



Neurological diseases and arboviruses: preparing for the next epidemic

WORKSHOP REPORT

Our workshop took place on the 30th November 2019 in Recife, Pernambuco, Northeast Brazil. There were 22 attendees, including healthcare practitioners, medical residents and students. Our workshop was developed by ZikaPLAN (Zika Preparedness Latin American Network) collaborators from FioCruz Pernambuco (Dr Cristiane Bresani, Dr Fátima Militão), Hospital da Restauração (Dr Lúcia Brito) and the University of Liverpool (Dr Suzannah Lant). Our aims were to stimulate an interest in research among healthcare professionals and provide training on how to undertake research in public hospitals and community settings. We hoped to build local research capacity and increase preparedness for future outbreaks. Recife was at the centre of the Zika epidemic in Brazil, and it was here that the association between Zika and neurological syndromes such as microcephaly, encephalitis and myelitis was first recognised. We designed sessions based on our experience of researching neurological disease during the Zika outbreak, when healthcare services and research institutes had worked collaboratively.

After an introductory talk from Luiza Lourenço on the REDe initiative (the EU-funded Zika Consortia Research Capacity Network), we began with lectures on neurological diseases associated with arbovirus infection: Guillain-Barré Syndrome (GBS) and myelitis (Dr Lúcia Brito) and meningoencephalitis and acute disseminated encephalomyelitis (Dr Rita de Cássia Leal). Followed by a session on laboratory diagnosis of arboviruses (Jurandy de Magalhães). Dr Lúcia Brito, MD, is a neurologist at Hospital da Restauração, Pernambuco, Brazil, and a specialist in neuro-immunological disease. She was one of the first doctors in Brazil to recognize the link between Zika and central nervous system disease. Dr Rita de Cássia, PhD, is a neurologist specialising in neuromuscular and peripheral nerve disease and a professor at the Catholic University of Pernambuco. Jurandy de Magalhães is a biomedical scientist at the arbovirus state reference laboratory at LACEN/PE (Central Laboratory of Public Health of Pernambuco) and a professor at the University of Pernambuco (UPE).



From a research skills perspective, we focused on how to formulate a research question, design and implement a clinical research protocol and manage a study (Dr Cristiane Bresani), followed by a session on how to present, write up and publish research (Dr Cynthia Braga). Dr Cristiane Bresani, PhD, is a general medicine physician and researcher at Fiocruz Pernambuco. Dr Cynthia Braga, PhD, is a researcher and professor at Fiocruz Pernambuco and editor of the Brazilian Journal of Mother and Child Health.

Our next session was a round table discussion – broadcast live by webinar - between Dr Celina Turchi, Dr Democrito Miranda-Filho and Dr Cristiane Bresani, who shared their experience of working in the 2015-16 Zika epidemic. We then had an interactive session with discussion between participants and researchers on the topic of carrying out research within healthcare services. Dr Celina Turchi, PhD, is a researcher at Fiocruz Pernambuco and is the lead coordinator of the MERG (Microcephaly Epidemic Research Group, Pernambuco-Brazil). For her pioneering work in the Brazilian Zika epidemic, Dr Turchi was recognized by the journal, Nature, as one of the top 10 scientists in 2016 and by TIME magazine as one of the 100 most influential people in 2017. Dr Democrito Miranda-Filho, PhD, is an infectious diseases expert, researcher and professor at UPE and a member of MERG.

We distributed the book *The IMIP Researcher's Manual* to attendees, which was donated by IMIP (Institute of Integral Medicine Prof. Fernando Figueira, Pernambuco-Brazil). Feedback was excellent and participants highlighted the benefit of learning from experts and through interactive discussion. As outputs, we have generated many high-quality videos, which will be shared on The Global Health Network platform. These include a recording of each lecture; a film about our workshop that features feedback from lecturers and participants; and a short documentary about Guillain-Barré Syndrome during the recent Zika epidemic. In this documentary, Dr Lucia Brito and Dr Cristiane Bresani discuss management of Guillain-Barré Syndrome and talk about the importance of the partnership between Hospital da Restauração and Fiocruz in addressing the Zika outbreak in Pernambuco.



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