFN treasurer.

Over the summer, negotiations with Elsevier, our publisher, have continued. The proposal was to establish a spinoff open-access e-journal. This has been agreed and the journal shall be named eNS (eNeurological Sciences). The WFN is delighted that Prof. Bruce Ovbiagele, Medical University of South Carolina, has agreed to serve as editor, and the editorial board is being finalized. Open access e-journals are becoming ubiquitous, and ours will be operational during 2014.

The contract for *Journal of the Neurological Sciences* is being finalized, and a new 10-year contract is expected to be signed by the end of 2014. This gives the WFN

more scope in publications, being affiliated with two journals.

The 2014 WFN grants have been agreed upon, and the recipients are being informed. We are grateful to the ILAE, WSO and the American Academy of Neurology for their support in partnering with the WFN in the awards. It is important to emphasize that the WFN Education Committee under the chairmanship of Lewis is monitoring the progress of all grants and some of the forthcoming grants reports will be submitted to the editor of *World Neurology* for his consideration. The budget for 2015 grants is already allocated, and the start of applications will be announced on the WFN website.

China and India

I had the privilege to be invited to Xiamen, China, to represent the WFN at the 20th Chinese Society of Neurology (CSN) meeting Sept. 18-21, 2014. I had the honor of addressing the congress at the opening ceremony. (See Figure 1.) There were 4,200 delegates with 3,000 abstracts presented. I was impressed by the enthusiasm and determination of our Chinese colleagues in their efforts to produce the highest quality research and teaching courses. (See Figure 2.)

Business meetings with Prof. Chuanqin Pu, current president; Prof. Chuan Zhen Lu, past president; and Prof. Liylin Cui, president-elect were engaging and fruitful. (See Figure 3.) I am happy to report that there is initial agreement on introducing the CME program to China. This is most timely; as of 2015, the Chinese post-graduate neurology program is changing to a nationwide training curriculum to replace the current one, which is Hospital/University-based with varied curricula and outcomes. The matter is awaiting the final approval of the Chinese Medical Association.

I had the opportunity to talk to many trainees who were eager to move to the new program. The WFN offered to help in every way possible in this massive

endeavor across China. The WFN offer includes CME training programs appraisal as well as course evaluations and, if needed, accreditation. Our Chinese colleagues were keen on international recognition of their new training program, and I am sure that regional organizations across the world will be happy and willing to help and advise.

From the first, to the second most populous country on earth. I have been asked to participate in the annual Indian Academy of Neurology meeting in Chandigarh Nov. 6-9, 2014. This gives the WFN the opportunity to see how our Indian colleagues are progressing with their neurological training, research and care provision.

India is the No. 1 user of the WFN-administered CME program. The leader is Prof. Sarosh Katrak (Mumbai) and the latest six monthly figures continue to show excellent utilization. This is one of the best examples of interregional collaborations. The American Academy of Neurology donates the program to the WFN, which administers and distributes the material across the world.

The Indian Academy of Neurology is planning a four-day congress with a varied and most interesting program. The scope is huge with teaching courses, guest lectures, pearls in neurology, neuroradiology rounds, video sessions, debates, clinical-pathological cases and a session titled, "My Most Interesting Case." Faculty from all parts of India and from across the world participate.

With China and India, the two largest populations in the world are moving full steam ahead with their neurology training and research. The close collaboration with the WFN only strengthens the relationship and brings together a large number of neurologists. The future of neurology in both countries is assured.

World Congresses

The preparations for the World Congress in Santiago are progressing extremely well. The scientific program and the teaching courses are complete. The variety is most impressive. I have to register the WFN gratitude to Professor Renato Verdugo, president of the congress and all our Chilean colleagues as well as Prof. Donna Bergen, chair of the WFN Scientific Program Committee for their hard work and perseverance. The result is impressive. Chile is an amazing and welcoming country, and we all look forward to seeing many neurologists from across the world.

The preparations for Kyoto 2017 are well under way. The Japanese Neurological Society in collaboration with the Asian Oceanian Association of Neurology (AOAN) is moving ahead with the formation of all committees. The WFN Scientific Program Committee is led by Prof. Werner Poewe (Austria), and the local Scientific Program Committee is chaired by Prof. Yoshikazu Ugawa.

The WFN Yoghish Committee is in the process of assessing possible sites



Figure 2. Chinese Neurological Society Audience in the main auditorium.



Figure 3. From left to right: Prof. Chuanqin Pu, CSN president, Prof. Liylin Cui, president-elect CSN, Raad Shakir, president WFN, and Prof. Chuan Zhen Lu, past president CSN.

for the WCN 2019. Its report will be available well before voting takes place during the Council of Delegates meeting in Santiago on Nov. 1, 2015.

Neurology in World Regions 2014

Events have moved on rapidly during this year. Two of the six WFN regions have seen major changes; in Europe with the birth of the European Academy of Neurology (EAN); and in Latin America with the impending incorporation of the Pan American Federation of Neurological Societies (PAFNS).

The Asian Oceanian Association of Neurology is consolidating its membership and activities and is involved in the preparations for WCN 2017 in Kyoto.

The Pan Arab Union of Neurological Societies (PAUNS) is holding its next biennial meeting in January 2015 and is planning a major change in its constitution and operational activities.

The Pan African Association of Neurosciences (PAANS) is in the process of redefining its membership and coming up with a neurology-only organization, as African Neurosurgeons have gone their own way being part of our sister organization the World Federation of Neurosurgical Societies (WFNS). The proposed name for the new organization is under discussion but the African Academy of Neurology is a likely contender.

The North American region continues its most valuable support for all other regions in providing education, CME as well as financial support for activities in the developing world.

All of these activities bode well for the WFN in 2015. We are all excited by the prospect of our second World Congress in South America, and I am sure that I speak on behalf of the WFN trustees and administration in wishing neurologists and their families across the world a happy, healthy and productive 2015. •



Figure 1. WFN President Raad Shakir speaking during the opening speech at the 20th Chinese Neurological Society congress. The banner on screen reads: "Zhong hua shen jing bing xue fen hui 20 nian," meaning "Chinese Society Neurology, CSN in Recent 20 Years."

GYTN: Training Young Neurologists in Argentina

A new working group seeks to share learning with young neurologists

BY MATÍAS J. ALET, MD; LISEI DARIO, MD; AND MARTIN BERTUZZI FIORELLA, MD

The Group of Young Training Neurologists (GYTN) is a working group under the representation of the Neurological Society of Argentina (SNA). The group was founded in 2011 with the aim of creating a network of neurology residents and young neurologists around the country. The purpose of GYTN is to create a platform where people



Matias J. Alet

can share information and experiences during their education process.

The GYTN contemplates different activities. Conferences are conducted the last Friday of every month in the SNA auditorium.

They are conducted on-site and online. Our meetings are divided into two parts. During the first part, we select a neurological case and discuss it, with special emphasis on syndromic



Lisei Dario

diagnosis and differential diagnosis. Later, the case is uploaded to the SNA web page in the GYTN sector. The second part of the meeting is used for different purposes. Currently, we are focusing on the exposition to be presented at the annual SNA congress. The subject that has been chosen for this year is Neurological Manifestation of Infectious Diseases. Three cases will be presented for two experts in the topic and an interactive discuss with the public will be made.

The online forum is called FAREN, an acronym for "Foro Argentino de Residentes de Neurología," meaning, "Argentine Forum for Neurology Residents." To keep it active, we publish clinical cases once a month. Those cases are based on neuroimaging, which are discussed between neurologists and neurology residents from different parts of the country.

We also produce information for the management of neurological emergency situations. We seek to unify the work across different training residents and to update the way to proceed in an emergency based on the latest publications.

FAREN is a useful way to publish activities of scientific interest and job opportunities. We want neurologists around the country to be aware of the latest academic and professional information, improving access to such opportunities.

We also are conducting a survey of the

country's residences of neurology. The purpose is to obtain up-to-date information from residents and neurologists working in our country, as well as the welfare and academic needs of each of the centers that are conducting training features.

Another initiative of the group is to strengthen the links between young neurologists. To do this, we have initiated contact with the International Working Group of Young Neurologists of the World Federation of Neurology (IWG-YNT). The goal is to achieve the global inclusion of young neurologists from Argentina in the activities of the World Federation, and to provide the first Latin American representative to the organization, which currently has members in Africa, Asia, Europe and Oceania.

The intention of this article is to inform all neurologists of the work of our group, and especially those who are in the training stage. We hope that other groups with similar ideals and proposals get to know us, and if they are interested they can contact us to share commentaries, experiences or any other types of information. As we find ourselves in the early years of our group, that linkage will be crucial for us, because we have much to learn from those more experienced teams. •

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BUILDING PARTNERSHIPS FOR GLOBAL HEALTH

NIH's Fogarty International Center

BY DONNA BERGEN, MD

The Fogarty International Center (FIC), as part of the U.S. National Institutes of Health (NIH), supports global health research and research capacity building through its own programs and through partnerships with the rest of NIH and outside organizations. To meet its goal of improving global health through research, FIC strives to build partnerships between health research institutions and individual scientists in the U.S. and abroad, and to train young scientists.

Fogarty and 17 other NIH components sponsor a Global Health Program for Fellows and Scholars, which offers an opportunity for young investigators from the U.S. and from low- and middle-income countries (as defined by the World Bank) to learn new research skills, build collaborations and advance their careers. Applicants apply directly to specific "support centers," which are U.S. academic institutions with special expertise in global health, and which are funded through competitive grants.

These support centers are the University of California at Berkeley, the University of California Global Health Institute, the University of North Carolina at Chapel Hill, the University of Washington and Vanderbilt University. Applications for FIC training grants are awarded through these support centers. These support centers identify and select candidates,

and provide mentoring, technical and administrative assistance to the fellows and scholars in their year abroad.

The \$20 million project is funded by the National Institutes of Health, with the goal of granting 400 health scientists on year-long research fellowships at 27 low- and middle-income country sites. The goal is to build consortia that will develop and support global health research training programs, which will provide intensive mentoring for participants and diverse clinical research experience in many sites. Some Fellows are trained in their own countries, with close mentoring from collaborating colleagues at other centers; others work directly through one of the support centers with one of the many other institutions that contribute to this project, enabling both U.S. and low- and middle-income trainees to participate in the program

Training is focused on disorders with major impact in low income countries, and on the growing problem of non-communicable diseases in all countries. With neurological conditions making up more than 10 percent of the burden of death and disability worldwide, neurologists moving into a career in international health should find the program of great interest.

If you are interested in learning more about the Fogarty fellowship, here are two useful sites.

<http://www.fc.nih.gov/Programs/pages/scholars-fellows-global-health.aspx>

<http://www.fc.nih.gov/Programs/Info/Pages/scholars-fellows-faqs.aspx>

Bergen is with the Rush University Medical Center in Chicago.



Donna Bergen

POST-GRADUATE TRAINING IN VIETNAM



Improving the WFN Website

BY WALTER STRUHAL, SURAT TANPRAWATE
AND CHIU MAN

The World Federation of Neurology (WFN) is an active worldwide organization that promotes and advocates for neurology on all continents. We have started to re-engineer the website to shed light on this broad spectrum of activities.

The design of the website in recent years has been analogous to an information booklet on the WFN. We want to transform the current website into a vivid and timely information platform, which should allow WFN officials and WFN partners to interact with the website audience. We will not change the design, to keep the corporate identity stable, but the website logistics will change considerably.

Here are some of the expected changes.

- A new registration feature will allow individuals to subscribe to WFN new.
- Short introductory texts will guide the user through all areas of the website.
- The content of WFN's publications (World Neurology and Journal of the Neurological Sciences) will be embedded and promoted through the website; contents of both publications will be presented in short video introductions

as well as being indexed for searchability within the site.

- WFN Committees, Applied Research

Groups, partners and initiatives will have access to this information platform to keep the world updated on progress in their areas of responsibility.

- Content from past congresses will be accessible through an online archive, and online teaching and training tools will be promoted.
- WFN officials will have the opportunity to present their work for WFN, eventually also through short video messages.
- Many more details will be adapted.

An essential concept of the new website will be to integrate social media much more strongly into WFN's online experience. Social media allows us to quickly and effectively interact with our audience.

To help us achieve this, we have intro-

duced three social media channels:

- [Facebook \(facebook.com/wfneurology\)](https://www.facebook.com/wfneurology),
- [Twitter \(twitter.com/wfneurology\)](https://twitter.com/wfneurology)

and [LinkedIn \(http://linkd.in/1uckYLK\)](https://www.linkedin.com/company/wfneurology). These groups already serve as discussion platforms and user numbers are constantly growing.

We Need Your Help

We want the website to serve your needs in advocating your WFN projects and activities. To do so, we have to get the information flowing.

Please help us make your great work visible. We will serve your needs, by promoting your initiatives and ideas.

It really won't take long. Consider that one of the most popular micro-blogging services, Twitter, basically only supports messages up to 140 characters, so your statements should be short and concise. So in only the few minutes you invest, we might make your work visible to the world. •

We want the website to serve your needs in advocating your WFN projects and activities.

Mark Your Calendars 2014

10th International Congress on Non-Motor Dysfunctions in Parkinson's Disease and Related Disorders

Dec. 4-7

Nice, France

2015

The 12th International Conference on Alzheimer's and Parkinson's Diseases

March 18-22

Nice, France

17th Congress of the International Headache Society

May 14-17

Valencia, Spain

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Editor's Update and Selected Articles From JNS

BY JOHN D. ENGLAND, MD

The [Journal of the Neurological Sciences \(JNS\)](#) is a broad-based journal that publishes articles from a wide spectrum of disciplines, ranging from basic neuroscience

to clinical cases. JNS strives to publish papers with novel, unique and original observations.



John D. England, MD

Along these lines, members of our Editorial Board are encouraged to identify and foster the submission of manuscripts that demonstrate the highest quality research. We also strive to satisfy the desires and needs of our readership, and I have received many requests to increase the number of review articles that cover topics in clinical neurology as well as basic neuroscience.

JNS has always welcomed well written and relevant review articles, and I wish to re-emphasize this point to prospective authors. Dr. Daniel Truong, who is the associate editor for Reviews and Commentary, has updated the suggested format for review articles submitted to JNS.

Whatever the topic, the review should be richly referenced and include summary text boxes, tables and diagrams or figures. The idea is to make the reviews easily readable and educational. Authors who might be interested in writing and submitting review articles to JNS can find specific requirements and suggestions within the [JNS website](#).

In our ongoing attempt to enhance accessibility of JNS articles to members of the World Federation of Neurology (WFN), we have selected two more "free-access" articles, which are profiled in this issue of *World Neurology*.

In this issue, we feature two paired articles regarding the ALS-Plus syndrome.

- 1) Many clinical and pathological studies indicate that ALS is a more heterogeneous disease than previously recognized. In fact, even patients who appear to exhibit a clinically pure motor system disease often have neuropathological evidence of multisystem disease. In the largest series of cases to date, Leo McCluskey, et al, assessed the frequency of the "ALS-Plus" syndrome in a consecutively ascertained series of 550 patients with ALS. Their criteria for ALS-Plus was a clinical diagnosis of ALS combined with deficits of ocular motility, cerebellar signs, extrapyramidal features or autonomic dysfunction. Cognitive impairment

was also assessed, but determined separately. Selected patients had genetic testing and high-resolution MRI of brain. Seventy-five (13.6%) patients had ALS-Plus syndrome. Fourteen additional patients had evidence of cognitive deficit (ALS-FTD). Cognitive impairment, bulbar-onset and pathogenic genetic mutations were more common in the patients with ALS-Plus syndrome compared to patients without ALS-Plus syndrome. The patients with ALS-Plus syndrome also had a shorter survival.

[McCluskey L, Vandriel S, Elman](#)

[L, Van Deerlin VM, Powers J, Boller A, et al. ALS-Plus syndrome: Non-pyramidal features in a large ALS cohort. J Neurol Sci 2014;345:118-124.](#)

- 2) In an accompanying editorial, Benjamin Brooks provides an historical perspective and comments upon the importance of the article for the field of ALS research. He determines that McCluskey and colleagues have performed a "masterful clinical

study of a modern series of ALS-Plus from a single center." He suggests that this study provides a clinical framework for accurate classification of ALS-Plus syndrome. Studies such as this one indicate that "atypical" ALS is not as atypical as we believed and should stimulate more thought and research within the field.

[Brooks BR. ALS-Plus – Where does it begin, where does it end? J Neurol Sci 2014;345:1-2.](#)

England is editor-in-chief of the *Journal of the Neurological Sciences*.



The Controversial Story of Aspirin

Edward Stone and aspirin

BY JMS PEARCE, MD, FRCP

For almost a century, aspirin, one of the most important drugs of the 20th century, was the mainstay of symptomatic analgesia, used universally in the treatment of headaches, arthritis, painful neurological and other maladies. Its introduction is usually credited to Felix Hoffmann's (1868-1946) synthesis of salicylic acid in 1897. (See Figure 1.) But this is a controversial story. The use of salicylates dates back at least to c. 400 BC when Hippocrates (440-377 B.C.) prescribed the bark and leaves of salix, the willow tree (rich in salicin) to reduce pain and fever. It also was mentioned by Dioscorides (c. 100 A.D.) and later by Pliny the Elder and Galen.

In 1826, Henri Leroux isolated "salicin" from willow bark. However, it had fallen into disuse for centuries until the Reverend Edward Stone rediscovered its efficacy.

The Reverend Edward Stone (The Reverend was formally known as Edward, but was referred to as Edmund by his close friends and family.) was born in Lacey Green, Princes Risborough, Buckinghamshire, on Nov. 5, 1702¹. He went to Wadham College, Oxford, in 1720. In June 1728, he was ordained



Figure 1. Felix Hoffmann

to take up the curacy of Charlton-on-Otmoor, Oxfordshire, where he remained until 1730 when he was elected a Fellow of Wadham. In 1745, he moved to Chipping Norton, Oxfordshire, as chaplain at Bruern Abbey.

Dried Willow Bark

On April 25, 1763, Stone wrote to George Parker, second earl of Macclesfield, and president of the Royal Society in

Philosophical Transactions
(1683-1775) > Vol. 53, 1763 [195]

XXXII. *An Account of the Success of the Bark of the Willow in the Cure of Agues. In a Letter to the Right Honourable George Earl of Macclesfield, President of R. S. from the Rev. Mr. Edmund Stone, of Chipping-Norton in Oxfordshire.*

My Lord,

Read June 24, 1763. **A**Mong the many useful discoveries, which this age hath made, there are very few which, better deserve the attention of the public than what I am going to lay before your Lordship.

There is a bark of an English tree, which I have found by experience to be a powerful astringent, and very efficacious in curing aguish and intermitting disorders.

About six years ago, I accidentally tasted it, and was surpris'd at its extraordinary bitterness; which immediately rais'd me a suspicion of its having the properties of the Peruvian bark. As this tree delights in a moist or wet soil, where agues chiefly abound, the general maxim, that many natural maladies carry their cures along with them, or that their remedies lie not far from their causes, was so very apposite to this particular case, that I could not help applying it; and that this might be the intention of Providence here, I must own had some little weight with me.

The excessive plenty of this bark furnish'd me, in my speculative disquisitions upon it, with an
D d z argument

Figure 2. Proc Royal Soc 1763, Edmund Stone: Willow bark

a letter read before the Royal Society on June 2, 1763, describing the use of dried willow bark as a remedy for fevers and agues². (See Figure 2.)

He explained that he had suffered from "aguistic intermitting disorders," which may have been malaria. In 1757, he had "accidentally" tasted willow bark and noted its extreme bitterness and its resemblance to Peruvian bark (cinchona tree, source of quinine). Arguing from the doctrine of signatures — "that many natural maladies carry their cures along with them, or that their remedies lie not far from their causes," Stone concluded that the willow tree that "delights in a moist or wet soil" might provide an antidote for agues that chiefly abound in that environment.

He experimented by gathering willow bark from pollarded willows, dried it for more than three months in a bag on the outside of a baker's oven, pounded and sifted it. He dosed himself, using tiny amounts, but finding that the powder had a salutary effect, increased the dose to two scruples (One scruple equals 1/24 ounce, about 1.25 gm) every four hours. To his delight, "the ague was soon removed."

Stone gave powdered willow bark over several years to about 50 people complaining of agues or fevers; it was successful in many of them. But, when fevers failed to respond to willow bark, he added quinine, which he found more effective. It's

unclear, however, if any of these patients had malaria. Thus, had Stone accidentally discovered a source of salicylate, the precursor of aspirin.

In January 1764, a fire at Bruern Abbey ended Stone's chaplaincy there. He died intestate in Chipping Norton on Nov. 26, 1768, and was buried at Horsenden on Dec. 2, 1768.

After Stone's report to The Royal Society², willow bark was advised in some herbals, and pharmacists tried to extract salicylic acid from willow bark and meadowsweet (*Filipendula ulmaria*). Side effects of salicylate were troublesome but were reduced when, in 1853, acetylsalicylic acid or aspirin was made by Hoffman from acetyl chloride and sodium salicylate.

It is usually stated that Hoffmann (See Figure 1.) developed aspirin to help his rheumatic father; but it was not until 1897 that under instruction from Arthur Eichengrün (1867-1949) he synthesized acetylsalicylic acid, which was named aspirin, for the Bayer company. (See figure 3.) Hoffmann's close associate, Heinrich Dreser (1860-1924), dismissed the

marketed by Bayer as "aspirin,"⁶ whose name derived from *Spiraea*, then the Latin name for meadowsweet.

However, in 1949, Eichengrün claimed⁷ that he had instructed Hoffmann to synthesize acetylsalicylic acid, and Hoffmann had done so without understanding the purpose of the work. In 1944, while incarcerated in Theresienstadt concentration camp, Eichengrün had typed a letter (in the Bayer archives⁸) claiming his objective had been to obtain a salicylate without the adverse effects (gastric irritation, tinnitus) of sodium salicylate. Eichengrün tried aspirin himself, with no ill effects. Its real clinical potential was shown when with Dr. Felix Goldmann, he recruited physicians to secretly test it, they found it was successful in several painful conditions⁹. Eichengrün did not boast of his prime role in the discovery. Hoffmann lived until 1946, notably without publishing his own account of the discovery of aspirin; he mentioned repeatedly that Dreser had set the drug aside.

Hoffmann's role was important but was restricted to the synthesis of aspirin: prompted by Eichengrün, who "deserved credit for the invention of aspirin."⁵•

Pearce is Emeritus Consultant Neurologist at the Department of Neurology, Hull Royal Infirmary, UK. Dr. Peter J Koehler is the editor of this history column. He is neurologist at Atrium Medical Center, Heerlen, The Netherlands. Visit his website at www.neurohistory.nl

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Figure 3. Arthur Eichengrün

market potential of aspirin on the ground that it had an "enfeebling" action on the heart. ("The product has no value."³) He was preoccupied at the time with the potential of Bayer's new drug — heroin⁴.

Arthur Eichengrün, whose job it was to discover new products at Bayer, refused to accept Dreser's rejection of acetylsalicylic acid and pressed for its development^{3,4}. This was later produced commercially by Hoffman and Dreser in 1899,

MS: The First MENACTRIMS Congress

BY BASSEM I. YAMOUT, MD, FAAN

The First Congress of The Middle East North Africa Committee for Treatment and Research in Multiple Sclerosis (MENACTRIMS) was held Oct. 17-18 in Dubai. MENACTRIMS is an independent organization that facilitates communication and creates synergies among clinicians and scientists to promote and enhance research and improve clinical outcomes in multiple sclerosis (MS) in the Middle East and North Africa regions.

It was founded on Dec. 8, 2012, by nine eminent neurologists: Saeed Bohlega and Mohamad Jumaa from KSA, Riad Goueider from Tunisia, Raed Roughani from Kuwait, Maurice Dahdale from Jordan, Jihad Inshasi from the Emirates, Saher Hashem from Egypt, Issa Alsharuqui from Bahrain, and me from Lebanon. The prevalence of MS has been steadily increasing over the last few decades in the Middle East/North Africa region, reaching as high as 80/100,000 in some countries. The challenges posed by such a medical burden created the need for an official regional scientific committee to address all emerging issues related to MS in this region of the world.

The First MENACTRIMS Congress was the first major endeavor of the newborn MENACTRIMS organization, and with more than 500 attendees, including new practitioners as well as experienced MS specialists from all over the Middle

East, North Africa and neighboring countries, it turned out to be the largest scientific MS event in the region's history. Speeches were given at the opening ceremony by Dr. Bassem Yamout, president of MENACTRIMS; Dr. Raad Shaker, president of the World Federation of Neurology; Dr. Xavier Montalban, president of ECTRIMS; Dr. Suhayl Dhib-Jalbut, president of ACTRIMS; and Dr. Saeed Bohlega, president-elect of the Pan Arab Union of Neurological Societies.

The meeting hosted plenary sessions, scientific debates, clinical courses and symposia, focusing on biomarkers, epidemiology, immunopathogenesis, differential diagnosis, genetic and environmental factors, neuroimaging, OCT, pregnancy and Neuromyelitis Optica. More than 30 international and regional speakers shared their scientific and clinical experience with the audience, and 57 posters were presented during the meeting covering both local and international research.

MENACTRIMS is the youngest sister of a large family of international MS societies, which includes our elder sister ECTRIMS of nearly 30 years, ACTRIMS, LACTRIMS, PACTRIMS and RUCTRIMS. One of our main objectives is to cooperate with all international MS organizations to promote research and improve medical care in the field of MS. •



Yamout is professor of Clinical Neurology, president, MENACTRIMS and director of the Multiple Sclerosis Center Clinical Research at the American University of Beirut Medical Center in Lebanon. •

TRAINING

continued from page 2

WFN Training Centers will provide excellent training in neurology regionally in all parts of the world. To be accredited by the WFN, centers must be public, openly accessible university centers. Neurology must be a department on its own, closely connected to related fields, such as neurosurgery, internal medicine, psychiatry, radiology and neuropathology.

Departments should have a defined structure of experience in general neurology, dealing with the most common neurological diseases worldwide, and also addressing local neurological needs. Training must be performed in inpatient and outpatient services. In addition, electrophysiology, neuro-ultrasound and CSF analysis should be available in the department. The objective of the training course should be the independent, unsupervised practice of neurology by the trainees after the termination of their training.

The center needs to provide the WFN with a detailed plan of the training, the teaching staff and the availability of departmental facilities and structural facilities for the WFN trainees, including a detailed description of housing and accommodations, legal issues, working permit and insurance.

Prior to the establishment of a WFN Training Center, the center must follow the accreditation process set by the WFN. This includes the submission of a formal application and detailed report about the center, written and face-to-face interviews with center staff and a site visit by representatives of the WFN.

The WFN, as a charity registered in the U.K., will only grant accredited status to a center after a thorough examination. The WFN expects that the Training Centers will conduct their programs in a responsible and economic way, in line with the WFN's charitable aims.

Training Centers make regular reports to the WFN about the development of the trainees and confirm the end of training or other agreed milestones. WFN Training Center accreditation is for a period of two years and can be renewed.

Positions for future trainees at WFN Training Centers will be announced on the WFN website and on social media. The selection of candidates will be made by a committee composed of local/regional representatives and members of the WFN Education Committee.

Visit the [WFN website](#) for more information about WFN Training Centers. •

NSRG Teaching Courses in Latin America

BY PROF. DR. MED. MANFRED KAPS

The Latin American Chapter of the NSRG organized teaching courses in Lima, Peru, and Mendoza, Argentina, in October. According to the NSRG teaching concept to offer a high level of theoretical knowledge and sufficient practical skills, both two-day courses included lectures and at least 50 percent practical training in small groups of no more than seven participants.

The strictly limited number of participants allowed individual mentoring and exchange among all participants and proved functional. At the closing ceremony when the local course directors Prof. Ana Valentia, Dra. Sylvia Cocorullo and Prof. Manfred Kaps as NSRG delegate delivered the participation certificates, there was lots of cheer and enthusiasm.

The next NSRG accredited courses will take place in 2015 in Mexico, Brazil and of course during the XXII World Congress of the WFN in Santiago, Chile. •



Figure 1. Participants of the NSRG Course in Lima.



Figure 3. Participants of the NSRG Course in Lima.



Figure 2. Mendoza in October 2014.

Kaps is professor of neurology at Justus-Liebig-University in Giessen, Germany.

STROKE

continued from page 1

stroke care while availability of primary care in stroke is extremely unreliable. The stroke epidemic did catch us by surprise and in an unprepared state, but the situation is gradually beginning to improve and we are optimistic about the future. (See Figure 2.)

Acute stroke care has barriers, including recognition, pre-hospital delays, physician expertise, lack of ambulance services, cost of tPA and lack of critical care facilities. Although thrombolysis (using tPA) continues to be available only in urban private or academic hospitals, there has been a recent rise in the number of stroke patients getting the benefit of this treatment.

In the year 2009, 1,648 patients were thrombolysed, while in 2011, the number rose to 2,975 and a center in northwest India reported a four-fold increase in rates of thrombolysis². About 100 centers in India currently have facilities to provide intravenous thrombolysis, and the numbers are likely to rise with awareness and experience.

In the national capital region, the cost barrier is gradually being offset for eligible patients by the provision of free tPA by the government in state-run academic hospitals, including All India Institute of Medical Sciences (AIIMS), New Delhi. The National Program on Prevention and Control of Cardiovascular Diseases, Diabetes and Stroke⁴ (NPCDCS) launched in 2008 by the ministry of health and



Figure 2. Recovering stroke patients at the Stroke Clinic, Neurosciences Center, AIIMS.

family welfare (See “Major Components of NPCDCS.”) addresses NCD prevention by risk reduction, early diagnosis and appropriate management through health promotion programs for the general population and high-risk groups.

At present, the NPCDCS program is implemented in 100 districts across 21 Indian states, and it is expected to be rolled out in 640 districts by 2017 under the 12th five-year plan. (See Figure 3.) Developing and running dedicated stroke units in the face of the extremely limited health resources is a challenge; 35-40 stroke units currently exist, mainly in bigger cities and more often in private hospitals.

Improving Access to Stroke Care

Reaching out to remotely located patients remains difficult, and telestroke is recognized as a potential solution⁵. Telemedicine has been successfully used by the Indian Space Research Organization (ISRO) to meet the needs of remote Indian hospitals⁶.

The telemedicine network implemented by ISRO in 2001 presently stretches to around 100 hospital countrywide, with 78 remote rural/district health centers connected to 22 speciality hospitals in major cities, thus providing treatment to more than 25,000 patients, including stroke patients. (See Figure 4.) A major telestroke initiative has been taken up by the state of Himachal Pradesh (HP). Telestroke Management Program has been piloted for the first time in HP in collaboration with AIIMS. Under this program, 18 primary stroke centers are being set up in HP state hospitals, which have CT scan facilities. One hundred and twenty state doctors have been trained and six patients already have been successfully treated under this program. Success of this program will pave the path for comprehensive treatment of stroke patients in more parts of the country.

Research in stroke medicine is another area that has seen improvement with increasing national and international collaborative efforts and improved funding opportunities. The Indian Council of Medical Research (ICMR), Department of Biotechnology (DBT) and Department of Science and Technology (DST) of the Government of India have increased support for basic and clinical stroke research.

The WHO stroke STEPS I version 7 was tested in the Indian Collaborative Acute Stroke Study (ICASS). During 2002-2004, 2,162 acute stroke cases were identified in the study. Analysis of results confirmed that the incidence of stroke was rising with the advance in age. Presently, there are eight stroke registries based in various states of India. Each registry has independently set up a stroke surveillance system based on the WHO STEPS guidelines⁷.

STROKE IN INDIA: FACT FILE^{1,2}

- Current population of India: 1.25 billion
- Stroke prevalence: 84-262/100,000 in rural and 334-424/100,000 in urban areas
- Age adjusted stroke incidence (WHO-STEPS approach): 145/1000,000 person-years
- New acute stroke/year: 1.44-1.64 million
- Strokes in population aged <40 years: ~12%
- 28-30 day case fatality: 18-41%
- The Global Burden of Disease Study projects that total deaths from stroke in India will surpass deaths caused by cerebrovascular disease in established market economies by year 2020
- Total neurologists in India: ~1,500

MAJOR COMPONENTS OF NPCDCS, GOVERNMENT OF INDIA⁴

1. Four to 10 bedded multipurpose Medical Intensive Care & Stroke Unit (ICSU) in each district hospital.
2. Health workers to be trained in awareness generation on early symptoms of these diseases, screening of diabetes and hypertension and home-based care.
3. Districts will be supported with certain essential drugs, including TPA for stroke patients.
4. All districts will have support for a CT scan through public-private-partnership mode.
5. It is proposed to strengthen government medical colleges across India to provide specialized tertiary care facilities in NCSs and also to work as a resource center for training and research.
6. Four centers of excellence for neurological rehabilitation to be established.

The National Stroke registry of the ICMR is being run by the National Center for Disease Informatics and Research, Bangalore, where staff members have started the process of collating data on stroke patients from institutions and individual specialists who have registered with the program. The Indian Stroke Prospective Registry (INSPIRE) is a large, multicenteric prospective pilot registry run by the division of clinical trials, St. John's Research Institute, Bangalore, with the objective of determining etiologies, clinical practice patterns and outcomes of stroke in India.

By April 2012, the study had enrolled 5,301 patients from 49 cities in 19 states. Data from these registries will provide evidence on mortality and morbidity indicators in India, which could help plan



Figure 3. Map of India showing the National Program on Prevention and Control of Cardiovascular Diseases, Diabetes and Stroke (NPCDCS Program), Government of India. Red dots indicate places where it is currently implemented. Stars indicate the Indian states⁴.

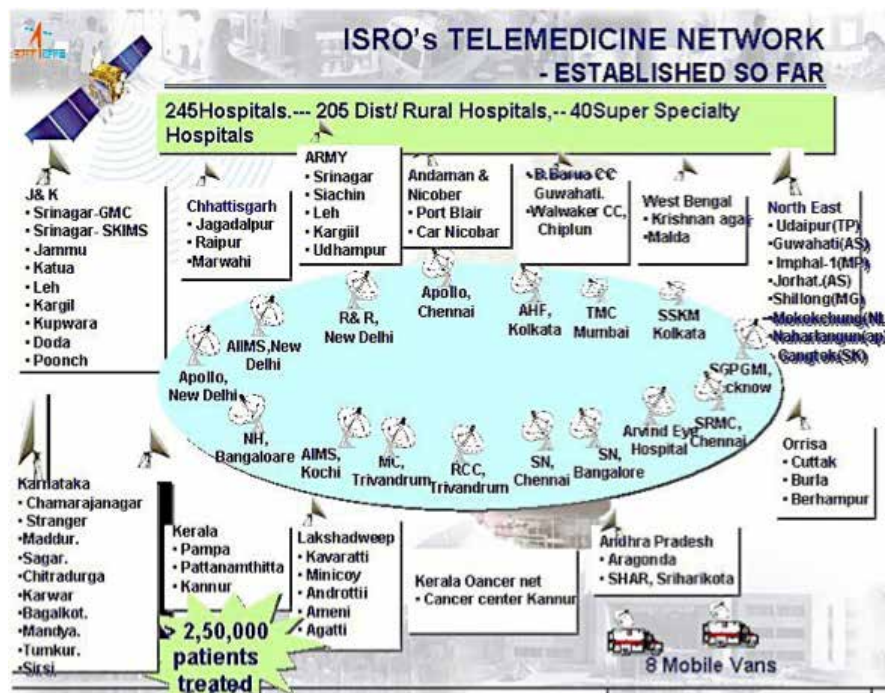


Figure 4. Indian Space Research Organization (ISRO) telemedicine network⁶.



Figure 5. Educational workshop on stroke conducted by Department of Neurology AIIMS.

on stroke⁸. Initiatives include patient awareness programs with lectures and interactions focused on stroke symptoms, the concept of “time is brain,” the need to reach a hospital early and preventive strategies to reduce stroke occurrence; banners, advertisements and write-ups in newspapers along with talk shows on TV and radio

channels are also used.

Studies have shown that lack of physician awareness delayed arrival of stroke patients to a specialized center. CMEs, physician training programs and conferences are regularly held across the country emphasizing the need for recognition and timely therapy and to appraise doctors regarding the newer developments on cerebrovascular disorders. (See Figure 5.) The Indian Stroke Association (ISA) has been organizing a stroke summer school since two years ago to train junior neurologists and physicians.

The annual meetings of ISA are well attended with invited national and

international faculty and deliberations on various aspects of stroke. The national guidelines for the management of stroke in India were developed with an aim to close the gap between best and pragmatic practice. A recent study from an academic hospital in North India observed that education to the emergency staff led to an increased rate of thrombolysis and shortened door to needle time. It is encouraging to see that students trained at academic centers are now promoting stroke awareness and timely treatment in smaller cities.

The Future of Stroke Care in India

We will never be able to treat every stroke in the country for a long time to come. So where should our emphasis lie? *Preventing as many strokes as possible will probably be the best stroke care that we can provide.* At present, many, if not most, strokes are a consequence of modifiable risk factors such as obesity, hypertension and smoking.

Spreading awareness on a war footing and reducing preventable strokes immediately is required. Implementation of mass screening has been recommended to reduce the burden of stroke through identification of people at high risk. Simple, practical and cost-effective measures such as identification and treatment of hypertension in the community will go a long way. Focus also should be on effective implementation, monitoring and evaluation of present stroke programs. A stroke prevented is a much happier situation than a stroke treated. •

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Report of the Membership Committee

BY JACQUES L. DE REUCK

The Membership Committee of the World Federation of Neurology (WFN) will make a special effort during the coming years to attract neurologists of different countries who have difficulties to become part of the WFN, in particular from Africa.

For those countries that do not yet have a national neurological society, we propose to individual neurologists to apply first for Associated Membership, so that they can become familiar with the WFN and later apply for a full membership when they are able to form a national neurological society.

This proposal is not restricted to African neurologists. In order to overcome existing language barriers, we will accept proposals in French or Spanish, that will be translated into English when submitted to the WFN Board and Council of Delegates at the next congress in Santiago, Chile. Contact the chair of the Membership Committee with additional questions and remarks at dereuck.j@gmail.com.

We hope that you will join us, so that the WFN will become more representative and able to stress the importance of neurological diseases in the World Health Organization.

De Reuck is the chairperson of the Membership Committee.

Fifth Congress of the European Academy of Pediatric Societies

BY NINO GOGATISHVILI

With the support of World Federation of Neurology I attended the Fifth Congress of the European Academy of Pediatric Societies Oct. 17-21 in Barcelona.

The organizing societies were the European Academy of Pediatrics (EAP), The European Society of Pediatric and Neonatal Intensive Care (ESPNIC) and The European Society for Pediatric Research (ESPR).

The excellent organization of the congress made it possible for pediatric professionals from around the world to gain unparalleled access to the best scientific research programs. The scientific program

was varied. Abstract topics included: primary care and general pediatrics, neonatology, neonatal brain and development, neonatal pulmonology, neonatal cardiovascular, neonatal nutrition and gastroenterology, neonatal infection, adolescent health, pediatric surgery, cardiology and cardiac surgery, gastroenterology and hepatology/nutrition, neurology and developmental pediatrics, pulmonology/allergy/immunology/asthma, intensive care and pediatric emergency care medicine, hematology and oncology, nephrology, infectious diseases, endocrinology/diabetes/metabolism and pharmacology. My poster, PO-0834, “Long-Term De-

velopmental Outcome of Children Prenatally Exposed To Antiepileptic Drugs” was presented on Oct. 19. My abstract also was published: N.Gogatishvili, T.Ediberidze, G Lomidze, N Tatishvili, S Kasradze. *Arch Dis Child* 2014; 99:Suppl 2 A526 doi: 10.1136/archdischild-2014-307384.1466

I am grateful for the support of World Federation of Neurology that permitted me to attend this important congress and obtain experience that will help me in my work. •

Gogatishvili is with the Institute of Neurology and Neuropsychology, Tbilisi, Tbilisi State Medical University, Tbilisi, Georgia.

INVITATION

12th International Meeting Society of Neuroscientists of Africa
Southern Sun Elangeni & Maharani Hotel
Durban, South Africa
26-30 March 2015



Brain Sciences: Addressing Research Needs and Priorities in Africa

Dear Colleagues:

The 12th International Conference of the Society of Neuroscientists of Africa (SONA) is only a few months away. The biennial SONA meeting is a premier neuroscience conference in Africa. In this regard, it brings together clinicians (among others neurologists, psychiatrists and psychologists) and puts them into contact with basic neuroscientists (physiologists, anatomists and pharmacologists) under the same roof to showcase research advances in the different neuroscience research fields. As an affiliate of the International Brain Research Organization, SONA also has managed to draw interests from scientists living outside of Africa. In keeping with the theme of the conference “Brain Sciences: Addressing Research Needs and Priorities in Africa,” our plenary speakers will give lectures covering topics ranging from neurological consequences of HIV infection to neurodegenerative disorders and addiction.

For the first time at a SONA meeting, we also will be looking at ways to move research from the bench-top to the marketplace, i.e., looking at ways to generate income in order to sustain research in Africa.

The conference will be held March 26-30, 2015, at the Southern Sun Elangeni and Maharani hotel, which is situated on the Durban beachfront. The city of Durban is found on the east coast of South Africa. It has a rich cultural and natural heritage. It is home to four universities with close links to a number of academic hospitals. The University of KwaZulu-Natal, which is one of the sponsors for this conference is home to the world-renowned Center for the AIDS Program in South Africa (CAPRISA) and the KwaZulu-Natal Research Institute for Tuberculosis and HIV (K-RITH).

It gives me great pleasure to invite you to attend the SONA Congress in 2015.

Dr. Musa Mabandla
SONA President



Congress Organiser: Londocor Event Management
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