

## Diagnostic Methods Commission

### 2022 Annual Report

#### MEMBERS

Sallie Baxendale (UK), chair  
Sarah Wilson (Australia)  
Eva Fung (Hong Kong)  
Paolo Federico (Canada)  
Roberto Caraballo (Argentina), MC  
liaison



**Photo: Faculty and students at the 3rd International Neuropsychology Course in Epilepsy, Bordeaux, France, March 2022.**

This is the first formal annual report of the Diagnostic Methods Commission (DMC) following the changes to the task force composition that took effect in 2021. We have slimmed down from six task forces to four. The Autoimmune Task Force was not renewed due to difficulties in establishing a core group and the work of the Genetics Task Force has been subsumed into the activities of the Genetics Commission. The DMC is now comprised of 4 task forces: Neuropsychology, Neuropathology, the EEG Task Force, and the Neuroimaging Taskforce.

#### NEUROPSYCHOLOGY

##### TASK FORCE

Mary Lou Smith (Canada), chair  
Sallie Baxendale (UK)  
Genevieve Rayner (Australia)  
Gus Baker (UK)  
Sarah Wilson (Australia)  
Bruce Hermann (USA)

Carrie McDonald (USA)  
Aimee Dollman (South Africa)  
Vicki Ives-Deliperi (South Africa)  
Urvashi Shah (India)  
Mayu Fujikawa (Japan)

- The Neuropsychology Task Force consists of 12 members representing a wide geographic representation: Australia, Canada, England, India, Japan, the United States, and South Africa. In addition, we have several ex officio members contributing to our specific projects. We have identified four separate projects for completion this term. Working committees for each project have been constituted and the work has begun in all areas.

- What I wish I had known: identifying gaps in service provision for newly diagnosed patients (Task Force Lead: Gus Baker; in collaboration with the IBE and the ILAE Psychoeducation Task Force). People with a new diagnosis of epilepsy are not always provided with information on what to expect with respect to treatment, prognosis, comorbidities etc. Research articles are not published specifically for people with epilepsy (PWE). These two conditions result in gaps in service provision and lack of knowledge translation. The goal of this project is to identify existing resources and needs and to develop a tool kit for PWE and care providers.
- Epilepsy Futures: Technological innovations – uses in and influences on neuropsychological assessment (Task Force Lead: Genevieve Rayner). This project will address how and where neuropsychological practice is evolving, with the recent shift in methods of service provision during the pandemic and the introduction of hardware and software innovations. Topics include how we use the following examples in assessment, interpretation, and treatment recommendations: algorithms, identification of phenotypes or nomograms, genotypes, neuroimaging signatures, etc.
- The International Classification of Cognitive Disorders in Epilepsy (Task Force Leads: Carrie McDonald and Bruce Hermann, in collaboration with the International Neuropsychological Society). The goal of this project is to establish harmonization in how we diagnose and describe cognitive disorders in PWE. As a start, it is intended that the code will be used as a research tool, with hopes that it will eventually be used as a clinical tool. Work is underway to test it with large existing data sets, with plans for extending to a wider range of tests, dealing with issues of norms, establishing better phenotyping, expanding the geographic diversity so that it will have widespread international applicability.
- Consensus Statement on reporting the impact of epilepsy treatments on neuropsychological function (Task Force Lead: Sallie Baxendale; in collaboration with the ILAE Guidelines Commission). The goal of this project is to lay out the minimal expectations for reporting on the effects of epilepsy treatments on neuropsychological function, and thus to prevent the reporting of a selective subset of measures that may not accurately reflect the spectrum of side effects.
- Presentation of a symposium, “The Contribution of Neuropsychology to the Care of People with Epilepsy”, at the North American Epilepsy Congress, 5-8 May 2022. This symposium featured the recent and ongoing work of the Neuropsychology Task Force in highlighting the multifaceted contributions of neuropsychology and in developing recommendations for neuropsychologists and other professionals. The presentations covered ILAE publications on the indications and expectations for neuropsychological assessment and treatment in both routine epilepsy care and in the specialized application to epilepsy surgery in children and adults.
- The 3rd ILAE International Training Course on Neuropsychology in Epilepsy was held in March 2022 (see report from the Education Council for further details). As an offshoot of the course, two neuropsychology special interest groups have been developed, with

the input and/or coordination by members of the Neuropsychology Task Force; one group is focusing on adults with epilepsy and the other on children with epilepsy. Both have international membership and have allowed us to extend our training efforts on an ongoing basis.

- Publication of the Neuropsychology & Epilepsy Casebook. November 2021. This special edition presents a series of instructive case studies that demonstrate the breath of impact that a neuropsychological assessment can have on the diagnosis and management of someone with epilepsy. These cases have been largely drawn from the teaching cases used in the ILAE Neuropsychology Summer School. The thread that draws all these cases together is the pivotal role neuropsychology played in the case, not as a stand-alone investigation but as information that must be integrated to the wider clinical picture for every patient. Each case concludes with a clear ‘take home message’ for clinical practice.

## **NEUROPATHOLOGY**

### TASK FORCE

Ingmar Blumcke (Germany), co-chair  
Imad Najm (USA), co-chair  
Eleonora Aronica (Netherlands)  
Laura Tassi (Italy)  
Caterina Giannini (USA)

Fernando Cendes (Brazil)  
Hajime Miyata (Japan)  
Armin Nikpour (Australia)  
Patricia Okiro (Kenya)

The LEAT Task Force engaged in the monthly postsurgical case discussion series of the EpiCare European Reference Network which met online every 2nd Thursday per month (13.00h CET) to review and discuss brain tumour diagnosis. The joined venture with the ERN histopathology working group chaired by Dra. Angelika Mühlebner proved most helpful, and we will have our kick-off meeting to discuss the roadmap for terminology use, integration of genotype-phenotype associations and grading schemes in the beginning of 2023. A first face-to-face meeting is planned during the IEC in Dublin (pending financial support for non-ILAE members, as requested in the budget proposal).

## **NEUROPHYSIOLOGY (EEG)**

### TASK FORCE

Stefan Rampf (Germany), chair  
Sandor Beniczky (Denmar)  
Hela Zouari (Tunisia)  
Daniel Gams Massi (Cameroon)  
Firas Fahoum (Israel)  
Louis Maillard (France)  
Jayanti Mani (India)

Luis Carlos Mayor-Romero (Colombia)  
Margitta Seeck (Switzerland)  
William Tatum (USA)  
Kollencheri Vinayan (India)  
Nobukazu Nakasato (Japan)  
Fabio Nascimento (USA)  
Manjari Tripathi (India)

- During 2022, the main focus of the task force lay on proceeding and finalizing ongoing projects, which had been started during the previous term. The ILAE glossary of seizure semiology terms and their significance (project lead: Sándor Beniczky) was completed and published in *Epileptic Disorders* in June (1). This educational topical review is directly related to the ILAE curriculum and provides an overview of semiological signs and symptoms, accompanied by Video-EEG examples. The clinical practice guidelines (CPG) on minimum standards for recording routine and sleep EEG were also completed. The manuscript was open for public comments until July. The final manuscript has been accepted for concurrent publication in *Epilepsia* (ILAE) and *Clinical Neurophysiology* (IFCN).
- The ongoing joint IFCN-ILAE CPG project on guidelines and recommendations for minimal standards for electric source imaging (ESI) in epilepsy surgery (project lead: Stefan Rampf) has completed the evaluation of available evidence as well as the discussions on minimal standards for ESI application in practice. The manuscript is currently being drafted. Furthermore, the project on EEG after a first seizure (project lead: Margitta Seeck) has completed literature search for the planned systematic review. Meta-analysis of the results is currently under way.
- The task force has also participated in DICOM working group 32 (WG-32), which aims to extend the current DICOM standard to include scalp and invasive EEG and MEG. Progress has been summarized in a recent publication (2).
- In addition to these ongoing projects, the task force evaluated new project suggestions to be commenced in 2023. Due to partial overlap of some of the potential projects with past and present work of the American Clinical Neurophysiology Society (ACNS), potential collaborations with the ACNS have been discussed.
- In 2022, the ILAE glossary of seizure semiology terms and their significance was completed and published in *Epileptic Disorders* in June (1). Furthermore, the clinical practice guidelines (CPG) on minimum standards for recording routine and sleep EEG were also completed. The final manuscript has been accepted for double publication in *Epilepsia* (ILAE) and *Clinical Neurophysiology* (IFCN).
- In two other CPG projects, some of planned work packages could be completed: CPG on ESI in epilepsy surgery finalized evaluation of available evidence as well as the expert consensus on a minimal standard for ESI in practice. CPG on EEG after a first seizure completed literature review for the planned systematic review.
- The task force further contributed to establishing EEG within the DICOM standard and initiated discussion with the ACNS regarding potential collaboration.

## NEUROIMAGING

### TASK FORCE

Anna Elisabetta Vaudano (Italy), chair  
 Fernando Cendes (Brazil)  
 Paolo Federico (Canada)  
 Stefan Rampf (Germany)

Shuang Wang (Canada)  
 Lorenzo Caciagli (USA)  
 Elaine Kobayashi (Canada)  
 John Archer (Australia)

Irene Wang (USA)

Boris Bernhardt (Canada)

Yotin Chinvarun (Thailand)

Luis Concha (Mexico)

Bill Gaillard (USA)

Godwin Ogbole (Nigeria)

Gavin Windston (Canada)

- The Neuroimaging Task Force organised a full-day NeuroImaging Course “What the Clinician Should know” for 2022 European Epilepsy Congress in Geneva. The course took place on the 9th of July 2022. It was full booked; feedbacks were very good and encouraging. Developing and completion of the first NeuroImaging VIREPA course. The course started on 12 November 2021 and ended on the 7 April 2022. At this first edition, the course was opened to a total number of 20 students. The course was full-booked mainly from young epileptologists/radiologists around the world, particularly from low-middle resource countries. The course was structured in 6 Units covering the basic and advanced aspects of Neuroimaging in Epilepsy.
- We are in the process of developing and updating the second edition of the NeuroImaging VIREPA course. The course started on the 11 November 2022 and will end on 16 April 2023. This year the course was extended to 30 participants. The course was perfected from the first edition with the (1) introduction of Video Tutorials for each Unit; (2) real-life clinical examples (one for each Unit, except the introductory one). The clinical cases were the same of the ILAE neuroimaging tutorless course (established on 2020). The course obtains 38 credits.
- We have continued to work to produce scientific educational neuroimaging case report series. One has been published (See Publications), the second was submitted for publication in December 2022.
- Unilateral perisylvian polymicrogyria and mesiotemporal seizures: Imaging and surgical workup in an enigmatic case. Lorenzo Caciagli, Adam Greenblatt, Anna Elisabetta Vaudano, John Archer, Boris C. Bernhardt, Fernando Cendes, Yotin Chinvarun, Luis Concha, Paolo Federico, William D. Gaillard, Eliane Kobayashi, Godwin Ogbole, Stefan Rampp, Zhong Irene Wang, Shuang Wang, Ashley Tranquille, Jacob G. Dubroff, Joel M. Stein, Kathryn A. Davis, Dani S. Bassett. Submitted December 2022.
- Two research projects have been started during the past year and are still ongoing:
  - The when’s and why’s of functional MRI in focal epilepsy: A systematic review and meta-analysis. A research project aiming to critically appraise the extant literature on functional MRI (fMRI) in focal epilepsy by addressing, the when’s, what’s, why’s of an fMRI study throughout a systematic literature review and meta-analysis. Initial outline of the project has been discussed and approved within the Neuroimaging Task Force. Leaders: Lorenzo Caciagli, Anna E Vaudano.
  - MRI essentials in infants with epilepsy: Consensus Review and Recommendations. A research project aiming to produce a consensus protocol for imaging in infants and to discuss its practical applications for the investigation of 1. children presenting with a first seizure; and 2. with newly-diagnosed epilepsy. Initial outline of the project has been already discussed and approved by the taskforce. Leaders: Anna E Vaudano, William Gaillard.: A

working group of experts, composed by pediatric neurologists with expertise in epilepsy, pediatric neuroradiologists with expertise in infants, has been already formed under the auspices of the Neuroimaging Task Force. The first working group meeting took place the 27th of September 2022. Preliminary literature search has been started by AE Vaudano and the librarian services of UniMoRe (University of the Neuroimaging Task Force chair, AE Vaudano) but a methodological support is needed to achieve the goal of the project (specific budget has been requested)

## ACCOMPLISHMENTS

- The ILAE glossary of seizure semiology terms and their significance (project lead: Sándor Beniczky) was completed and published in *Epileptic Disorders* in June.
- The clinical practice guidelines (CPG) on minimum standards for recording routine and sleep EEG were completed. The final manuscript has been accepted for double publication in *Epilepsia* (ILAE) and *Clinical Neurophysiology* (IFCN).
- Successful completion of the VIREPA NeuroImaging course, first edition 2021-2022
- Production of two educational neuroimaging case reports series
- Successful completion full-day NeuroImaging Course at the EEC 2022 in Geneva
- Instigation of monthly postsurgical case discussion series of the EpiCare European Reference Network.
- Presentation of a symposium, “The Contribution of Neuropsychology to the Care of People with Epilepsy”, at the North American Epilepsy Congress, 5-8 May 2022.
- The 3rd ILAE International Training Course on Neuropsychology in Epilepsy was held in March 2022
- Establishment of two neuropsychology special interest networks (adult/child)
- Publication of the *Neuropsychology & Epilepsy Casebook*. November 2021. This special edition presents a series of instructive case studies that demonstrate the breath of impact that a neuropsychological assessment can have on the diagnosis and management of someone with epilepsy.

## HIGHLIGHTS

- Publication of the ILAE glossary of seizure semiology terms and their significance
- Completion of CPG on minimum standards for recording routine and sleep EEG
- Publication of the *Neuropsychology & Epilepsy Casebook*

## RESEARCH AND PUBLISHED ARTICLES

- Beniczky S, Tatum WO, Blumenfeld H, Stefan H, Mani J, Maillard L, Fahoum F, Vinayan KP, Mayor LC, Vlachou M, Margitta S, Ryvlin P, Philippe K. Seizure semiology: ILAE glossary of terms and their significance. *Epileptic Disord.* 2022 Jun 1;24(3):447-495. English. doi: 10.1684/epd.2022.1430. PMID: 35770761.
- Halford JJ, Brinkmann BH, Clunie DA, Gotman J, Beniczky S, Rampp S, Rémi J, Husain A, Andrew Ehrenberg J, Winkler S. Continued progress in DICOM neurophysiology

standardization. *Clin Neurophysiol.* 2022 Dec 28;147:11-13. doi: 10.1016/j.clinph.2022.12.008. Epub ahead of print. PMID: 36610358.

- Imaging characteristics of temporopolar blurring in the context of hippocampal sclerosis. Clavijo Prado CA, Federico P, Bernasconi A, Bernhardt B, Caciagli L, Concha L, Chinvarun Y, Jackson G, Morgan V, Rampp S, Vaudano AE, Wang I, Wang S, Zaidan BC, Rogerio F, Cendes F. *Epileptic Disord.* 2022 Feb 1;24(1):1-8. doi: 10.1684/epd.2021.1378.
- The Neuropsychology Case Book (2022) Editor S. Baxendale. A collection of ten case studies collated in an Open Access Special Issue of *Epilepsy & Behavior Reports*.

## MEETINGS

We have held two zoom meetings over the course of the year and had one hybrid meeting in Geneva. The individual task forces meet very regularly, with some on a monthly/bimonthly basis. A full commission meeting is planned for Dublin in 2023.

*Report submitted by Sallie Baxendale*