Development of Patients' e-Registry and Electronic Medical Records (EMR)
As Cost-Effective Management System for Epilepsy - the pilot study in Georgia

[1,2]**Sofia Kasradze,** [1,4]Kakha Kashmadze, [1]Bochia Khasia, [3,4] Zviad Kirtava, [1,2] Giorgi Lomidze

[1]Epilepsy Prevention and Control Centre, Institute of Neurology and Neuropsychology, Tbilisi, Georgia
[2]Caucasus International University, Tbilisi, Georgia
[3] Tbilisi State Medical University, Tbilisi, Georgia
[4] *Partners for Health* NGO, Tbilisi, Georgia

ABSTRACT

Epilepsy is a chronic neurological condition which requires long-term medical care. It is essential to carry out dynamic collection of patient's data and scrupulous analytical follow-up for cost-effective management. And currently that is hardly realistic without e-Health technologies. e-Health and particularly – Electronic Medical/Health Records (EMRs & EHRs) represent the systematized collection of patient's health information in a digital format. Development of such EMRs have particularly high importance for long-term follow-up and integrated care of Epilepsy.

Aim
To develop pilot EMR model for Epilepsy patients for long-term management of thousands of patients united in Epilepsy registry of Georgia, as the best effective instrument of Epilepsy management.

METHODS

First electronic format of the "Epilepsy Registry" (EpiReg) was created in 2005 at the Epilepsy Prevention and Control Centre (EPCC, since 2009 – Institute of Neurology and Neuropsychology, INN). Main framework of the EMR has been achieved in 2014, with detailed analysis of the advantages/disadvantages resulting in new comprehensive iD:\Documents\Sofos My Documents\ABSTRACTEBI\2019\CONy2019 - Madridnterface. We provided pilot testing and corrections of errors/gaps in 2017.

RESULTS

Electronic format of epilepsy EMR - EpiSoft was launched in 2018. Clinical part of EMR is based on the last classification of epileptic seizures, containing anamnesis, subjective and objective data, EEG, MRI, lab tests and treatment (AED, dosage, drug monitoring), as well as disease course and complications – all these in digitized and maximally measurable formats. The soft is based on Web-technologies – (HTML, CSS; Database - PostgreSQL, Platform: OS – Linux, web-server – Apache), although currently it is used as EMR inside one institutional intranet – INN. But could be easily converted into the Internet-accessible system both countrywide and internationally as main interoperability standards are considered.
Out of over 24,000 outpatients' data in the Epilepsy Registry, more than 8,000 are assessed at repeated visits (from 2 to 14, average - 4.6 visits), while the remaining 15,200 patients had been included as single visits so far. Over 1,600 patients' data have been already filled-in in the format of EMR.

CONCLUSIONS

Preliminary results showed promising trend towards improvement of management and long-term supervision of epilepsy patients. In case of success, model can be transferred for management of other chronic neurological disorders. Ministry of Health of Georgia has started countrywide system of Electronic Health Records (EHR) since 15.01.2019. EpiReg and EpiSoft represent one of the most comprehensive ready-to-go e-Health systems countrywide, as well as – suitable big-data for international practical and research collaboration.

REFERENCES