

Final Report

ESO Emerging Leaders Programme 2024–2026

Participant: Dr. Marieta Peycheva, PhD (Bulgaria)

Supervisor: Prof. Dr. Anna Bersano (Italy)

1. Attendance at ESO Events and Working Groups

During the ESO Emerging Leaders Programme, I actively participated in numerous scientific and educational activities organised by the **European Stroke Organisation (ESO)**, including workshops, webinars, collaborative meetings, and working groups with fellow Emerging Leaders.

My first key educational experience within the programme was participation in the **11th ESO Edinburgh Stroke Research Workshop**, which provided an excellent platform to discuss current advances in stroke research, develop project ideas, and foster collaboration among early-career investigators. This workshop was an important starting point for my project, as it allowed me to receive valuable feedback from experts and colleagues that helped refine and strengthen my initial research concepts.

Link to my detailed report:

<https://eso-stroke.org/insights-from-11th-eso-edinburgh-stroke-research-workshop/>

I also participated in several focused educational activities related to **cerebral amyloid angiopathy (CAA)**, including the **ESO Focused Workshop on CAA in March 2025**. These events significantly deepened my understanding of recent developments in cerebral small vessel diseases, including modern diagnostic approaches, neuroimaging criteria, and management strategies for complex clinical scenarios such as CAA-related inflammation, iatrogenic CAA, CAA patients and atrial fibrillation. The workshop was organised by **Prof. Anna Bersano**, my mentor in the programme, and represented my first visit to her institution, the **Carlo Besta Neurological**

Institute in Milan, where I had the opportunity to meet her team and interact with leading international experts in CAA.

One of the most valuable experiences during the programme was a **one-week department-to-department observership at the Carlo Besta Neurological Institute in Milan**, under the mentorship of Prof. Anna Bersano. During this visit, I gained hands-on insight into the multidisciplinary management of rare cerebrovascular diseases, including Moyamoya disease, CADASIL, and cerebral amyloid angiopathy. I also observed the close integration of advanced neuroimaging, biomarker research, neurosurgery, and endovascular treatments in complex cases. This experience was highly inspiring and significantly influenced my clinical and research perspectives, particularly in developing multidisciplinary approaches for patients with rare cerebrovascular disorders.

Link to my detailed report:

<https://eso-stroke.org/blog-d2d-report-marieta-peycheva/>

Another major milestone of the programme was my participation in the **European Stroke Science Workshop (ESSW) in Garmisch, Germany (20–22 November 2025)**. This meeting provided an exceptional opportunity to interact with leading European stroke experts, discuss ongoing research initiatives, and establish potential collaborations. The programme also offered valuable insights into leadership development, academic networking, and the organisation of international stroke research initiatives.

An especially enriching aspect of the programme was my participation as a **moderator** in several **ESO webinars** and as a **member of the ESO Webinar Working Group**, which further strengthened my communication, leadership, and scientific discussion skills within an international academic environment.

I also participated as a **speaker in the WISE (Women Initiative for Stroke in Europe) webinar “Challenges and Opportunities During Lifelong Academic Career Pathways” on 5 February**, where I delivered a lecture entitled *“Every Beginning Has Its Magic – The Challenges During Early Career.”* This topic is particularly meaningful to me, as part of my research focuses on

gender balance in research and stroke care, as well as the importance of supporting early-career researchers.

A particularly memorable experience was my participation in **ESOC 2025**, where I served as a member of the **Public Relations Committee**. In this role, I contributed to the preparation of press releases for three major clinical trials presented at the conference and conducted an interview with **Professor Bruce Ovbiagele** about the study “Efficacy of Blood Pressure Control Among Stroke Survivors” for **ESOC TV**.

Link to the interview with Professor Bruce Ovbiagele:

<https://www.youtube.com/watch?v=6dl4bN9CsNE>

This experience provided valuable insight into the extensive preparation and coordination required to organise a major international scientific conference. Observing the planning and communication strategies behind such a large-scale event was extremely valuable and will likely help me contribute to the organisation of future national and international conferences. This is particularly relevant as I have recently been elected to the Executive Board of the Bulgarian Association of Neurosonology and Cerebral Hemodynamics.

Another important component of my ESO activities was my participation in the **ESO Guideline Working Group on Pre-hospital Stroke Management**, where I have the chance to contribute to reviewing current evidence, analysing available data, and participating in the development of evidence-based recommendations. In addition, I am currently a member of the **ESO White Paper Module Working Group (MWG) on Cerebral Amyloid Angiopathy**, an ongoing collaborative activity within the ESO community.

I would also like to acknowledge the valuable collaboration developed with my colleagues **Dr. Rytis Masiliūnas** and **Dr. Lina Palaiodimou** during the programme. I am particularly grateful to Dr. Masiliūnas for inviting us to speak at the **Annual Meeting of the Lithuanian Stroke Organisation**. I am also very grateful to my colleagues as they kindly accepted my invitation and delivered lectures at the **XI National Congress of the Bulgarian Association of Neurosonology and Cerebral Hemodynamics**. Together, we are currently collaborating on two multinational

surveys addressing **pre-hospital stroke management** and **diagnostic and treatment challenges in cerebral amyloid angiopathy**. I would especially like to highlight this collaborative aspect of the programme, as it has been a great pleasure and honour to work with such highly motivated and inspiring colleagues.

I would like to sincerely thank the ESO Emerging Leaders Programme for providing me with this valuable opportunity to enhance my understanding of international research collaboration, guideline development, and advances in stroke care. These experiences have had a substantial impact on my professional development by strengthening my research skills, expanding my professional network, and providing valuable mentorship opportunities within the European stroke community.

2. Returning the Learning

An important part of my participation in the ESO Emerging Leaders Programme has been the active dissemination of the knowledge and experience gained through the programme within my institution and the wider medical community.

I contribute to ESO educational activities as a **member of the ESO Webinar Working Group** and the **ESO eSTEP Platform Working Group**, supporting the development and delivery of educational content for the international stroke community.

At the **Medical University of Plovdiv, Department of Neurology**, where I serve as **Educational Activities Coordinator**, I am actively involved in undergraduate and postgraduate medical education. Each year I teach four groups of medical students, four groups of dental students, and one group of students in the specialty “Assistant of the Doctor.” I also mentor medical students interested in neurology and stroke research. In addition, I organise and deliver neurosonology lectures and practical training courses for neurology residents, which were conducted in 2024, 2025, and 2026.

I also lead a locally funded research initiative as **Principal Investigator of the project “Follow-up of Cerebrovascular Abnormalities” (No. 23/2024)**, funded by the **Medical University of Plovdiv, Bulgaria**, which actively involves medical students in research activities.

As part of my commitment to knowledge dissemination, I have presented lectures at several **national and international scientific meetings**, including:

- Annual Meeting of the Lithuanian Stroke Organisation, 11–12 April 2025
- XI National Congress of the Bulgarian Association of Neurosonology and Cerebral Hemodynamics, 21–22 November 2025
- XVI National Conference for Rare Diseases and Orphan Drugs, Plovdiv, Bulgaria, 12–13 September 2025
- Military Medical Academy, Sofia, Bulgaria, 25–26 September 2026
- Astghik Medical Center / Yerevan State Medical University, Yerevan, Armenia, 21 February 2026

Through these activities, I aim to disseminate the knowledge and experience gained through the ESO programme, contribute to medical education, and promote the development of improved cerebrovascular care and stroke research in Bulgaria and Europe.

3. Completion of the Project

Project title “Virtual Hospital for Patients with Cerebral Amyloid Angiopathy (CAA) in Bulgaria”

Background and Rationale

Cerebral amyloid angiopathy (CAA) is a common cerebral small vessel disease caused by deposition of amyloid- β in the walls of cerebral blood vessels. It is a major cause of spontaneous lobar intracerebral haemorrhage and contributes significantly to age-related cognitive decline. International studies suggest that CAA is present in approximately 20% of the elderly population, up to 50% of patients with Alzheimer’s disease, and around 25% of intracerebral haemorrhages.

Despite this high prevalence, CAA remains largely under-recognised in Bulgaria. Currently, the country lacks a national CAA registry, a dedicated reference centre, and standardised diagnostic and management pathways. As a result, patients presenting with lobar haemorrhage, unexplained transient neurological symptoms, or progressive cognitive decline are often treated without a formal CAA diagnosis. This may lead to inappropriate therapeutic decisions, missed opportunities

for secondary prevention, and inadequate long-term follow-up. In addition, the absence of coordinated infrastructure limits the collection of epidemiological data and participation in international research collaborations.

Project Aim

The aim of this project is to establish a national system for the diagnosis, management, and research of CAA in Bulgaria through the creation of a Virtual Hospital model and a national CAA registry.

Objectives

1. Assess current knowledge, clinical practice, and barriers related to CAA diagnosis and management among Bulgarian healthcare professionals.
2. Establish a national CAA reference centre providing multidisciplinary virtual consultations.
3. Build a national and international network of CAA specialists in collaboration with leading European centres.
4. Develop the first national registry of patients with CAA in Bulgaria.
5. Promote standardised diagnostic pathways including MRI protocols, laboratory testing, PET imaging, genetic testing, and cognitive evaluation.
6. Develop follow-up and treatment strategies for complex clinical scenarios such as CAA with atrial fibrillation and CAA-related inflammation.

Methods

The project is implemented through three interconnected components.

1. Needs Assessment

In the first phase of the project a **national survey was conducted among 108 Bulgarian physicians from different centres across the country**, including neurologists, radiologists, neurosurgeons, general practitioners, psychiatrists, physiotherapists, and anesthesiologists. The survey aimed to assess current knowledge, clinical practices, and barriers related to the diagnosis and management of CAA. The results revealed significant gaps in awareness, diagnostic

confidence, and access to specialised investigations, highlighting the urgent need for a coordinated national approach to CAA diagnosis and care in Bulgaria.

2. Virtual Hospital Model

Based on the experience gained from the Neuro Virtual Hospital (NOVHO) system at the Carlo Besta Neurological Institute in Milan, the project proposes the establishment of a Virtual Hospital for CAA in Bulgaria.

This system enables multidisciplinary consultations for complex cases, both onsite and via telemedicine, involving neurologists, neuroradiologists, and other specialists.

Local team members:

- Dr. Marieta Peycheva – Neurologist
- Assoc. Prof. Dr. Georgi Slavov – Neurologist
- Prof. Dr. Dora Zlatareva – Radiologist
- Dr. Tina Zdravkova – Radiologist

The established expert center supports evaluation of patients with suspected CAA and provides recommendations for diagnostic investigations such as advanced MRI protocols, laboratory testing, and cognitive assessment, as well as guidance on treatment strategies.

3. National CAA Registry

A central component of the project is the creation of the first national CAA registry in Bulgaria.

To date, the local team has conducted consultations on 89 patients with suspected CAA, identified through university hospital databases, referrals from other hospitals and specialties, and MRI laboratory networks.

The registry is currently under development to systematically collect data on clinical presentation, neuroimaging findings, diagnostic procedures, treatment strategies, and patient outcomes. This

infrastructure will enable the generation of reliable epidemiological data and facilitate participation in international research networks.

International Collaborations

The project has been strongly supported by international collaborations, particularly with the Carlo Besta Neurological Institute in Milan, including:

- Participation in the ESO Focused Workshop on CAA (March 2025)
- Department-to-Department observership (September 2025)
- Participation in the ESO White Paper Working Group on Cerebral Amyloid Angiopathy
- Development of a COST Action project application (CONTAINER) involving researchers from 30 European countries

In addition, collaborations with other ESO Emerging Leaders have been established, including the dissemination of a multinational survey investigating diagnostic and treatment challenges in CAA across Europe.

Awards

The project was presented at the XVI National Conference for Rare Diseases and Orphan Drugs (Plovdiv, Bulgaria, 12–13 September 2025) and received First Prize in the category of original and review studies.

Publications

A manuscript titled “Identifying Diagnostic and Treatment Challenges in Cerebral Amyloid Angiopathy: Results from a Multicenter Bulgarian Survey” is currently in preparation and planned for submission to a journal later this year.

Expected Future Outcomes

The project is expected to lead to several important outcomes:

- Improved recognition and diagnosis of CAA in Bulgaria

- Development of standardised diagnostic pathways
- Establishment of a national CAA reference centre and registry
- Integration of Bulgaria into European CAA research networks, including the COST Action project CONTAINER

I would like to sincerely thank the Executive Board of the European Stroke Organization for the opportunity to participate in the ESO Emerging Leader Programme. I would also like to extend my gratitude to my supervisor in the programme, Prof. Dr. Anna Bersano, for her guidance, encouragement, and mentorship throughout this programme. I look forward to continuing to contribute to the mission of ESO and to the advancement of stroke research and care across Europe.

Date 13 March 2026

Author of the report:

Plovdiv, Bulgaria

Dr Marieta Peycheva

A handwritten signature in black ink, appearing to read 'M Peycheva', written in a cursive style.