



**Cohort 2
2015-2017**

MediPIET Report Summary of work activities

**Largime Ballazhi
Republic of Macedonia**



Training site: Institute of Public Health of the Republic of Macedonia

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Pre-fellowship short biography

I graduated at Faculty of Medicine, Pristina, Kosovo in 2010 and gained a diploma of medical doctor. After graduation I worked one year in Paediatric private health care polyclinic, practicing general medicine. Since 2014, I work as researcher in the Sector for Prevention and Control of Communicable Diseases within the Institute for Public Health in Republic of Macedonia. I started with specialization in epidemiology when the MediPIET started. My position is a researcher at the Department of immunization control in the frame of Sector for Communicable Diseases control and Prevention at IPH. My duties include monitoring and control of the implementation of compulsory immunization in the country (according to the calendar of vaccination), preparation of annual reports on the implementation of the programs, propose annual Program to the Ministry of Health, participation in surveillance and analysis outbreak investigation and prevention and control activities and preparation of weekly, monthly, annual reports for communicable diseases.

Fellowship projects

Surveillance project

Evaluation of Hepatitis A surveillance system in the Republic of Macedonia during 2015-2016

Background:

In Macedonia HAV infection remains the most common form of registered infectious hepatitis, although increased proportion of other types of hepatitis are observed in recent years. This disease affects mostly children in preschool and school-age with the increased number of cases of this type of hepatitis in period autumn-winter season, usually with a peak in November. In Macedonia, mandatory notification of hepatitis started in 1956 as hepatitis (non-differentiated type). Starting in 1983, the disease is subject to mandatory laboratory differentiation (enters in legislation in 1984), and the total number of hepatitis although with an increasing trend, high incidence is still registered in some parts of the country. Hepatitis A in Macedonia persists both in sporadic and endemic forms with increased number of registered cases in some regions of Macedonia (Skopje, Kumanovo, Strumica). The number of cases of hepatitis shows cyclical oscillations, with increasing numbers of cases every 3-5 years. Since the early 1990s, in line with a global trend and as the result of improved sanitation and socio-economic conditions, the epidemiology of HAV has greatly changed in the country, with a clear decline in the numbers of cases over the years, whereby the incidence of HAV dropped from 28.7 per 100,000 in 1991 to 7.6 per 100,000 in 2015.

Objectives:

Surveillance of HAV is important as a tool to detect, control and prevent these infections. In this context, the aim of this study was to evaluate the surveillance system for HAV (evaluation of system capacities corresponding to the objectives of surveillance system, evaluation of system attributes, identification of weak points) in R. Macedonia during 2015-2016 in order to provide recommendations for improving quality, efficiency and usefulness of the system as well as to evaluate the ability for detecting changes in trends and possible outbreaks. The objectives of this evaluation are: to describe the HAV surveillance system, to evaluate the extent to which attributes of the HAV surveillance system and to identify areas for maintaining or strengthening quality within the HAV surveillance system

Methods:

We did evaluation of surveillance system of Hep A according to the guidelines of the Centre for Disease Control and Prevention which we adjusted on our national surveillance system. The assessed Attributes of surveillance system were simplicity, flexibility, data quality, acceptability, representativeness, timeliness and stability.

Results:

There is a notification form for all diseases, case report and standardized questionnaire for hepatitis A adopted in 2010 which in case of outbreak can be modified depending on the situation on field. The assessment of HAV surveillance system data shows that there is slightly decrease in percentages of responses in 2016 compared to the previous year (2015) for almost all the variables included in the case report form and the notification form. The completeness of the form slightly decreased from 82.6% in 2015 to 81.2% in 2016. Overall, the completeness during 2015-2016 was 82,4%. For some items the percentage of completeness has deteriorated in 2016 compared to 2015, for example indicators relate to the profession, municipality, laboratory testing and the date of onset fields in the case report form and the general information, employment status, method of lab testing and contact tracing part in the epidemiological form. In R. Macedonia, the HAV surveillance system is paper-based. IPH collect the data in database and analyse the data.

All the microbiological confirmed agents are collected in database, but there is no connection link between both systems (lab confirmed and notification forms). In 2015, 98.5% of cases are laboratory confirmed and 85% in 2016. Time from the date of reporting on the notification form and date on investigation in the reporting form is 1-2 days. The median time from laboratory diagnosis to reporting

is 3 days IQR (0-6) days according to the data from case reporting forms. The median time from date of onset to date of reporting is 8 days IQR (3-13).

There are currently 27 epidemiologists and 9 medical doctors on epidemiology specialization. Of the 31 regional and local units, 12 units do not have epidemiologist. There are 4 epidemiologists and 3 medical doctors on epidemiology specialization in the national IPH but the IPH is also understaffed for technicians. The only method of financing is the National program for public health which is provided by the Government annually.

Conclusion and recommendations:

There's room for improvement in order to meet its purpose and objectives for the surveillance system, and to achieve and increase the effectiveness. The HAV surveillance system in Macedonia is rather simple, flexible, and acceptable and represents the overall population. Lack of the epidemiological staff influence the stability of the system because this is one of the main effects on the public health activities. The system needs improvement in terms of increasing completeness and timeliness of data.

Based on the findings of this study and in order to make the HAV surveillance system more sustainable and to improve its ability to collect and report data efficiently we recommend as follows: implementation of an electronic system for data collection, updating the Notification form or manufacturing of new Notification forms to understand the need of more than one reporting form for all diseases, implementation of an electronic system for data collection, training of medical staff such as family doctors, assistant epidemiologist/epidemiologist regarding case report form changes and modes of reporting, expending the financial fund for supporting surveillance activities, meeting the needs of the regional and local centres with epidemiologists.

Status: Completed

Outbreak Investigations:

1. Increased number of cases of acute enterocolitis in Bogovinje, Republic of Macedonia, May-June, 2016

Background:

Bogovinje is a mountain hard-to-reach village located in the western part in Macedonia with a population of 1.650 (2002 census) although significant number of the population immigrated to European countries. From 2006-2015, there have been in annual average of 41,5/100.000 cases of acute enterocolitis in the Centre for Public Health (CPH) in Tetovo, with incidence rate ranging from 5 to 56,1 /100.000 population. During this period, small proportion (5%) of all registered cases was from the municipality of Bogovinje. From 27 to 29 May 2016, CPH Tetovo received 25 notification form from Bogovinje. On 29.05.2016, at 4.15 am, we received a telephone notification from local epidemiologist of CPH Tetovo for increasing number of cases of acute enterocolitis. The local epidemiologist interviewed the first cases and suspected the drinking water from the community water supply system as a common exposure. Drinking water supply is secured through local water supply system that is maintained by the local authorities.

Objectives:

We investigated this increased number of cases: to identify risk factor, to implement control measures and to provide recommendations for prevention.

Methods:

An Outbreak investigation team (OIT) was consisted from epidemiologists from CPH Tetovo and IPH, environmental specialists, microbiologists and representatives from the local authorities. We interviewed patients at the GPs office as part of a formative research for the risk factors to be investigated in a retrospective cohort study. We conducted a retrospective cohort study. Cases were defined as persons who live in Bogovinje, has diarrhoea and nausea/vomiting after 27th May 2016. We randomly selected 69 people from the GPs office list which represent 4% of the total population according to the last census (sample size calculation in Epi_Info v 7.0). We entered data from the filled questionnaires into a database (Microsoft Excel 2016). We performed descriptive statistics and we analysed measures of association in Epi_Info v 7.0. Attack rate and relative risk were calculated for each food item/ water. Chi-square/Fisher exact test was used for assessing significance ($p < 0,05$). We analysed water samples from the water supply system and stool samples from suspected cases. Faeces samples from suspected cases were taken for microbiological analyses on Salmonella types, Staphylococcus aureus-coagulase positive, Enterobacteriaceae, E. Coli 0157, listeria monocytogenes.

Results:

The total number of interviewed people that met the case definition was 29, registered from the 27th May to 01st June 2016. Of all interviewed cases 44,8% (n=13) had onset of symptoms on the same date, 31.05.2016. This was identified as the peak of the outbreak. There were no more registered cases after the 01st June 2016. Out of 29 detected cases, 69,0% (n=20) were male, while 31,0% (n=9) were female with a male-to-female ratio of 2,2. The age distribution of the detected cases ranged from 5 to 78 years with mean age of 27,9 years (SD= $\pm 22,4$). The most affected age group was 0-14 years – 37,9% (n=11), followed by 15-29 – 31,0% (n=9). The main symptoms of the 29 detected cases were diarrhoea (100,0%), vomiting (86,2%) and nausea (82,7%) but abdominal cramps (65,5%) and fever (3,5%) were also detected. We observed highest attack rate of 75,0 for cabbage and iceberg salad (AR=57,1%), but the RR (RR=9,8; CI=1,23-40,42; $p=0.003$) was highest for water from local supply system. All samples of the drinking water taken from different sites of the water supply system were negative for bacterial pathogens. Chemical and physical characteristics of the water were also met. All faeces samples were negative on bacterial pathogenic flora. Significant rainfall and local floods happened 3 days before the date of onset of symptoms of the first cases.

Conclusion and recommendations:

The epidemic curve based on date of onset of disease indicated point source outbreak. Significant rainfall and local floods happened 3 days before the date of onset of symptoms of the first cases. We only found water from local supply to have statistical significance RR while calculating effect of exposure to each food item and water.

Based on the findings we recommended several recommendations: Introducing lab capacities for viral investigation of water samples both on regional and National level; Food samples need to be collected for microbiological analyses; In the regions with a potential risk for an outbreak, education should be provided and adapted to the local population; Establishing Protocol for outbreak investigation should be practical tool for improvement of field investigation.

Status: Completed

2. Report from an outbreak investigation of acute food poisoning outbreak in the employees of the Lear Factory in Tetovo on March, 2017

Background:

On 31.03.2017, at 5.15 am, the local epidemiologist from CPH Tetovo received a telephone notification for mass food poisoning reported by the infectious diseases specialist at the Clinical Hospital in Tetovo. All sick persons provided data that they are employed in the "Lear" factory in Tetovo. The epidemiologist from CPH Tetovo immediately informed the State Sanitary and Health Inspectorate (SSHI) from Tetovo, the inspectors from the Food and Veterinary Agency (FVA) - Tetovo and the Sector for Control and Prevention of Infectious Diseases from the Public Health Institute (IPH).

Objectives:

To describe and analyse the outbreak in order to provide control measures and recommendations for preventing future outbreaks.

Methods:

After the received information from the competent physicians and the survey of some of the patients in the Clinical Hospital Tetovo on the morning of March 31, 2017, a case is defined as any person who: works in the factory "Lear", Tetovo; was at work in II or III shift on March 30, 2017; ate in the canteen of food served in II and III shift at the 30th and early morning on March 31st; and has developed symptoms of food poisoning with nausea and vomiting for the period from March 30 to March 31, 2017. After obtaining the information from the initial investigation at the Tetovo Hospital and in consultation with the epidemiologist from CPH Tetovo, the team prepared a structured questionnaire with basic sociodemographic data, questions about the symptoms that they developed and the time of the symptoms, as well as what foods they consumed in the canteen. In the period from March 31 to April 3, the IPH team conducted a cohort study in order to investigate the causes of the outbreak. As the cohort, all employees from the II and III shifts were defined on March 30 in the factory "Lear" Tetovo. The employees are contacted by phone according to the list received from the person for human resources from the factory "Lear" Tetovo. The completed questionnaires were entered in the MS Excel database. EpiInfo v.7 was used for descriptive analysis and for determining association measures (risk).

Results:

The IPH team telephoned 462 employees of II and III shifts, or 82,6% out of 557 people who worked in these two shifts, according to a list from the Lear factory. Of the interviewed persons, 129 (28,0%) are male, and 331 (72,0%) are female. The age of the respondents ranges from 19 to 57 years (middle age 35,3 years). After consuming food in the canteen, the symptoms of stomach pain occurred in 184 (40,0%) of the subjects in both shifts, symptoms with nausea and vomiting occurred in 136 (29,8%), 34 people complained for fever (7,4%) and diarrhoea 132 (28,7%). Of the respondents, 136 or +2% meet the criteria for the case in the outbreak. Of the cases, 30 (22,1%) are males, and 106 (77,9%) are females. The age of the cases ranges from 19 to 57 years (mean age 36,5 years). Of the total of 243 exposed employees in the II shift, 15 people developed symptoms (AR = 6,2%), while in III shift symptoms were developed in 121 out of 217 exposed (AR = 55,8%). The risk of Disease in the III shift is 9 times higher (95% CI = 5,5-14,9) compared to the II shift. In most of the respondents (n=50) symptoms occurred in the period from 03.00am to 03.45am on March 31, 2017. Of the total number of patients, 119 were hospitalized, and 100 of them received infusion therapy in a daily hospital. During the analysis, we found that the greatest risk is associated with the consumption of macaroni, i.e those who ate macaroni have a 31,5 ($p < 0.00000$) higher risk of disease than those who did not eat to become ill. The risk of disease is associated with the consumption of Bolognese sauce which is 2,7 times ($p < 0.00000$) more than those who did not eat from this sauce. Consumption of yogurt is associated with a 1,7 ($p < 0.0018$) greater risk of disease compared to those who did not drink yogurt. Besides the consumption of macaroni as the main risk factor for the disease, in the univariate analysis there is a risk both in the sauce and yogurt (cup). Therefore, we made a stratified analysis for simultaneous exposition of the sauce together with macaroni and yogurt together with macaroni.

The stratified analysis for concurrent exposure to both sauce and macaroni shows that the risk of 2,7 times in univariate analysis is reduced to 1,07 times (95% CI = 0,7-1,6) and is not significant, i.e the sauce is not a risk factor for the disease. Stratified analysis for concomitant exposure to both yogurt and macaroni shows that the risk of 1,7 times in univariate analysis is reduced to 0,9 times (95% CI = 0,7-1,3) and is not significant, that is, yogurt is not a risk for the disease. The microbiological analysis of the swabs analysed in CPH Tetovo suggests that 7 out of 11 swabs are positive for staphylococcus aureus: a swab from a work table, a hand wash sink swab, a swab from a plate, a swab from a food spoon, a swab from the outside surface of the sink for dishes, swabs from the "sink" for storing food-recessed part and a swab from a platter.

Conclusion and recommendations:

The clinical presentation, short incubation and microbiological findings of staphylococcus aureus in a sample of macaroni remaining from a third shift, staff swabs, food serving areas in the factory and food preparation areas in the restaurant, favour acute food poisoning caused by enterotoxin of Staphylococcus aureus. Based on the findings we recommended several recommendations such as employees who have positive findings of staphylococcus aureus to be removed from work until negativity; general mechanical cleaning and disinfection of canteen in "Lear" and kitchens and auxiliary premises in restaurant "Bakal" – Bakery; regular carrying out of sanitary-hygienic examinations of employees in restaurant "Bakal" – Bakery; serving food in as short a period as possible after preparation; proper storage and transportation of cooked foods.

Status: Completed

Research

Behavioral study on HIV/AIDS and STI`s among young people in the R. Macedonia, 2017

Background:

This is the sixth bio behavioural survey on HIV/AIDS related knowledge and risk behaviours conducted among youth in the period between 2005 and 2017. As with previous behavioural studies, the survey conducted in 2017 among youth was financially supported by Global Fund to fight AIDS, Tuberculosis and Malaria.

The first HIV-positive person in Republic of Macedonia was registered in 1987 and the first case of AIDS in 1989. The first death case of AIDS was reported in 1990. According to official data, the cumulative number of registered cases of HIV/ AIDS in the period 1987 - 2016 is 315 of which 83 have died. According to the available data on the mode of transmission the most common mode of transmission is heterosexual, followed by MSM. The distribution by age of the registered HIV/ AIDS cases suggests that the most affected age group is people aged 30-39 years followed by 20-29 and 40-49 years. Only individual cases of syphilis and gonorrhoea is registered in the last 10 years. The programming framework of the second-generation surveillance of HIV/ AIDS (SGS), developed by UNAIDS, WHO and other international organizations, highlights the need to design new systems of monitoring appropriate to the epidemiological situation in the country. The aim of these tracking systems is to focus the existing resources towards populations that are most exposed at risk of HIV / STI infection.

Objectives:

The objectives of the behavioural study on HIV / AIDS / STI among young people aged 15 to 24 years are: to continue the monitoring of the HIV / STI / SRH associated risk behaviour among young people, as a population under potentially increased risk. To determine and compare the HIV / STI / SRH knowledge, attitudes and risk behaviour of young people at national, regional and local level.

Methods:

The study was designed as cross-sectional survey aiming to perform a research into HIV/AIDS related knowledge, attitudes and behaviours among youth in high schools, faculties and social institutions in five cities in Macedonia. For collecting data of interest for the research, we used specifically designed questionnaire. Based on the official statistical data available from the census of 2002, in Macedonia there are 327,367 people at 15-24 years of age, namely the object of interest for this particular behavioural study. Sample size was estimated at 3000 participants, or nearly 1% of the study population. Sampling frame was constituted based on the available population - youth aged between 15-24 years attending high schools, faculties, social institutions "Institution for care and upbringing - 25 May" and "Institution for Children and Youth- 11 October".

Results:

Out of 3000 participants, 2984 completed questionnaires were obtained, which represents a response rate of 99.4%. In this study, female participants accounted for 44.9% (n=1339), males were represented with 53,5% (n=1597), whereas for 1.6% (n=47) of participants the data on gender was missing. The age of the participants was in the range between 15-20 years (mean age=17.2; SD=0.9). Participants aged 15-19 years were represented with 97,2% (n=2900), youth aged between 20-24 years accounted for 0.2% (n=6). For 2,6% (78) data on age was missing. Participants from Macedonian nationality accounted for 79.5%(CI95%=78.0-80.9%), participants from Albanian nationality were 17,6% (CI95%=78.0-80.9%), participants from Roma with 1.1% (CI95%=0.7-1.5%), Turkish nationality and Serbian with 0.5%, and Vlach with 0.2%. A proportion of 0.6% was from other nationalities, while for 2,6% the data was missing. The results related to the common misconceptions regarding the ways of HIV transmission may lead to higher stigma for HIV positive people and needs to be addressed through educational programs at schools. No significant changes were detected regarding the knowledge related to diseases that may be transmitted through sharing drug injecting equipment (needles and syringes) comparing 2014. In 2014, majority of participants 87,8% correctly identified

that HIV could be transmitted by sharing drug injecting equipment. However, 50,1% of the youth correctly identified that Hepatitis C could be transmitted by sharing injecting drug equipment and 38.2% of them correctly replied that Hepatitis B could also be transmitted in this way, which implies that majority of the youth is not aware of all the risks associated with injecting and sharing injecting equipment. The findings regarding HIV testing behaviours are of serious concern, since only 1.7% of the participants had an HIV test done in the last year prior the study which represents a further decline compared to 2.8% in 2014. Comparing previous study, there is a decline for indicator not having an HIV test is that young people do not consider themselves having risky sexual behaviours (46.5%). There is almost two-fold decrease in the proportion of sexually active youth who reported to have had anal sexual intercourse in the past 12 months prior to the study (12.7% vs. 6.2% in 2014), 12,9% stated to have used condoms during their last anal sexual intercourse, which is decline proportion compared to the 2014 study.

A proportion of 50,0% of the participants reported to have consumed alcohol drinks in the past month prior the study. From the participants who have consumed alcohol in the past month, 62,6% had sexual intercourses under the influence of alcohol, 32,9% (CI95%=27,6-37,9%) of them with their regular partners, but 14,7% (CI95%=11,2-18,5%) had sexual intercourses with random partners. Findings from the study indicate that 15,1% (n=188) of participants had used drugs sometime in their lives. Most of them 5,8% have used marijuana, 1,5% have used cocaine and 2,1% have used amphetamines. Heroin use was reported by 0.6% of these participants.

Conclusion and recommendations:

The knowledge on HIV/AIDS remains high among youth and it has slightly increased compared to the results from 2014. In terms of knowledge for other STIs, for example Syphilis, 74,1% of participants had prior knowledge, but for other types of STI less than 42,5% of participant had such knowledge (Gonorrhoea, Hepatitis B, HPV, Chlamydiosis, Candidiasis and Trichomoniasis). In contrast to the knowledge associated to HIV/STIs, the knowledge regarding the most common misconceptions regarding the HIV transmission has slightly increased, resulting in lower proportion of youth who have correctly identified both. The appropriate ways to prevent the sexual transmission of HIV and at the same time rejected the major misconceptions about the transmission of HIV, for example 33.9% (CI95%=32.1-35.6%) of the respondents answered that a person can be infected with HIV by a mosquito bite.

Findings related to the misconceptions regarding modes of HIV transmission, suggests a need for scaled up and appropriately adjusted HIV/AIDS educational programmes for young people, intensified frequency of life-skills classes, regarding HIV/STI/SRH (introducing separate discipline of SRH education in schools may be an option).Importance of HIV/STI testing needs to be reinforced through targeted promotional activities. Availability of free condoms and educational materials for the youth should be scaled up as well, however raising the awareness for condom use among youth is of greater importance. Findings show that parents are seen as a front line when young people are in need of information about HIV and their sexuality needs.

Status: Completed

International Assignments:

1. Brucellosis surveillance system -Exchange of knowledge between three countries (Kosovo, Albania and Republic of Macedonia)

Location: Pristina-Kosovo

Dates: 3-14 April 2017

Organization: National Institute of Public Health

Background:

Brucellosis is a widespread zoonosis mainly transmitted from cattle, sheep, goats, pigs and camels through direct contact with blood, placenta, fetuses or uterine secretions or through consumption of contaminated raw animal products (especially unpasteurized milk and soft cheese). *Brucella melitensis* is the most prevalent species causing human brucellosis. The Republic of Macedonia represents an endemic area where brucellosis prevails as a dominant zoonosis with high morbidity and big economic losses. Brucellosis is mandatory notifiable disease in the Republic of Macedonia since 1960. In 1992 is registered the highest incidence and largest number of cases and the highest incidence is registered in older groups (95% - over 20 years). The surveillance of Brucellosis needs continuous improvement. Therefore, the Republic of Macedonia requested to send one MediPIET fellow to complete an International Assignment at the National Institute of Public Health in Kosovo, for sharing experiences, and because they had an electronic surveillance system for Brucellosis and this will be a good opportunity to learn from their experience in order to improve the gaps in our system.

Objectives:

The main objectives of the IA in Kosovo were to get acquainted with following: the surveillance of communicable diseases in general, the electronic Brucellosis surveillance system, the collection, analyse, interpretation and dissemination of data on Brucellosis, preparation of the weekly/monthly bulletin. The comparison of Brucellosis systems in the Republic of Macedonia, Kosovo and Albania by sharing the experiences between three countries will be a very good opportunity to compare and improve the systems and to learn from our neighbouring countries.

Methods:

Practical lessons and also meetings with relevant stakeholders and institutions from all levels of the public health.

Results:

The surveillance system is undertaken to streamline the disease prevention and control measures. This systematic and continuous system follows some steps and functions which enable to design procedures and methodologies in order to have effective systems that support the ongoing researches and public health actions.

From all health-care providers it is required an immediate (within 24 hours) and mandatory reporting of all human Brucellosis cases by completing an investigation form, which include demographic information as well as food history or direct contact with animals. The cases are confirmed by laboratory.

The main difference is that in Kosovo (compare to Albania and the Republic of Macedonia) the surveillance system is electronic (at the NIPH and in regional institutes), thus giving the opportunity to report the suspected cases within 24 hours.

Another advantage is that the laboratory software called MedLis can be accessed from all epidemiologists in the NIPH and they can check if a case is confirmed, thus giving the opportunity to timely detect the Brucellosis cases and give better feedback to data providers. Data shared through this electronic system can be further analysed and provide information that helps public health professionals

to take their decision. There is a good collaboration between IPH and veterinary sector in all three countries.

Conclusion and recommendations:

All three countries have a surveillance system for Brucellosis, based on an individual form which is mandatory and should be reported from local to the central level.

The reporting way is quite the same in the three countries, from local (basic) level to the central level (IPH). Mandatory and immediate case-based reporting by all health-care providers is required. It is also mandatory reporting from laboratories of positive results, independent of physician reporting. Each human case should be investigated for surveillance purposes, and include demographic information as well as food history, animal contacts, type of work or activity at onset, and recent travel history. In addition, it is highly recommended a joint investigation with veterinary sector.

According to this International Assignment, activities that we have observed and the acquired knowledge we can recommend the following activities regarding brucellosis surveillance and recommended control measures to be implemented in the Republic of Macedonia: To evaluate and improve the surveillance system; To provide laboratory software for example software called MedLIS; Each case laboratory-detected should be confirmed according to the EU case definition (adopted in the Republic of Macedonia);

Implementation of regular, frequent and informal meetings with staff from IPH and Clinic of infectious diseases; To propose to authorities the introduction of the electronic system of reporting; To increase awareness and continuous training of health professionals for the importance of timely and proper reporting; Continuous cooperation and coordination of field activities between health and veterinary sector;

Status: Completed

2. Implementation of epidemiological telephone conferences (EpiTel) in the Republic of Macedonia

Location: Berlin-Germany

Dates: 11-22 September 2017

Organization: Robert Koch Institute

Background:

In the beginning of 2017 the Institute of Public Health of the Republic of Macedonia started collaboration with the Surveillance Unit of the Department of Infectious Disease Epidemiology at the Robert Koch Institute (RKI) in Berlin in Germany. One of the identified projects was the introduction of the concept of an Epidemiological Telephone Conference (EpiTel) in the Republic of Macedonia. In June 2017 a first workshop on this topic has already been held in Skopje, organized by Robert Koch Institute (RKI). Participants were representatives from the Institute of Public Health (IPH), the MoH and epidemiologists from the 10 regional public health centres of Macedonia. After presentation of the concept of the EpiTel, followed by discussion of its usefulness for Macedonia, the participants were satisfied with EpiTel and expressed interest for its implementation in R. Macedonia. The project for EpiTel implementation – gaining theoretical and practical experience from Germany and implementation in Macedonia will be assigned to MediPIET fellow as international assignment. Public health threats are increasingly triggered by events which span across international, national and state level jurisdictions. Innovative surveillance methods are needed to ensure adequate and timely response to such threats. Establishing a system of weekly telephone conferences with all competent authorities to identify, discuss and respond to infectious disease events in real-time is a challenge for Public Health Systems in every country. A regular and structured platform need to be developed for use between participants from all stakeholders. The EpiTel conference call is a scientifically- structured and regular platform for weekly exchange of information about current events related to infectious disease epidemiology. Exchanges include information relevant to both national and international events. All epidemiological content is derived from an established, weekly research protocol.

Objectives:

The objective of this International Assignment is to get to see how EpiTel is implemented in Germany, what is the structure and procedure of the activity and to follow all the process. The IA also provides the opportunity to familiarize with the surveillance system for communicable diseases in Germany and how the EpiLag is used to support/complement this system. The information will be used for developing a draft protocol for the implementation of EpiTel in Macedonia according the specific setting in the country.

Methods:

Theoretical and practical lessons. Meetings with relevant stakeholders and institutions from the public and private sector. Participated in two telephone conferences, present at their round table meeting in RKI, discussing for topics before the teleconferencing, after teleconferences editor preparing the report and sending to all the participants.

Results:

After following the process in RKI and also following the preparation of the procedures which are needed to be established before the implementation of this project in R. Macedonia in future it is necessary to understand that the Teleconference should give the participants adequate time to present and ask questions but should not take more than one hour of the worktime. The number of the

participants should be adequate for a good collaboration and expected results. This is the reason that only epidemiologists from the 10 Centres of Public Health will participate, they have information from the Local Units on their territory. As far as for the topics that will be prepared and discussed in the teleconference reported from representatives from regional level, it is not needed to have some pre-prepared criteria in order to avoid underreporting. Pre-set criteria on notifiable events are needed on national level in order to present only relevant information. Communication will be on Wednesday. The main reason for this decision is to have enough time to prepare and summarize all the necessary information on national as well as on regional level. Regarding the technical aspects Institute of Public Health possess one telephone with teleconference ability situated in director office. It is needed to check what kind of available solution the telephone companies in R. Macedonia offer. An additional office should be assigned for this purpose. The draft protocol for the implementation of the EpiTel in R. Macedonia was finished and waiting for approval from the authorities at the National Institute of public health.

Conclusion and recommendations:

Implementation of epidemic Teleconference between public health institutes on local and national level in R. Macedonia, Epidemic telephone-conference (EpiTel) is an innovation surveillance method in order to identify, discuss and respond to infectious disease in real time.

According to this International Assignment, activities that we have observed and the acquired knowledge we can recommend the IPH to implement Epidemic Telephone-Conferences (EpiTel) in the Republic of Macedonia.

The best way to organize the EpiTel in the Republic of Macedonia is by using landline telephone connection, network connection may be limited so Skype should be used as a last resort.

It is needed to organize the technical aspects, to finalize the SOP and the organization structure before starting the implementation.

For the implementation plan, a final draft to be shared with CPH epidemiologists on 01 March 2018, organization of a final workshop for all involved parties on 15 February 2018, notification of regional CPHs about first EpiTel and provision of templates for the report on 09 March 2018 and the first EpiTel will be in 21 March 2018.

Status: Completed

Scientific communication

- Viral hepatitis A in the Republic of Macedonia 2006-2015 - oral scientific presentation, First Annual MediPIET Scientific Conference, Marrakesh, 2016 (main author)
- Increased number of cases of acute enterocolitis in Bogovinje, Republic of Macedonia, May-June, 2016 Second Annual MediPIET Scientific Conference, Brussels, 2017 (main author)
- A retrospective study of brucellosis in Macedonia- First international scientific conference of Faculty of Medical Science - Tetovo, Macedonia (main author)
- Surveillance of influenza like illness in primary care, 5th Conference of the Association of general practice/ family medicine of South-East Europe, Budva, Montenegro (co-author)
- Distribution of methicillin resistant Staphylococcus aureus in the Republic of Macedonia in the period 2013-2015, Annual meeting of association of medical doctors, Struga (co-author)
- Effect of angiotensin-converting enzyme inhibitors in progression of chronic kidney to non-diabetic patients. Second International Scientific Conference of Faculty of Medical Science –Tetovo, Macedonia (co-author)
- Brucellosis in Human Population in R. Macedonia Before and After the Introduction of Vaccination in Animals 2001-2015 - oral scientific presentation, Second Annual MediPIET Scientific Conference, Marrakesh, 2016 (co-author)
- Evaluation of influenza ILI sentinel surveillance system in the Republic of Macedonia - oral scientific presentation, Third Annual MediPIET Scientific Conference, Brussels, 2017 (co- author)
- Haemorrhagic fever with renal syndrome in Macedonia in 2017, Days of preventive medicine, Ohrid, R. Macedonia (co-author)
- Characteristics of the 2016/2017 influenza season in the Republic of Macedonia, Days of preventive medicine, Ohrid, R. Macedonia (co-author)

Teaching experience

- Training of medical students at the Medical Faculty on Biostatistics
- Training of medical students at the Medical Faculty on Epidemiology of communicable diseases
- Preparation a brochure for Malaria
- Training of colleague students (nurses, physiotherapist, radiologist, speech therapist students) at the Medical Faculty on Biostatistics and on Epidemiology of communicable diseases

Miscellaneous (additional activities)

- Midterm Project Meeting at institute Pasteur-Medi Lab Secure Paris, France
- Programme and Workshop on Water Disease
- Training in biostatistics and medical informatics, Institute of epidemiology and Biostatistics, Medical faculty "St Kiril and Metodij"
- Training in epidemiology of communicable diseases, Institute of epidemiology and Biostatistics, Medical faculty "St Kiril and Metodij"
- Training in epidemiology of non-communicable diseases, Institute of epidemiology and Biostatistics, Medical faculty "St Kiril and Metodij"
- Workshop for revision of the protocols of the International Health Regulations 2005 and finalizing the operational part of the plan for preparation and response of the health system in emergency and crisis situations and disasters
- Training in microbiology at the Institute of Microbiology and parasitology at the Medical Faculty University "St Kiril and Metodij", Skopje, R. Macedonia
- Important steps in developing the research paper, Institute of epidemiology and Biostatistics, Medical faculty "St Kiril and Metodij", Skopje, R. Macedonia
- Time to detect and time to respond on Outbreaks & Surveillance. Digitalization Challenges in SEE Countries, Tirana, Albania
- Training on the use of ECDC Modelling Tool on HIV Surveillance Data – Stockholm Sweden
- Workshop: Epidemiological Telephone Conference in Macedonia, organized by Robert Koch Institute

List of media communications during fellowship:

<http://iph.mk/multimedija/mesecni-bilteni/>

<http://iph.mk/mali-sipanic-i-kako-da-se-zastitite/>

<http://iph.mk/kongo-krimska-hemoragicna-treska-informacii-za-naselenieto/>

<http://iph.mk/hemoragicna-treska-so-bubrezen-sindrom-informacii-za-javnosta/>

<https://www.youtube.com/watch?v=fwJQORLQ2j0>

<https://telegafi.com/bora-ul-numrin-e-te-prekurve-nga-gripi-per-11-per-qind-ne-maqedoni/>

<https://www.youtube.com/watch?v=qJ5phdxXXaY>

Answers to public addressed to IPH related to immunization issues

Next steps

With support of my supervisors, we are planning to cascade training modules on regional and sub-regional level for the regional and local epidemiologist in order to improve their skill and to strengthen

capacities for epidemiological investigation and the priority will be to focus on outbreak investigation and use of analytic epidemiology.

Following the recommendations from the Evaluation of Hepatitis A surveillance system in the Republic of Macedonia to improve and strengthen the system.

Implementation of epidemic Teleconference between public health institutes on local and national level in R. Macedonia and the First EpiTel will be on 21 March 2018.

Supervisor's conclusion

During the two-year MediPIET fellowship Largime Ballazhi was involved in a numerous public health activity including outbreak investigations and epidemiological surveillance and research projects. Ms Largime Ballazhi was able to work independently and has skills to follow through in assigned tasks. She accomplished given obligation with great initiative and with a very positive attitude. Her good communication skills helped her in team work, information exchange and building new networks. During this period, she also gained experience in writing a scientific paper and teaching public health medical students. It is our pleasure to recommend Ms. Largime Ballazhi for work in public health field.

Scientific Coordinator's conclusion

Text

References

References for your activities mentioned in the portfolio like publications