EPIET & EUPHEM

Summary of work activities
Nika Lazić
European Programme for Intervention Epidemiology Training (EPIET), 2019 cohort

Background

ECDC's Fellowship Programme is a two-year competency based training course offering two paths: the field epidemiology path (EPIET) and the public health microbiology path (EUPHEM). After the two-year training course, the graduates will have extensive expertise in applying epidemiological or microbiological methods to guide public health interventions for communicable disease prevention and control.

Both curriculum paths provide training and practical experience through a 'learning by doing' approach at acknowledged training sites across European Union (EU) and European Economic Area (EEA) Member States.

According to Articles 5 and 9 of ECDC's founding regulation (EC No 851/2004) 'the Centre shall, encourage cooperation between expert and reference laboratories, foster the development of sufficient capacity within the community for the diagnosis, detection, identification and characterisation of infectious agents which may threaten public health' and 'as appropriate, support and coordinate training programmes in order to assist Member States and the Commission to have sufficient numbers of trained specialists, in particular in epidemiological surveillance and field investigations, and to have a capability to define health measures to control disease outbreaks'.

Moreover, Article 47 of the Lisbon Treaty states that 'Member States shall, within the framework of a joint programme, encourage the exchange of young workers' which is why ECDC initiated the two-year EUPHEM training programme in 2008. EUPHEM is closely linked to the European Programme for Intervention Epidemiology Training (EPIET). Both EUPHEM and EPIET are considered 'specialist pathways' of the two-year ECDC fellowship programme for applied disease prevention and control.

This report summarises the work activities undertaken by Nika Lazić, cohort 2019 of the Intervention Epidemiology path (EPIET) at the Croatian Institute of Public Health (NIPH).

Pre-fellowship short biography

Nika Lazić is a medical doctor. Since 2015 she has been working as an epidemiology resident at the Epidemiology Department of the Andrija Stampar Teaching Institute for Public Health (ASTIPH). During her residency she worked in the field of communicable and non-communicable diseases. In 2015 and in 2018 she had an active role in conducting COSI (Childhood Obesity Surveillance Initiative) surveys in Croatia.

Methods

This report accompanies a portfolio that demonstrates the competencies acquired during the EPIET fellowship by working on various projects, activities and theoretical training modules.

Projects included epidemiological contributions to public health event detection and investigation (surveillance and outbreaks); applied epidemiology field research; teaching epidemiology and the summary and communication of scientific evidence and activities with a specific epidemiological focus.

The outcomes include publications, presentations, posters, reports and teaching materials prepared by the fellow. The portfolio presents a summary of all work activities conducted by the fellow, with the exception of those prohibited for reasons of confidentiality.

Results

The objectives of these core competency domains were achieved partly through project or activity work and partly through participation in the training modules. Results are presented in accordance with the EPIET core competencies, as set out in the ECDC Fellowship Manual[1].

1. Epidemiological investigations

1.1. Outbreak investigations

Waterborne outbreak in municipality Petrovsko, Krapinsko-zagorska county in February 2020

Supervisors: Ivan Lipovac, Sanja Kurečić Filipović

On 17 February 2020, the National Institute of Public Health received information from the Institute of Public Health of Krapinsko-zagorje county on a possible waterborne outbreak in Petrovsko municipality, Krapinsko-zagorska county. An outbreak investigation team (local field epidemiologist, sanitary inspector, and an epidemiologist from NIPH) started the investigation to assess the extent of the outbreak, identify the mode/vehicle of transmission and impose adequate disease control measures.

As there were known structural problems with the water supply combined with interrupted water supplies due to damaged water pipes a day before the index case's symptom onset, it was suspected that the outbreak could be caused by water contamination. Water was sampled at three different locations and disease control measures on drinking water safety were recommended (information for the public and recommendations on cleaning and disinfecting the water supply system were issued). Since the outbreak was detected very early, a follow-up of the situation and retrospective cohort study of the region (220 households) was planned.

Cases were defined as those with gastrointestinal symptoms with onset between 9 and 24 February 2020, who either lived in or had visited the area and who had drunk tap water prior to symptom onset. Seventeen cases met the case definition. The first case had symptom onset on 13 February and last cases reported symptom onset on 18 February 2020. Unfortunately, the whole investigation was abruptly stopped due to the evolving COVID-19 situation and the appearance of the first COVID-19 case in Croatia. The planned retrospective cohort study was therefore never performed.

Nika was the co-investigator. She performed data collection (in the field from the regional medical doctor), data entry and data analysis and interpreted the epidemiological data. She also created a leaflet about safe water consumption for humans which was distributed to the public. She also wrote a report on the outbreak investigation.

COVID-19 outbreak at a kindergarten in Zagreb, January-February 2021

Supervisors: Mirjana Lana Kosanovič Ličina, Sanja Kurečić Filipović

On 28 January 2021, epidemiologists from Andrija Stampar Teaching Institute of Public Health were informed by a kindergarten director of a possible COVID-19 outbreak. The short incubation period between cases showed the potential for rapid spread. Epidemiological and microbiological investigations were performed, including the identification of the SARS CoV-2 variant. The outbreak investigation team recommended testing of all those attending and working at the kindergarten (19 children and five personnel) and telephone interviewed all cases (or a parent when the case was a child). Cases were defined using the ECDC criteria for a probable or confirmed COVID-19 case,

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[1] European Centre for Disease Prevention and Control. European public health training programme. Stockholm: ECDC; 2020. Available from: https://www.ecdc.europa.eu/en/publications-data/ecdc-fellowship-programme-manual-cohort-2021

with symptom onset between 14 January and 3 March, as either children attending the kindergarten or one of their close contacts. Whole genome sequencing was performed using Illumina sequencing technology.

There were 19 confirmed and three probable cases identified. Six cases (five children and one teacher) attended or worked at the kindergarten, while 16 (possibly secondary) cases were in the same households as children attending the kindergarten. All cases were symptomatic (fever, weakness and headache were the most reported symptoms). Six of the 22 cases were aged 3−6 years, 16 cases were adults, and none of the cases reported recent travel abroad. Among those attending the kindergarten (N=24) the AR was 25%, the AR could not be calculated for the households of children attending the kindergarten. WGS was performed for 11 of the confirmed cases and identified two SARS-CoV-2 lineages, B.1.258 (ΔH69/ΔV70 and N439K) in five and B.1.526 with E484K mutation in three specimens. This outbreak demonstrates the significant potential for spread of SARS-CoV-2 among kindergarten children and further spread to members of their households. Imposed outbreak control measures, such as active case finding, limited further spread, demonstrating the importance of implementing such measures early. This investigation led to the first detection of the B1.526 variant in Croatia, stressing the importance of continuous surveillance of subtype circulation.

Nika was the principal investigator in this outbreak. She carried out case interviewing and contact tracing, imposed disease control measures on the kindergarten, performed data collection (through case interviewing) and data entry, analysed the data and wrote the final report. She wrote and submitted a manuscript (as a rapid communication article) about the outbreak and identification of the new SARS-CoV-2 lineages in Croatia [1] and submitted an abstract on the outbreak to ESCAIDE 2021 [7].

Development of 'Andrija': an artificial intelligence-powered public-facing digital assistant for self-assessment, diagnosis, and health communication during the COVID-19 epidemic in Croatia

Supervisor: Branko Kolarić

In March 2020, when local transmission of COVID19 was first confirmed in Croatia, it was quickly recognised that existing communication systems may be overloaded. To help address this, the Croatian government, the Ministry of Health and public health experts collaborated to develop 'Andrija', an artificial intelligence (AI) digital assistant.

The Croatian Ministry of Public Administration, which has been working on the digitalisation of public administration using digital assistants, formed an expert group of policy experts, epidemiologists, and IT experts. Frontline field epidemiologists identified topics that needed to be better communicated to the public. The topics were adjusted as a communication flow for the AI by IT experts and reviewed for information quality and delivery by field epidemiologists. A new digital assistant named 'Andrija' was launched on 15 April 2020 and made available to the public through the web domain www.andrija.ai.

'Andrija' works via a WhatsApp application, uses simple language, and mimics a real conversation with an expert, thus decreasing public concern and apprehension during the pandemic. 'Andrija', is a user-friendly, emotionally intelligent AI tool that has enabled up-to-date COVID19 guidelines to be easily communicated with the Croatian public. The tool provides a communication platform that can be adapted for use in other public health emergencies.

Continuous updates are being made as the COVID19 situation evolves within the country, and a comprehensive evaluation of the tool is planned.

Nika participated in the creation of Andrija, identifying the topics requiring better communication with the public, reviewing Andrija for information quality and delivery, and updating Andrija in relation to entry requirements and border-crossing during the pandemic. She developed a leaflet the COVID19 control measures imposed for those entering Croatia and translated it into English and Spanish. She also created an abstract and submitted it to ESCAIDE 2020 [6].

Salmonellosis outbreak following a wedding dinner, September 2019, Croatia; the role of outbreak investigation when considering legal action against a caterer

Supervisor: Mirjana Lana Kosanović Ličina

On 18 September 2019, the Andrija Stampar Teaching Institute of Public Health (ASTIPH) was informed of an outbreak of gastrointestinal illness among guests at a wedding on 14 September. We investigated to identify the vehicle and to prevent further cases. Although the outbreak investigation proceeded as per usual practice, the communication of the findings had unforeseen implications. The wedding couple subsequently requested the outbreak report, as they were considering taking legal action against the caterer.

We conducted a retrospective cohort study among wedding guests by means of an online questionnaire. Probable cases were defined as guests who developed diarrhoea between 15−18 September and confirmed cases as guests with laboratory confirmation of *Salmonella* from a stool sample. We assessed associations between food exposures at the wedding and illness. Microbiological testing was performed in local laboratories and at the National Reference Laboratory for *Salmonella*. A sanitary inspector carried out an environmental investigation of the catering premises.

Forty-three of the 92 guests (47%) completed the online questionnaire; 14 guests met the case definition (attack rate 33%). *Salmonella* Typhimurium and *Salmonella* type B were identified for nine confirmed cases. Two food items were significantly associated with the cases; eating roast suckling pig had the highest risk ratio (RR=5.18, 95%CI:1.32-20.3) and explained 86% of cases. Eight (19%) respondents reported that the piglet was visibly undercooked. The pathogen was not confirmed in leftover food or from environmental testing.

The epidemiological investigation suggested that the undercooked suckling pig was the vehicle of infection, but no microbiological results were available to support this hypothesis. We provided a report to the couple with the main findings and suggested that the State Inspectorate should develop protocols with objectives and guidelines for communicating investigation results in such scenarios. We recommend providing more information on proper heat treatment of high-risk food during the obligatory training sessions for food handlers provided by public health institutes at five-year intervals. Routine analytical epidemiological studies of outbreaks following private events should be carried out to better understand the sources of outbreaks in Croatia, and how to prevent them.

Nika helped with the writing and reviewing of the report for the couple and the disease control measures for food handlers (catering). She also reviewed the abstract that was submitted to ESCAIDE 2020 and created a poster for ESCAIDE 2020 [5].

Training modules related to assignment/projects

EPIET/EUPHEM Introductory Course introduced fellows to the 10 steps of outbreak investigation, and main concepts of study design and analysis. Fellows were able to deepen their knowledge during the case studies where they were able to practice the 10 steps of outbreak investigation, descriptive epidemiology, and data analysis.

Outbreak Investigation Module – was the main module about outbreak investigation to expand fellow's knowledge they gained during the Introductory course. The module went more into depth about the 10 steps of outbreak investigation as well as using different tools such as mapping that can be used in different outbreak setting.

Multivariable Analysis Module – prepared fellows to conduct any analytical study in outbreak investigations thus allowing them for a more-in-depth analysis. It allowed fellows to improve their statistics knowledge.

Rapid Assessment and Survey Methods (RAS) module – in the context of outbreak investigation this module prepared fellows for outbreak response in emergency settings, as well as the importance of hierarchy when working under such stressful conditions. During the module the fellows learned about the importance of outbreak communication with key stakeholders and the public.

Educational outcome

Nika gained confidence in conducting outbreak investigation as a main investigator, following the 10 steps of outbreak investigation. Being involved in the COVID-19 epidemic response helped her to develop adaptability skills to cope with new and evolving situations, fast response, extreme workload, and a stressful environment. Nika enhanced her analytical knowledge and observational and investigational way of thinking. She also improved her outbreak reporting in English and communication skills with the public.

1.2. Surveillance

COVID-19 epidemic response, daily data analysis and reporting of COVID-19 new cases in Zagreb to the Croatian Institute of Public Health (NIPH), February–March 2020

Supervisors: Vanja Tešić, Mirjana Lana Kosanović Ličina

COVID-19 is an infectious disease caused by a new coronavirus called SARS CoV-2. In Croatia, the first COVID19 case was detected on 25 February 2020, in the city of Zagreb. The rapidly changing COVID-19 situation in the region and in Croatia necessitated daily adjustments of disease control measures at national and regional level. NIPH demanded all essential information on new COVID-19 cases from regional public health institutes, including name, date of birth, address, type of work, probable place of infection (imported or not), whether the case was a contact of a confirmed COVID-19 case, personal information on the case's contacts, and the duration and location of their imposed quarantine. To meet this demand from NIPH, field epidemiologists from Andrija Stampar Institute of Public Health developed a questionnaire and data entry mask to deliver the requisite data for this new notifiable disease to NIPH. The use of this questionnaire and data entry mask facilitated standardised data collection, which improved data quality. Furthermore, digitising the collection of data increased the efficiency and work efficacy of field epidemiologists. At the beginning of the COVID-19 outbreak in Croatia (in February and March 2020), NIPH received daily reports of new COVID-19 cases in Zagreb, based on data from the prepared questionnaire. Excel tables were utilised in daily reports.

Nika is a member of the COVID-19 response team in the Epidemiology Department of the Andrija Stampar Teaching Institute of Public Health, Zagreb, Croatia. Since the beginning of the epidemic, her duties were related to case interviewing and contact tracing in Zagreb and she coordinated measures such as case isolation, quarantine for contacts and referral for testing of those with suspected COVID-19. Nika also participated in the development of the questionnaire and data entry mask, performed data entry and data analysis. In addition, she reported to the National Institute of Public Health on a daily basis. She was also involved in on-call preparedness for which she had to

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communicate and provide advice and up-to-date information to the public and various stakeholders (e.g. decision-makers, epidemiologists and microbiologists from other regional institutes of public health and the National Institute of Public Health, general practitioners and clinicians).

Setting up the enhanced COVID-19 surveillance system in the city of Zagreb

Supervisors: Mirjana Lana Kosanović Ličina

On 25 February 2020, the first COVID-19 case in Croatia was recorded in Zagreb. With the fast-changing COVID-19 situation in neighbouring countries, and the increasing case numbers in Zagreb, it became necessary to have an enhanced COVID-19 surveillance system. The primary goal of the enhanced surveillance system was to assist field epidemiologists with daily tasks such as case interviews, contact tracing, and epidemic detection within Zagreb. A system was set up by an IT company with the assistance of regional epidemiologists who customised it to their needs. The platform also made it easier to report new COVID-19 cases to NIPH on a daily basis by standardising and speeding up the process.

The surveillance system is divided into seven main components: basic information about COVID-19 positive person/close contact, when (exact dates) and where the person will remain in isolation/quarantine, history of SARS CoV-2 testing, symptomatology of the disease and details of any chronic diseases/conditions, data regarding the COVID-19 epidemiology (where and from whom the person was infected with COVID-19 (if known), where person works, recent travel history), list of close contacts of the person testing positive for COVID-19, probable location of infection (outbreak detection).

Nika was involved in the whole process of setting up the surveillance system and adjusting it where necessary. She performed data entry and analysis and reported to NIPH on new COVID-19 cases based on the data from the enhanced surveillance.

Haemorrhagic fever with renal syndrome (HFRS) in Croatia over the last five years– an analysis based on data from the Croatian surveillance system for infectious diseases

Supervisors: Sanja Kurečić Filipović

According to the 'Protection of the Population Against Communicable Diseases Act', haemorrhagic fever with renal syndrome (HFRS) is a notifiable disease. Since 1952, HFRS, also called mouse fever, has been observed sporadically in Croatia. Several large outbreaks have been documented, most of which occurred in the 2000s. All of Croatia is considered endemic, with the exception of the coast and islands. Since January 2021, an increase in HFRS case notification has indicated that there might be another ongoing outbreak. The aim of the study was to examine the characteristics (age and sex) of HFRS cases reported in Croatia, as well as their occurrence (incidence and total number) by county for the period from 1 January 2016 to 30 April 2021. The Croatian case definition is used to define HFRS cases. During the study period, 740 cases of HFRS were recorded, 624 of which were confirmed. The year with the most recorded cases was 2017 (389 cases), and the largest number of reported cases (120) were in Zagreb. Most cases (80%) were men, and the majority of cases (83%) were aged between 25 and 65 years. Cases of HFRS have been reported in practically every county, with a clear increase in the number of cases during epidemic years. Given the shorter time intervals between epidemic years, the increasing number of cases in each epidemic, and the occurrence of HFRS cases throughout Croatia, it is crucial to raise awareness of mouse fever, the disease itself, modes of infection, potential sites of virus exposure, and personal protection measures to reduce risk of infection, both at the national level and, more specifically, in areas with a high incidence.

Nika was the principal investigator. She created a study protocol, performed data analysis, and wrote a report published in Monthly Epidemiological Bulletin of Croatian Institute of Public Health [4] and a version in English.

Training modules related to assignment/projects

EPIET/EUPHEM introductory course - During the module, the key principles of surveillance were studied. It also taught fellows about surveillance development, assessment, and how to do data analysis and draw conclusions and make public recommendations based on the results.

Time Series Analysis module – prepared fellows for more in-depth data analysis.

Multivariable Analysis Module – The MVA module expanded the fellow's statistical knowledge and introduced various regression methods for data analysis.

Educational outcome

Nika deepened her knowledge of surveillance data analysis, public health recommendations, and outbreak detection based on surveillance data. During the COVID-19 pandemic, Nika developed skills in surveillance set-up and adjustment to specific needs that change over time. She also improved her knowledge of how to write a data analysis protocol, and developed her writing skills for the reporting of findings and recommendations.

2. Applied public health research

SARS CoV-2 PCR-testing in school aged children in Croatia during the first term of the school year 2020−2021

Supervisor: Sanja Kurečić Filipović

In Croatia, an increase in COVID-19 case numbers was observed from summer 2020 onwards. A sudden surge in new cases was noted from week 42 which peaked in week 50. Primary and secondary schools remained open, despite high community transmission. Testing was recommended primarily for symptomatic individuals. We aimed to investigate the PCR-testing rate (TR), PCR-test positivity rate (TPR) and number of PCR-confirmed cases in the population and TR and TPR in school-aged children in the four Croatian NUTS regions separately.

A retrospective study was performed, using data from week 37 to 52 of 2020 provided by the national laboratory COVID-19 database. The study population (the total Croatian population) was divided into age groups: preschool and school-aged children and adults. We calculated TR and TPR for all groups separately. School-aged children were further divided into grade groups, for which the TR and TPR was calculated. Mean TR and mean TPR for the study period in school-aged children were described for different NUTS regions. The study methodology was slightly changed during the project: in the early stages, we analysed all with the following data: date of birth, date of testing, and PCR-test results, focusing on the number of PCR-tests performed, whereas in later analyses, we also included personal ID numbers focusing on the number of individuals who were PCR-tested.

The total numbers differ per approach, but the overall trends appear to be similar. The TR was higher in adults than in school-aged and preschool-aged children. The TPR increased gradually in all age groups, being the highest in school-aged children between weeks 37 and 46. In school-aged children the PCR testing rate was the highest in grade group 3 and the lowest in group 1. The TR and TPR in school-aged children differed between the NUTS regions.

During the study period, the TR in adults was greater than in children, but the TPR was higher in school-aged children than in adults, with secondary school students having the highest rate. This could imply that more testing in children is required to determine the true role of children in overall viral transmission.

Nika was the principal investigator. She prepared the protocol, performed data analysis and wrote and submitted an abstract for ESCAIDE 2021 [8], which was accepted as a poster presentation. She also prepared a manuscript and submitted it to a peer-reviewed journal [2].

Training modules related to assignment/projects

EPIET/EUPHEM Introductory Course- taught the fellow about study designs, how to draft a research protocol, how to frame a research question, and how to prepare aims and objectives for the study. The course provided the basis for the following modules.

Outbreak Investigation Module- broadened the fellow's knowledge on study design and further analyses based on the descriptive findings of the outbreak. In addition, it enhanced knowledge on developing relevant aims and objectives and how to present the findings.

Multivariable Analysis Module –deepened the fellow's statistical skills.

Rapid Assessment and Survey methods (RAS) module – deepened knowledge in outbreak investigation, and communication of findings in an emergency setting with a fast-evolving situation and the need for rapid investigation results.

Educational outcome

Nika learned how to prepare a study protocol, how to create a research question, how to formulate the aim of the study and its objectives. She also strengthened her statistical skills. In addition, she gained confidence in conducting a research project from beginning to end, preparing a manuscript for submission to a peer-reviewed journal in English, and communicating the study findings to the scientific community and other stakeholders.

3. Teaching and pedagogy

Teaching medical personnel about COVID-19 case interviewing and contact tracing

Nika prepared materials and performed a lecture for psychiatrists working at Andrija Stampar Teaching Institute of Public Health and two medical doctors working in the army, who were all recruited to work on COVID-19 contact tracing. She helped prepare teaching materials on COVID-19 case interviewing and contact tracing. She also gave a lecture during which she demonstrated how to interview a case and introduced participants to the surveillance programme and how to perform data entry.

Giardiasis in Bergen, Norway, September-December 2004 – facilitation of the outbreak investigation case study

Nika and EPIET colleague Anita Shah led a three-hour online case study of giardiasis in Bergen to third-year medical students at Radboud University Medical Centre, University of Nijmegen. The evaluation of the session was carried out using a Google form questionnaire. The response rate was 43%, and the results demonstrated overall satisfaction with how well both facilitators performed and how the case study was presented.

Training modules related to assignment/projects

EPIET/EUPHEM Introductory Course – introduced the fellow to the basics of teaching, creation of teaching materials, and overall preparation for lecturing.

Educational outcome
Nika Lazic learned how to prepare teaching materials and how to adjust the presentation to the specific audience. Nika improved her teaching skills and overall communication with students. She also learnt how to evaluate the entire process in order to better prepare for future teaching assignments.

4. Communication

Publications related to the EPIET fellowship

1. Lazic N, Kurecic Filipovic S, Kosanovic Licina ML, Tabain I, Ferencak I, Vranes J. First detection of two different SARS-CoV-2 variants in Croatia linked to a kindergarten outbreak in January – February 2021 in Zagreb. [Submitted to Eurosurveillance].
2. Lazic N, Kurecic Filipovic S, Buble T. SARS CoV-2 PCR testing among school-aged children in Croatia during the first semester of the 2020-2021 school year. [Submitted to Eurosurveillance].

Reports

3. Lazic N, Kurecic Filipovic S. COVID19 outbreak in kindergarten in the city of Zagreb January and February 2021.
4. Lazic N, Kurecic Filipovic S. Hemoragijska groznica s bubrežnim sindromom (HGBS) u Hrvatskoj u periodu od 2016 godine do svibnja 2021. Monthly Epidemiological Bulletin of Croatian Institute of Public Health, June 2021.

Conference presentations

5. Ilic M, Kosanovic Licina ML, Boneta J, Lazic N, Lipovac I. Salmonellosis outbreak following wedding dinner, September 2019, Croatia; the role of outbreak investigation in considering legal action against caterer. [Submitted to ESCAIDE 2020, accepted as a poster presentation].
6. Lazic N, Kolaric B. 'Andrija', an artificial intelligence-powered public-facing digital assistant for self-assessment, diagnosis and health communication during the COVID-19 epidemic in Croatia. [Submitted to ESCAIDE 2020].
7. Lazic N, Kurecic Filipovic S, Kosanovic Licina ML, Tabain I, Ferencak I, Vranes J. Two different SARS CoV-2 lineages causing a kindergarten outbreak in January - February 2021 in Zagreb, Croatia. [Submitted to ESCAIDE 2021].
8. Lazic N, Kurecic Filipovic S, Buble T. SARS CoV-2 PCR-testing in school-aged children in the first semester of school year 2020/2021 in Croatia. – An analysis based on the Croatian laboratory COVID-19 database. [Submitted to ESCAIDE 2021, accepted as a poster presentation].

Other

9. Lazić N, Lazić V, Kolarić B. First three months of COVID-19 in Croatia, Slovenia, Serbia and Federation of Bosnia and Herzegovina – comparative assessment of disease control measures. Infektološki glasnik. 2020 [pristupljeno 26.02.2021.];40(2):43-49. Available at: https://doi.org/10.37797/ig.40.2.1
10. Nemeth Blažić T, Tomljenović M, Ilić M, Lovrić Makarić Z, Lazić N. Edukacija specijalizanata epidemiologije na europskom programu (EPIET) – naša iskustva. Liječničke novine 187, 58-59.

5. Other activities

Revision of definitions for notifiable diseases specified under the Law on Population Protection from Infectious Diseases, those identified as notifiable by the European Union, and those identified as notifiable by Croatia

Supervisor: Sanja Kurečić Filipović

In Croatia, some diseases are notifiable under EU legislation and some are notifiable according to Croatian legislation. In June 2018, the European Commission published revised definitions of diseases reported in the European Union (Commission Implementing Decision (EU) 2018/945 of 22 June 2018 on the communicable diseases and related special health issues to be covered by epidemiological surveillance as well as relevant case definitions).

The revision of disease definitions reported in the EU prompted the need to revise and adjust definitions of the diseases notifiable in Croatia. We revised the definitions of notifiable diseases in Croatia and their case definitions from 2012. Croatian case definitions were standardised for the first time, adopting the methods and style used in the EU to classify cases of notifiable diseases.

Nika and Maja Ilic, an EPIET fellow from cohort 2018, revised, adjusted, and updated the definitions of notifiable diseases and standardised the case definitions. The revised version is awaiting final approval from Croatian the health minister, which has been delayed due to the COVID-19 pandemic.

First three months of COVID-19 in Croatia, Slovenia, Serbia and Federation of Bosnia and Herzegovina – comparative assessment of disease control measures

Supervisor: Branko Kolarić

The uncertainty surrounding the emerging coronavirus threat prompted countries to adopt various disease control measures. This study compares the measures and the epicurves in Croatia, Slovenia, Federation of Bosnia and Herzegovina and Serbia in the first three months of COVID-19 epidemic. The open-source data of COVID-19 confirmed cases and the disease control measures were analysed. For comparison between countries, seven benchmark control measures were used: closure of educational institutions, complete lockdown, border closure, public transport ban, restriction of movement within the country, easing of the lockdown measure, and borders re-opening. The time passed from the first detected and confirmed COVID-19 case and each disease control measure was recorded, as well as the time between the declaration of the epidemic declaration and each control measure. The results provide a comparative description of the time flow of disease control measures across the countries and relative to the number of confirmed cases.

Nika was the main investigator, she prepared the research protocol and carried out data gathering and data analysis. Nika prepared a manuscript that was submitted and accepted by a peer-reviewed journal [9].

6. EPIET/EUPHEM modules attended

1.   ECDC fellowship Introductory course, 23 September – 11 October 2019, Spetses, Greece

2.   The Outbreak Investigation Module 2019, 9-13 December 2019, Nicosia, Cyprus

3.   Multivariable Analysis (MVA) webinar module, 15-19 June 2020, online, hosted jointly by the Robert Koch Institute.

4.   The Project Review Module 2020, 24-27 August 2020, online.

5.   Time-Series Analysis (TSA) Module, 25-29 January 2021, online.

6.   The Rapid Assessment & Survey Methods (RAS) Module, 27 April , 5-6 May, 2021, online

7.   The Vaccinology module 2021, 14-18 June 2021, online.

8.   The Project Review Module 2021, August, online.

7. Other training

UNDSS 'BSAFE' online course, 3 May 2021.

Discussion

Coordinator's conclusions

One of the main goals of the EPIET programme is for fellows to develop core competencies in field epidemiology, mainly through project or activity work, and partly through participation in training modules and the application of epidemiological methods to guide public health interventions for communicable disease prevention and control. This report summarises all activities and projects conducted by Nika during her two-year EPIET fellowship (cohort 2019) as an EU/MS-track fellow at the Croatian National Institute of Public Health in Zagreb.

Nika has been able to deepen and expand her knowledge and skills in all the areas covered by the fellowship as an MS-track fellow. This development was especially noticeable in epidemiological studies, communication and teaching. The COVID-19 pandemic has had a large impact on her fellowship. For instance, Nika contributed to the national response by setting up the enhanced COVID-19 surveillance system. She also investigated testing for COVID-19 in school-aged children in Croatia, as well as a COVID-19 outbreak in a kindergarten. Nika has proven very flexible and able to deal with challenging situations, managing to finish all her projects and meet all the requirements for EPIET, despite complicated circumstances. She has also demonstrated a strong willingness to improve her work, being very open to feedback. Furthermore, she is very motivated and enthusiastic, which made it a real pleasure to work as her frontline coordinator. It is great that Nika will continue contributing to public health in Croatia. I wish her all the best for her future career.

Supervisor's conclusions

Nika started her EPIET fellowship as a medical doctor already specialising in epidemiology which is one of the medical specialisations open to medical doctors in Croatia. Nika's interest and dedication to solving a wide range of epidemiological issues was indisputably recognised throughout her fellowship. She has shown a high degree of professional enthusiasm and independence, but also openness to learning and professional development. She has also shown adaptability to new challenges, given the emergence of the COVID-19 pandemic at the beginning of 2020, which required her to learn and work in stressful environment, the like of which has never been seen before. At the beginning of the pandemic, she was involved in two important projects: setting up the enhanced COVID-19 surveillance system in Zagreb, the capital of Croatia and working on a innovative digital assistant 'Andrija'. Her determination to contribute to COVID-19 pandemic control in Croatia has not weakened throughout the whole fellowship, as demonstrated in the different tasks and projects she has undertaken, without neglecting the other competencies she needed to develop. I have enjoyed supervising Nika and sharing ideas with her and it has been a learning curve for me as well. I believe Nika has developed competencies that will substantially contribute to her work in the national, and also international epidemiology of infectious diseases.

Personal conclusions of fellow

Being a part of the EPIET fellowship encouraged me to work harder and be more independent. It shaped my path to learning new skills that will help me with my everyday work. The fellowship provided me with an incredible opportunity to expand my knowledge of performing applied research in public health, to be a primary investigator in an outbreak investigation, and to be a part of other amazing epi projects. During the fellowship, I was also able to present my work to other colleagues and submit publications to peer-reviewed journals and the ESCAIDE conference.

Throughout the fellowship, I recognised the true value of project-based learning and will advocate for such a learning concept among epidemiologists in Croatia.

What I enjoyed most was meeting a fantastic group of passionate professionals, my cohort, who were always open to epi conversations. It was wonderful to work with and get to know specialists from all over the world (including supervisors and facilitators), to hear their amazing experiences, and to learn from them.

This entire journey was not easy, especially given the COVID-19 epidemic, but given the circumstances, I would not change anything, and I am grateful to have been a part of it.

Acknowledgements of fellow

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