

“Surveillance of invasive and native mosquito vectors and pathogens they transmit in Montenegro” - LOVCEN

Activity report

Period: year 2015

During reporting period several activities according to the Activity plan have been done by IPH researchers included in this Project.

Danijela Vujošević and Nebojsa Sekulic attended 1st annual Project meeting held on 13th-15th May 2015 at Biotechnical Faculty in Podgorica. Danijela Vujošević presented IPH activity report for year 2014 and Institute contribution to Project realization.

As previous defined (attending meetings and educational workshops), Sanja Medenica and Nebojsa Sekulic visited **NIV**, Novi Sad, Serbia for **“Study visit viruses detection training”** which took place from 1st - 6th November.

The aim of the visit was to inform IPH researchers about the diagnostic procedures and skills for the detection of pathogens in mosquitoes. Among the large number of different pathogens that may be the cause of diseases transmitted by mosquito bite, the majority of them are viruses, and the *West Nile virus* was chosen as a model virus for training.

The training took place in three phases:

In the first phase, the theoretical knowledge of the existence and capabilities of different laboratory diagnostic procedures, including both classical and variety of molecular diagnostic procedures was presented.

In the second phase of the training exercises, work on clearly defined procedures, including the preparation of mosquitoes samples, the extraction of nucleic acids, molecular diagnostic techniques RT-PCR and real-time RT-PCR were conducted.

In the third phase, special attention was paid for use of laboratory diagnostic techniques in different types and stages of infectious disease control. Through discussions, presentations, practical training and the exchange of experiences, some information on the use of different laboratory diagnostic techniques for the detection

of pathogens in mosquitoes was obtained. This will enhance our current infectious diseases transmitted by vectors surveillance system.

In the period 19th - 30th October the training titled '**MediPIET Module 1 for Cohort 2: "Introduction to Intervention Epidemiology"**' under the auspices of the European Union held in Budva (Montenegro). Training was attended by 50 participants of twenty countries as well as Dr Nebojša Sekulić. At this meeting Dr Nebojša Sekulić presented Project Lovćen and the issues that it deals with.

Dr Nebojša Sekulić attended EVD (control of vector diseases) network meeting and EVD group coordination meeting titled "**ECDC Regional meeting on West Nile fever real time surveillance and exchange of good practices on vector-borne diseases**" organized by ECDC and the Ministry of Health of Serbia, held at 2nd to 3rd December 2015 in Belgrade, Serbia.

The meeting was attended by 26 representatives of member countries of the European Union (Austria, Bulgaria, Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Portugal, Romania, Slovenia, Spain and The Great Britain), 14 representatives of countries in the region (Albania, Bosnia and Herzegovina, Macedonia, Serbia, Kosovo, Turkey and Montenegro) as well as 20 representatives of partner countries of the EU (Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Tunisia) and observers (Ukraine and Georgia).

One of the aims of the meeting was to exchange information between EU member states and their neighbors in terms of surveillance of *West Nile virus* as well as the possibility of application of identical models to other vector-borne disease in their real time monitoring.

The meeting was organized in the form of lectures and group work where participants became familiar with LOVĆEN project and the results so far.

In November 2015, Professor Michele Dottori held several lectures at the Institute for Public Health of Montenegro, where he spoke about vector diseases.

In November 2015, Dr Tamas Petrovic from partner institution NIV visited IPH where he discussed with IPH researchers about the planning of the future research activities and trainings for IPH staff.

In December, visiting Professor Steve Quarrie, gave lectures related to "how to write projects" topics.

During a period May and June 2015 new equipment QuantStudio 7 Flex Real-Time PCR instrument and Euroimmun I-2P ELISA analyzer was delivered and installed at IPH.

During 2015 IPH provided regularly supply with “dry ice” researchers from BTF, needed for NS traps.

During whole reporting period samples of the human sera taken from citizens from different cities in Montenegro were tested for anti WN IgM and IgG antibodies in Department for Virology and Serology CMM. ELISA technique was used for this purpose.

Anti *West Nile* virus IgG antibodies tested in 51 samples, all found negative.
Anti *West Nile* virus IgM antibodies tested in 51 samples. (4 positive).

Note:

IgM positive result doesn't mean WN positive case (infection) without confirmation.

Additionally, during 2015 at the Center for Medical Microbiology samples for other vector borne diseases pathogens were tested:

- *Borrelia burgdorferi* – 925 IgG ELISA tests (77 positive)
- *Borrelia burgdorferi* – 925 IgM ELISA tests (119 positive)
- *Borrelia burgdorferi* – 56 Real-Time PCR tests (all negative)

- *Leishmania spp.* – 22 microscopy (18 negative, 5 positive)
- *Leishmania spp.* – 195 IgG ELISA tests (13 positive)
- *Leishmania spp.* – IgM not tested

- *Plasmodium spp.* – 5 microscopy (all negative)

Also, during 2015, the Center for Control and Prevention Diseases at the Institute of Public Health of Montenegro were recorded more mandatory reporting diseases from the group of vector-borne diseases, which are continuously monitored. Based on the electronic database following results were registered:

- Lyme boreliosis – three registered cases.
- Leishmaniasis – five registered cases, one death.

- Infectio West Nile viralis – no cases registered.
- Malaria imported cases – no cases registered.


Note: Participants in the Project Dr. Sanja Medenica and Dr. Nebojsa Sekulic were tested voluntary for anti *West Nile virus* antibodies.

Note: At 14th – 18th December MediLabsecure Project annual meeting held in Pasteur Institute in Paris, France. IPH researchers Sanja Medenica, Danijela Vujosevic and Zoran Vratnica attended this meeting. On the meeting margins contact with Director of Division for Vector-Borne Diseases CDC USA Dr. Lyle R. Petersen, MD, MPH, was established by the Project leader Igor Pajović and IPH researcher Danijela Vujošević. Through web page, CDC DENV-1-4 Real-Time RT-PCR Assay for Detection and Serotype Identification of Dengue Virus was ordered for IPH.

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