

Expert Advisory Board (EAB) – Bulgaria, Ministry of Health

International EMF Project

REPORT

21th International Advisory Committee Meeting WHO, Geneva, 1st -3rd June 2016

I. General research activities in Bulgaria related to EMF health

Ongoing projects

1. Project BG 07: Programme “Public Health Initiatives”, Reference: BG07-PAF –NFM& FM EEA: *“Establishment of a system for regulation of the implementation and functioning of sites, sources of non-ionizing radiation (NIR), in compliance with the legislative requirements”*

Funds: the Norwegian Financial Mechanism and the Financial Mechanism of the European Economic Area 2009-2014

Research team: National Centre of Public Health and Analyses (NCPHA)

Start: September 2014

Duration: up to 30 April 2017

Overall objective: *Improving public health through the development of healthcare information systems.*

Specific objectives (in the field of non-ionizing radiation only):

The main objective of the part of the project concerning EMF exposure is to develop conditions to follow the European and to improve the national regulations concerning EMF exposure to the population; to ensure accurate information about the EMF levels in the environment for the competent state authorities and for the people by implementation of web-based electronic register.

The main activities are in the followings areas:

- national legislation concerning EMF exposure to general population;
- collecting data of on-site measurements;
- Real time monitoring of EMF levels around communication sources;
- Electronic system for collecting information about the EMF levels in some regions with higher public concern or with higher density of sources of EMF radiation.
- Improving the system of registration of sources of EMF radiation, levels of EMF exposure, wave pattern of irradiation in urban areas by providing electronic register and database with detailed information that can be used by national and regional authorities, also for future risk evaluation and risk managements activities for long time after finalizing the Project.

2. Project “Study of the risk perception processes in electromagnetic exposure to the general population. Risk communication and risk management.”

Funds: National budget: National Centre of Public Health and Analyses

Research team: Ph. D. Theses of Victoria Zaryabova, consultant: Prof. M. Israel

Start: September 2015

Duration: 3 years

Objective: The study should provide both information about the public concern about exposure to EMF from base stations of mobile communication in Bulgaria, and analyses of the fears of the population compared with the real risk from such exposure. On the basis of the analyses an active and effective risk communication programme will be implemented to change the public opinion and the behavior of the society concerning low levels of EMF exposure.

3. “Study, analyses and assessment of results of UVA and UVB sun protection in new developed cosmetics products for children and adults”

Funds: National budget: National Centre of Public Health and Analyses

Research team: Assoc. Prof. A. Tachev, Assoc. Prof. M. Ivanova, N. Vassileva, Hr. Petkova, Iv. Topalova

Objective: Evaluation of the protection of cosmetic products by applying of a standard physical method of measurement – evaluation of the transmitted UV radiation emitted by source with standard characteristics of emission.

Scientific Degrees

The Research supervisor of the Bulgarian Expert Advisory Body Assoc. Prof. M. Israel passed successfully one-year *procedure for Professor Degree* at the Medical University Pleven.

The Secretary of the Bulgarian Expert Advisory Body V. Zaryabova started a *Ph.D. Theses* in the field of risk perception and risk communication in EMF exposure.

Scientific forums:

Anniversary Conference of the Faculty of Public Health, Medical University – Pleven: *Public Health Policy and Practice*, 1-3 October 2015. The following papers have been presented at the meeting:

M. Ivanova, V. Zaryabova, H. Petkova, Measurements of magnetic fields in residential buildings with built-in transformers. Occupational and environmental exposure, Journal of Biomedical and Clinical Research, Vol. 8, No. 1, Suppl. 1, 2015 (abstract)

M. Israel, I. Topalova, T. Shalamanova, V. Zaryabova, Methods for selection of measurement points in urban areas with high density of EMF sources and such with “sensitive places and buildings”, Journal of Biomedical and Clinical Research, Vol. 8, No. 1, Suppl. 1, 2015 (abstract)

T. Shalamanova, M. Ivanova, R. Petrova, I. Topalova, Case study of EMF exposure before and after digitalization of broadcast technology in populated area, Journal of Biomedical and Clinical Research, Vol. 8, No. 1, Suppl. 1, 2015 (abstract)

Scientific publications:

They are presented here in **Chapter IV. New Public Information Activities**

II. New Policies and Legislation regarding EMF exposure

1. The first national meeting of the Bulgarian Expert Advisory Board (developed on the basis of the formal Bulgarian National Programme Committee) has been held in November 2015. The main topic of the meeting was *“Present state of the legal framework and control of non-ionizing radiation in Bulgaria”*.

The main discussed areas were the followings:

- New aspects of WHO policy in the field of NIR health and safety
- IAC meeting in May 2015: presentations of the participants at the International EMF Project, WHO
- Present state of the legislation concerning measurements and exposure assessment of EMF in Bulgaria
- European legislation in the field of protection against UV radiation emitted by solaria. International survey of the legislation in the field of UV protection, WHO
- Activities of the Bulgarian Expert Advisory Board.

More than 50 people attended the meeting: the deputy minister of health (the main health inspector of Bulgaria), representatives of the Health Inspectorates, municipalities, telecommunication and construction companies, specialists, of course member of the Bulgarian EAB.

Some of the results achieved after discussion were the followings:

- The Bulgarian EAB to inform the Bulgarian Accreditation Body about the standardized methods of measurement of EMF published by international organizations as IEC, CENELEC and others, and to require these methods to be authorized for using by the control bodies in Bulgaria
- A working group of experts to be created to develop an Ordinance on the basis of Directive 2013/35/EC with deadline 1st July 2016
- Organizing of training courses for employers and Occupational health services on topic *“Minimal requirements for safe use of artificial sources of optical radiation”*, based on Ordinance No.5, 2010 (Directive 2006/25/EC)
- Working group to be created to prepare a procedure for control of the NIR exposure by solaria; for this working group the industry should be invited to attend
- Training course in the field of measurement for minimum 10 Health Inspectorate to be organized
- The team from the National Centre of Public Health and Analyses to develop standard method for measurement and exposure assessment of magnetic field from transformers in buildings. The method should be send to the control bodies of the Ministry of Health
- The team from the National Centre of Public Health and Analyses to develop standard method for measurement and exposure assessment of EMF in dwellings from base stations for mobile communication (in response to complaints). The method should be send to the control bodies of the Ministry of Health.

2. Ministry of Health created working group for implementation of the Directive 2013/35/EC. The deadline for the new Ordinance for occupational exposure to EMF is 31 May 2016.

3. New training programmes for Bachelor and Master Degrees has been implemented for students at the New Bulgarian University, Department of Telecommunication. The disciplines are: *Basis of measurements in radio communications*; and

Measurements in fixed and mobile radio networks. Both courses include special parts of safety use of communication technology, exposure assessment and prevention. For this period 35 students passed this education.

III. Areas of public concern and national responses

The main challenge in this field is the development of an *electronic database (registry) of sources of EMF in residential areas*. This register is at the stage of implementation and it will contain base stations for mobile communication and TV stations in Bulgaria. The electronic database will be web-based, and the main purpose for its creation is to give information about the place of mounting of the source, safety zones around it, technical characteristics, exposure data around the antenna and other information for use by the administration, local authorities, health inspectorates, and control bodies; some of the information - for the general population.

We expect this electronic database to be in the web in the end of 2016.

The team of the Bulgarian EAB visited the Norwegian Radiation Protection Authority (NRPA) for exchange of experience in the field of NIR protection and policy. The team presented data of measurements around base stations of mobile communication in Bulgaria; problems with the implementation of Directive 2013/35/EC and Council Recommendation 1999/519/EC; risk communication analyses; new areas of national responses.

NRPA and Bulgarian EAB adopted a programme for future collaboration between the two countries and teams in the field of research and practice concerning NIR health and safety.

IV. New public information activities:

1. News and publications in newspapers and websites

During the reporting period 3 publications in Bulgarian newspaper presented the progress of the Project in the field of development of web-based registry for sources of EMF - BG 07 *"Establishment of a system for regulation of the implementation and functioning of sites, sources of non-ionizing radiation (NIR), in compliance with the legislative requirements"*.

Separately, a paper in the Bulgarian journal *"Social medicine"* was published that describes the project activities and achievements related to the participation of the management team in workshops in Norway:

Israel M. Pl. Dimitrov, V. Zaryabova, J. Arnaudov - *Team of NCPHA participated in workshops at the Norwegian Institute of Public Health and the Norwegian Radiation Protection Agency, Social Medicine, issue 2, 2015, Current Information.*

On the website of the National Centre of Public Health and Analyses, in category "News", electronic message was published associated with the visit of the management team in Norway with the following headline:

Team from the NCPHA participates in workshops in Norway Institute of Public Health and the Norwegian Radiation Protection Agency.

2. Furthermore, several *scientific publications* were published in international scientific journals and books (monographs). They are cited below:

Israel M. – *An historical overview of the activities in the field of exposure and risk assessment of non-ionizing radiation in Bulgaria*, ***Electromagnetic Biology and Medicine***, Manuscript ID: 1076451 (LEBM-2015-0040), **2015**.

Zaryabova V., M. Israel – *Dynamics of the public concern and risk communication programme implementation*, ***Electromagnetic Biology and Medicine***, Manuscript ID: 1076445 (LEBM-2015-0015), **2015**.

Vesselinova L., M. Israel, M. Markov – *Physiotherapy risk assessment in Bulgaria*, ***Bulgarian Journal on Public Health***, Supplement, Vol. VII, No. 2(1), **2015**, p. 228-234.

Ivanova M., M. Israel – *Legislation on human health protection on using solarium*, ***Bulgarian Journal on Public Health***, Supplement, Vol. VII, No. 2(1), **2015**, p. 270–275.

Electromagnetic fields in biology and medicine, Ed. Prof. M. Markov, **CRC Press, Taylor and Francis group**, 2nd March **2015**, ISBN 9781482248500 - CAT# K23676: M. Israel, M. Ivanova, V. Zaryabova, T. Shalamanova – Chapter “Non-Ionizing Radiation – Exposure Assessment and Risk Policy in Bulgaria”.

Shalamanova T., **M. Israel**, M. Ivanova, V. Zaryabova – *Exposure assessment of magnetic field in dwellings with built-in transformers in Bulgaria*, ***Science Journal of Public Health***, **2015**, 3(1), p. 101-106.

3. Training courses in the field of NIR sources, health risk, legislation, measurements, risk communication, implementation of the precautionary principle have been conducted to control laboratories, regional inspections, also students.

Prof. M. Israel, Ph.D.,
Bulgarian Expert Advisory Board
International Project “Electromagnetic fields”

e-mail addresses: michelisrael@abv.bg michel.israel@lycos.com

Addresses for correspondence:

Medical University – Pleven 1, St. Cl. Ochridski Str., 5800 Pleven, Bulgaria	National Centre of Public Health and Analysis, 15, Boul. Acad. Iv. Geshov, Sofia 1431, Bulgaria
--	---