

2018 Annual Report - Diagnostic Methods Commission

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The Commission on Diagnostic Methods provides a significant opportunity for the International League Against Epilepsy (ILAE) to consolidate, and focus standardized protocols and guidelines for diagnosis of the epilepsies and their co-morbidities that is evidence-based and informed by the ILAE classification system of seizure types and their etiologies. Additionally, the Commission aims to promote the optimal use of technology and the identification of new diagnostic methods that will improve the care of patients with epilepsy worldwide.

In broad terms, the Commission seeks to identify key diagnostic methods for epilepsy, while ensuring there is a strong evidence-base for these diagnostic methods, and translating these identified methods into clinical practice. Working towards realising these broad objectives, there are six task forces, each focused on a different domain, including: Neuropsychology, Neuroimaging, EEG, Clinical Genetics Testing, Autoimmunity/Inflammation, and FCD Classification (Neuropathology).

In 2018, the Commission has continued to work towards achieving these broad objectives through a range of activities led by the six task forces, as outlined below.

Neuropsychology Task Force

- Successfully held the second ILAE Epilepsy and Neuropsychology Course in Provence, France, in April 2018. This course was designed to provide basic education in the neuropsychological approaches used for the diagnosis and treatment of people with epilepsy. It has now been established as a biennial course, with plans underway to hold this course again in China/India in the spring of 2020. Plans are also underway to hold a course targeting clinicians in the Asian and Oceanian region in Vietnam, in September 2019 (see below).
- Three scientific publications are also in various stages of development, with the first addressing minimum standards for neuropsychological assessment in epilepsy surgery in children and adults, and the remaining two expanding on core competencies described in the new ILAE EpiEd Task Force curriculum.

Neuroimaging Task Force

- Successfully held the annual 2018 International Training Course on Neuroimaging in Epilepsy. This course aims to promote education and training in neuroimaging in epilepsy through providing clinicians and scientists with an understanding of fundamentals and practical skills related to state-of-the-art MRI in epilepsy.
- Continued working towards producing scientific publications, which include guidelines for MRI care in adults with epilepsy, a systematic review on MR negative epilepsy, the essentials of MR, and a neuroimaging case report series. At present, one manuscript is currently under review with *Epilepsia*, while the other three are in preparation for submission in early-mid 2019.
- Ongoing development of a web-based interactive neuroimaging tool, which will feature examples of all common epileptogenic lesions organised according to the new ILAE classification system. Once developed, this tool will be freely available to all ILAE members (estimated to be available in early 2019) and will lay the foundation for future content to be developed for a potential web-based neuroimaging course.

EEG Task Force

- Collaborated with the International Federation of Clinical Neurophysiology (IFCN) to establish a joint IFCN-ILAE Task Force on EEG. This joint task force proposed the development of six essential guidelines to address clinical issues concerning neurophysiology in patients with epilepsy. Of these, four guideline proposals have been successfully submitted and approved, with preliminary literature searches underway. The two remaining guideline proposals are currently being finalised for submission.
- Facilitated strategic planning and discussion related to a detailed proposal for the development of an international EEG database for education and research, which in collaboration with the IFCN, will be a web-based, interactive digital EEG atlas.
- Led a number of successful educational initiatives, including the Virtual Epilepsy Academy (VIREPA) courses (i.e., basic, advanced, and paediatric), the fourth edition of the Dianalund Summer School on EEG and Epilepsy, and the first international ILAE EEG in Neonates course, in April 2018. The inaugural EEG in Neonates course covered normal maturational aspects, and abnormal EEG patterns and graphoelements in neonates and infants, as well as the range of seizures and epilepsies encountered in day-to-day practice in the first two years of life.

Clinical Genetics Testing Task Force:

- Task force members met in 2018 to discuss the current state of clinical genetics testing, and to commence planning for the development of an ILAE report, which will provide recommendations pertaining to the point at which genetic testing is appropriate.

Autoimmunity/ Inflammation Task Force

- Task force members met regularly throughout 2018 to discuss the definitions of autoimmune epilepsy and amass information that will form the basis for a number of manuscripts planned for submission in 2019.

FCD Classification (Neuropathology) Task Force

- Successfully held the annual ILAE course on Neuropathology and Epilepsy surgery. This course is designed to enable participants to be better able to recognise and classify various histopathological substrates of pharmaco-resistant epilepsy.
- Task force members met to discuss recent research developments since the last FCD classification was published in 2011. A plan has been devised for how this classification will be revised, taking into account the available molecular and genetic data, and how their findings will be disseminated going forward.

In 2019 and beyond, the Commission plans to continue working on many of these task force-led initiatives and activities, in line with the overarching goals of the Diagnostic Methods Commission. Task force-led activities in 2019 will include the activities outlined below.

Neuropsychology Task Force

- A number of educational initiatives, including:
 - The first *Neuropsychological Diagnosis, Management and Treatment of People with Epilepsy* course to be held in Vietnam, in September 2019. This course will be targeted towards neurologists and psychologists who do not have specialist neuropsychological training, and the curriculum will be largely based on the Neuropsychology Task Force's prior two *Expectations and Indications* (minimum standards) papers.
 - A two-hour workshop based on the task force's *10 Things Paper* at the International Epilepsy Congress (IEC) in June 2019. An application to hold this workshop has been submitted and is currently under review.
 - A symposium at the Fourth African Epilepsy Congress to provide an overview of the role of neuropsychologists in the care of people with epilepsy, and the ILAE resources available to help practitioners in the field. By holding this symposium, the Neuropsychology Task Force hopes to forge links and create a global network of psychologists who can provide input and guidance to the future activities of the Task Force, ensuring it continues to serve the interests of people with epilepsy worldwide. An application to hold this course has been submitted and is currently under review.
- Continued work to produce a number of manuscripts planned for submission in 2019. These include: (1) guidelines for basic assessment in epilepsy surgery, (2) ten things neurologists should know about neuropsychological assessment in epilepsy, and (3) a case study series to be generated from the teaching course. In addition, discussion will be held regarding future

publications on the topics of neuropsychology and intellectual disability, and standards for assessing the impact of antiepileptic medications on cognition.

- Continued work in the development of a clinical toolkit for neuropsychologists, which will include:
 - Research on predicting outcomes following epilepsy surgery. This will form part of a big data project resulting in its publication, and a freely available algorithm on the ILAE website that all professionals can use to identify pre-surgical patients most at risk of postoperative memory decline.
 - Development of an ILAE approach to standardise the taxonomy of diagnostic outcomes of neuropsychological assessment with clear associated operational definitions of outcomes.
 - Conduction of an international survey of neuropsychological provision in epilepsy services to identify key gaps in existing care, and provide targeted recommendations for improvement.

Neuroimaging Task Force

- A number of educational initiatives, including the annual International Training Course on Neuroimaging in Epilepsy in May 2019, and a Neuroimaging in Epilepsy Education Day at the IEC in Bangkok in June 2019.
- Submission of a number of manuscripts for publication in early-mid 2019 (see above for specific details of these), in addition to commencement of planning and development of a freely available Epilepsy Imaging Textbook, which is estimated to be completed by December 2021.

EEG Task Force

- Continued work with the joint ICFN-ILAE Task Force within the four active guideline workgroups to develop detailed guidelines for clinical practice and improved care of patients. These workgroups include: (1) minimum standards for long-term video-EEG monitoring; (2) minimum standards for recording routine and sleep EEG; (3) automated seizure detection devices; and (4) role of EEG in diagnosing epilepsy in patients with first seizure.
- A number of ongoing educational initiatives, including the VIREPA course and a second ILAE course on EEG in Neonates. The fifth edition of the Dianalund Summer School is planned to be held in 2020, and will be extended beyond the European region.

Clinical Genetics Testing Task Force

- Continued work towards producing an ILAE report, which outlines guidelines on management of developmental and epileptic encephalopathies (DEE) in adults.
- Plan to conduct a global survey of current clinical genetic testing practices to identify key gaps and lay the background for an impending update on guidance for clinical genetic testing in the epilepsies.

- Commence planning and preparation for an upcoming workshop at the ILAE meeting in Geneva in 2020.

Autoimmunity/Inflammation Task Force

- Continued work towards producing an ILAE report highlighting the clinical features of autoimmune epilepsy syndromes and diagnostic scoring systems to help identify patients. It is planned that the information from this report will be disseminated over a series of publications, which will be submitted by mid-2019. In addition, the task force is also considering creating an online reference for vignettes, videos, and imaging in autoimmune disorders that would be accessible to ILAE members worldwide.
- Approval has been granted to conduct two symposia on the subject of autoimmune epilepsy disorders at the IEC in Bangkok, in June 2019.

FCD Classification (Neuropathology) Task Force

- Continued work towards conducting and publishing the results of scientific studies designed to generate the first update of the FCD classification. A draft of the classification update will be generated in 2019, with final completion and submission to *Epilepsia* estimated for 2020.
- The development of the classification will be augmented by a three-day FCD summit scheduled for September 2019, where experts in the field (beyond those of the committee) will meet to discuss the topic of FCD in depth. The ensuing lectures and discussions will form part of the justification for the new FCD classification.
- Continued educational initiatives, including the 10th annual ILAE course on Neuropathology and Epilepsy Surgery, scheduled to be held in Brazil in August 2019.

In addition to the above, the work of the Commission and its task forces in 2019 and beyond will rely on collaborative efforts with other ILAE commissions to achieve its goals.

Sarah Wilson
Chair, Diagnostic Methods Commission