



## Summary of work activities

### Chrysovaladou – Niki Kefaloudi

### 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 Chrysovaladou - Niki Kefaloudi, Cohort 2019 of the Intervention Epidemiology path (EPIET) at the National Public Health Organization of Greece.

## Pre-fellowship short biography

Chrysovaladou – Niki Kefaloudi holds a Bachelor's degree in Environmental Science from the University of Lancaster and a Master's degree in Environmental Health from the Medical School of the University of Athens. For the past 16 years she has been working at the Hellenic National Public Health Organization as a public health professional with a special interest in the area of infectious diseases related to environmental conditions. She has gained extensive experience in participating in outbreak investigations of vector borne diseases since 2010 as an environmental health specialist. She has also contributed on several occasions to the development of guidelines on public health protection from waterborne, foodborne and vector-borne diseases, particularly in emergency situations (e.g. floods, fires and earthquakes). In September 2019, she started the EPIET-fellowship as a Member-State-track fellow.

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## Methods

This report accompanies a portfolio that demonstrates the competencies acquired during the EPIET fellowship by working on various projects, activities, theoretical fellowship training modules, other modules or trainings and from international assignments or exchanges.

Projects included epidemiological contributions to public health event detection and investigation (surveillance and outbreaks); applied epidemiology field research; teaching epidemiology; summarising and communicating scientific evidence and activities with a specific epidemiology 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, unless prohibited due to confidentiality regulations.

## 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<sup>1</sup>.

### 1. Epidemiological investigations

#### 1.1. Outbreak investigations

##### *Investigation of a waterborne outbreak of mixed pathogens in the Peloponnese, Greece, 2020*

Supervisors: Kassiani Mellou and Theologia Sideroglou

On 15 June 2020, the Directorate of Epidemiological Surveillance and Intervention for Infectious Diseases at the National Public Health Organization (NPHO) was informed of two cases of gastroenteritis in Village X in the Peloponnese region of Greece. Both cases reported symptoms on 31 May 2020. Stool samples were collected from both which tested positive for enterohemorrhagic *Escherichia coli* (EHEC), serotype O-157 (film array). In addition, local healthcare centres and pharmacists reported a large number of cases seeking medical care or medicines for diarrhoea symptoms from the end of May onwards. Due to the number of cases, public health officers at the Department of Foodborne and Waterborne diseases of the National Public Health Organization (EODY) decided to start an investigation to assess the extent of the outbreak, identify the mode and vehicle of transmission and initiate appropriate control measures.

A case-control study was designed. In addition, stool and environmental samples were collected. In total, 58 cases and 57 controls were identified and interviewed. The median age of cases and controls was 46 years (range: 8-78) and 55 years (range: 3-96) respectively. Multivariable analysis showed a statistically significant association between gastroenteritis symptoms and a) drinking tap water (OR = 10.9, 95% CI = 3.1-38.0, p <0.001) and b) using ice cubes made from tap water (OR = 39.3, 95% CI = 10.3-150.9, p <0.001). With regard to laboratory investigations, of the nine stool samples collected, one was positive for *E. coli* STEC, one was positive for *E. coli* (EPEC) only, two were positive for *E. coli* O157 and one was positive for *Salmonella* spp. No pathogens were found in any of the environmental samples. Although delayed notification prevented verification by means of environmental sampling, the epidemiological investigation succeeded in identifying water as the probable source in order to prevent further transmission.

Niki was the lead investigator during the outbreak investigation. She developed the questionnaire, collected data, developed the data entry mask, performed data entry and conducted the analysis. She also communicated with the labs, the municipality and the regional authorities for the on-site investigation. She wrote the final outbreak report and provided recommendations which were sent to the local public health authorities. She presented a poster detailing the investigation at ESCAIDE 2020.

##### *Training modules related to assignment/projects*

###### **EPIET/EUPHEM Introductory Course**

During the Introductory Course, the fellow was provided with the general concepts relating to the 10 steps of an outbreak investigation. After reviewing the case study 'Legionellosis in Norway', she could construct and interpret an epidemic curve, interpret the descriptive data, calculate the attack rates and the relative risks.

###### **Outbreak Investigation Module**

During the Outbreak Investigation Module, the fellow was trained in various different aspects of the analysis of an outbreak investigation and the statistical tools needed for the univariate analysis. After this module, she could understand and apply univariate analysis for the outbreak investigation.

<sup>1</sup> 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>

### **Multivariable Analysis Module**

Through a series of lectures and exercises, the fellow was trained in selecting the best fit model (linear regression, poison regression, negative binomial regression, binomial regression) for multivariable analysis which helped her to practise and improve her statistical skills. She used these skills in conducting multivariable analysis to identify statistically significant associations between the case and the exposures for the waterborne outbreak investigation.

### **Educational outcome**

The fellow was involved in all the stages of an outbreak investigation as the lead investigator, with the help of the Department of Foodborne and Waterborne Diseases. Upon completion of the investigation, she was competent in confirming the outbreak, verifying the diagnosis, creating case definitions for cases and controls, case finding and using data collected to perform descriptive epidemiology, create and interpret epidemic curves, generate hypothesis, conduct univariate and multivariable analysis and recommend control measures. She also gained extensive experience in communicating with laboratories to interpret laboratory results.

### **Investigation of a possible locally-acquired malaria case in Greece, 2020**

Supervisors: Kassiani Mellou and Danai Pervanidou

On 26 August 2020, the Directorate of Public Health and Social Solidarity of the Region of East Macedonia and Thrace reported a confirmed case of *P. vivax* malaria to the Department of Vector-Borne Diseases at the National Public Health Organization (NPHO). The final laboratory confirmation of the diagnosis was carried out by the General Hospital of Didimoticho and the national reference laboratory of the School of Public Health at the University of West Attika.

Following a telephone interview with the case, the Department of Vector-Borne Diseases contacted the local Directorates of Public Health and Social Solidarity, the local healthcare facilities, the Municipality of Orestiada, and the Ministry of Health working groups for the designation of vector-borne diseases (VBD) in the affected areas to inform them of the case and possible areas of exposure. The Department made recommendations for increased awareness among health professionals in the area regarding malaria cases, intensification of vector control programmes and the implementation of information campaigns to encourage people to protect themselves against mosquito bites. Based on the Ministry of Health's 2015 'National Action Plan for the Management of Malaria', an NPHO investigation team was deployed in order to perform a 'focus investigation', including screening for malaria-compatible symptoms and testing for malaria in all individuals living in a close radius to the malaria case.

Between 29 August and 2 September 2020, the field investigation team visited households located within 400 metres' radius of the malaria case (door-to-door investigation). The residents of each household were informed of malaria symptoms, treatment, routes of transmission, and they were asked whether they had developed symptoms (fever, chills, myalgia) during the two weeks prior to the visit. Furthermore, leaflets were disseminated regarding protection against mosquito bites. In total, 306 households and shops were investigated in close proximity to where the malaria case resided. During the investigation, no residents reported having had symptoms compatible with malaria during the previous two weeks.

Niki organised the investigation team and the communication between the local authorities, the National Public Health Organization and the local hospitals and participated in the field investigation team. She also conducted interviews and collected data.

### **Educational outcome**

Participating in a field investigation team was a great opportunity for the fellow to deal with various organisational problems in the field and to be involved in multi-sectoral teams with different backgrounds and educational training. It was also an excellent opportunity to expand her communication skills.

## **1.2 Surveillance**

### **Brucellosis in humans 2005-2018 - summary and analysis of epidemiological data**

Supervisors: Kassiani Mellou and Georgios Dougas

Brucellosis is caused by direct or indirect contact with animals or contaminated animal products. The common reservoirs for brucella bacteria are cattle, pigs, sheep, goats and dogs. According to the data reported in Europe, Greece, Italy and Spain report the highest numbers of confirmed cases nearly every year. The main objectives of the study are to describe the epidemiology of brucellosis in Greece for the period 2005–2018, and to identify potential changes in the epidemiology of the disease during this period, in order to provide public health recommendations for targeted and effective control measures. For the purposes of the study, data was analysed for demographic characteristics, exposure, clinical symptoms and to assess time trends, seasonality and geographical distribution.

In total, the brucellosis database contained 2 256 records obtained for the period 2005–2018. The median age of brucellosis cases was 44 years, ranging from 0 to 95 years and the highest mean notification rate was recorded in the 45–64 year age group (1.28/100 000). The vast majority of the cases (71.5%) (n=1 175) reported coming into contact with farm animals, either as a result of their occupation or their ownership of domestic farm animals. Sixty-three percent of cases (n=1 070) reported having fever and one or more of the most common symptoms included in the case definition. In general, brucellosis cases were recorded in all 13 regions of Greece, although significant

differences were observed between regions. The disease presents a specific seasonality, with a peak in spring. There was a statistically significant trend in the notification rate over time for the whole period. Despite constant targeted efforts to control the disease in animals (slaughtering and vaccination programmes) by the relevant authorities, there has been very little change in the notification rate recorded each year since 2005. Public health measures should include awareness training on the disease for those involved in farming and the food industry as regards the importance of using protective measures and the risks from the consumption of unpasteurised products.

Niki collected the data, conducted interviews with the Department of Zoonosis, performed the statistical analysis, developed the protocol and submitted a manuscript to a peer-reviewed journal.

### ***Weekly reports on the epidemiological surveillance of West Nile Virus infection in humans in Greece, July-December 2020***

Supervisors: Kassiani Mellou and Danai Pervanidou

Twenty weekly reports were published on the NPHO site to increase awareness and provide recommendations for protection against West Nile Virus infection. These weekly reports included surveillance data for all WNV infections reported each week from the reference laboratories and the hospitals. The content of the weekly report included a descriptive analysis of surveillance data, a brief description of the actions conducted by the National Public Health Organization and recommendations to public health authorities and the public concerning measures to protect against West Nile Virus infection.

Niki was the lead investigator. Every week, she described and analysed national surveillance data. She actively investigated all reported cases to determine possible place of exposure and clinical manifestations and she contacted all the relevant authorities regarding the application of extra mosquito control activities in the area of possible exposure. She also contributed to the content and the writing-up of the reports.

### ***Training modules related to assignment/projects***

#### **EPIET/EUPHEM Introductory Course**

Upon completion of the introductory course, the fellow had received training in the basic concepts of the surveillance system, the different methods of analysing and presenting data, the methods for disseminating data and the importance of their presentation.

### ***Educational outcome***

The active investigation of West Nile Virus cases was a very valuable experience for the fellow as she participated in the daily surveillance of an endemic disease in Greece and was given the opportunity to understand the importance of real time analysis of data in conducting public health actions in the field.

### ***Activities regarding COVID-19***

Supervisors: Kassiani Mellou

At the beginning of the pandemic, the fellow was actively involved in COVID-19 cases and the investigations of close contacts. She also communicated on a daily basis with the public by responding to their questions and providing guidelines. She contributed to the development of short guides for the public which were posted online (<https://eody.gov.gr/loimoxi-apo-to-neo-koronoio-covid-19-odigies-profylaxis-gia-to-koino/>) and she also developed a protocol for the management of COVID-19 cases and close contacts in refugee camps across Greece at the request of the NPHO's Department of Mobile Population. During the weekends the fellow also worked to determine the total number of COVID-19 cases hospitalised in intensive care units (with or without mechanical ventilation) and the number of deaths.

### ***Educational outcome***

The COVID-19 pandemic provided the fellow with a great opportunity to get involved in various areas of surveillance for a disease which represented a serious threat to public health. It also allowed her to practice different skills such as communication, epidemiological investigation, the writing of literature reviews, networking with labs and teamwork.

## **2. Applied public health research**

### **Study protocol for the long-term outcomes of West Nile Virus infection in Greece, 2021**

Supervisors: Kassiani Mellou and Danai Pervanidou

West Nile Virus (WNV) is maintained in nature in an enzootic cycle which includes wild and domestic birds as reservoirs and ornithophilic mosquitoes. The main transmission route for humans is through the bite of an infected mosquito. Greece is an endemic country and since 2010, human WNV cases have ranged from 15 to 317 annually. Most human infections with WNV are asymptomatic (almost 80%), about 20% of cases present with flu-like symptoms and less than 1% of cases progress to severe disease, affecting the central nervous system. The main aim of the study was to assess the long-term outcomes (physical, cognitive and functional) of West Nile Virus lineage 2 during 2020 in Greece, in order to estimate the burden of disease and direct targeted prevention measures.



For the purpose of this study a retrospective cohort study will be conducted. The study population will be all WNV infection cases, with or without neuroinvasive disease, diagnosed and recorded in the national surveillance system in Greece in 2021. The assessment will be conducted via telephone interviews with the patients or family members using a structured questionnaire. Three district health outcome areas (physical, cognitive and functional health status) will be assessed retrospectively at one month prior to infection (baseline), at six months and at 12 months post infection. For each health outcome area and for each time period, the recovery ratio will be calculated by using the sum of the scores for baseline symptoms as the numerator and the sum of the scores for symptoms at six and 12 months post onset as the denominator. Recovery ratios  $> 0.9$  indicate full recovery after WNV infection with selected symptoms.

Niki was the lead investigator. She generated the research question and developed and finalised the study protocol and survey questionnaire.

## Analysis of long-term outcomes of West Nile Virus infection in Greece, 2012

### Supervisors: Kassiani Mellou and Danai Pervanidou

Since the first outbreak of WNV in Greece, the virus appears to have established itself in the country. Until 2012, the long-term health outcomes of WNV infection were assessed in various studies, but the results, associated with infection by lineage 1 strain, were mostly inconclusive and conflicting. Taking into account all of the above, in 2012 the EPIET fellow Danai Pervanidou developed a protocol and collected data from patients recorded across Greece in 2012 to assess the long-term health outcomes of WNV infection lineage 2, which is the lineage obtained from human cases and mosquitoes.

For the purposes of the study, three district health outcome areas (physical, cognitive and functional health status) was assessed retrospectively at one month prior to infection (baseline) at 1–3, 3–6, 6–9 months and at 9–12 months post infection. Physical and cognitive health status outcomes was assessed at each interview by asking about the frequency and intensity of the selected symptoms. Patients were asked to identify frequency of a symptom as never, sometimes or often. Intensity was identified as low intensity, medium intensity and high intensity. Severity was calculated by combining frequency and intensity. Each symptom received a score between 0–2. Functional ability was evaluated for different every day activities and scored as 0, 1, 2, 8 or 9. Recovery was calculated for each health outcome area and for each time period by extracting the score of the severity after the onset of illness from the score of the severity at the baseline. A difference of  $< 1$  indicated full recovery and obtained the value 1. Several risk factors for developing long-term health outcomes of WNV infection were also assessed including age, sex, underlying conditions and clinical syndrome.

Analysis of the results obtained from cases reported in 2012 showed that the most common symptoms reported in the vast majority of cases, with or without neuroinvasive disease, were mild symptoms that did not seem to last for more than three months for almost all cases. However, for cognitive symptoms, a few cases were reported even after 12 or 18 months. With regard to the functional ability of the cases to cope with every day activities, it seems that infection from WNV can affect the ability of a person to perform activities for a longer period than the recovery from cognitive and physical symptoms. With regard to long-term health outcomes, 20–28% of the cases seem to have had long-term health outcomes 6–9 months after infection for all health outcome areas. When assessing total recovery, long-term health outcomes were reported even 12 months post infection, which is extremely worrying as this has not previously been reported in the literature for lineage 2 WNV infections.

Niki was the lead investigator. She cleaned the database, performed descriptive, univariate and multivariate analysis and wrote the final analysis report.

## Training modules related to assignment/projects

### EPIET/EUPHEM Introductory Course

During the introductory course, the fellow participated in the research exercise, receiving training on the various steps involved in writing a study protocol. After this exercise, she was provided with the necessary skills/materials to write her own protocol.

### Outbreak Investigation Module

In the outbreak investigation module, the fellow received training on the use of Stata for performing univariate analysis and measuring associations between exposures and outcomes.

### Multivariable Analysis Module

Upon completion of the multivariable analysis module, the fellow had been trained in the use of various statistical models and she could perform multivariable analysis for the WNV data collected in 2012 to assess the association between various factors and the recovery ratios.

## Educational outcome:

Throughout the process of writing the protocol and analysing the data, the fellow gained experience in the various stages of a research project. These included identifying the research question; generating a hypothesis; writing the protocol to investigate the hypothesis; estimating population size for the study; developing the instruments to collect the data needed for the study and using statistical analysis to estimate the burden of disease and identify target groups.

### 3. Teaching and pedagogy

#### Practical training of students doing a Masters in public health on the basic principles of outbreak investigation

On 19 March 2021, the fellow presented the basic principles of outbreak investigation to Masters students at the University of West Attika in the context of the Environmental Microbiology Masters programme. For the purposes of the teaching activity, Niki developed the presentation material and a case study on the investigation of a mixed origin outbreak in Koutsopodi. Teaching was performed online for approximately two hours. Overall, the training was evaluated with very positive feedback from the participants.

#### *Training modules related to assignment/projects*

##### **EPIET/EUPHEM Introductory Course**

During the Introductory Course, the fellow participate in a lecture on the basic principles of adult education. Upon completion of the lecture, the fellow could better understand how to design and evaluate the teaching activity and the role of the facilitator, which proved extremely useful during her teaching project.

#### *Educational outcome:*

Overall, the fellow had a great opportunity to practice various communication skills, such as presentation of key messages, interaction with the audience, keeping the audience active and preparing educational material adjusted for a target audience. The most interesting part of the teaching process was the presentation of the case study, where there was plenty of room for discussion by exchanging knowledge and practices.

### 4. Communication

#### Publications related to the EPIET fellowship

1. **Chrysovaladou Kefaloudi**, Kassiani Mellou, Georgios Dougas, Rengina Vorou, Kostas Mitrou, Flora Kontopidou. Human brucellosis in Greece, 2005–2020. A persistent public health problem, submission of a manuscript to Vector-Borne and Zoonotic Diseases Journal, 3 June 2021.

#### Reports

Twenty weekly reports on the epidemiological surveillance of West Nile Virus infection in humans in Greece from 23 July to 3 December 2020, published on the website.

#### Conference presentations

1. **C.N Kefaloudi**, T.Sideroglou, A.Chrysostomou, D. Tsakikri, F.Gkolemi, T.Andrianopoulos, K.Mellou, The added value of epidemiology in the investigation of a waterborne outbreak of mixed origin in Peloponnese, Greece, 2020 [Poster presentation online], ESCAIDE Conference 24–27 November 2020, Stockholm Available at: <https://www.escaide.eu/sites/default/files/documents/Escaide2020-abstract-book.pdf>.
2. Sixth Conference 'Crisis Management in the Health Sector' Presentation 'West Nile Virus and Climate Change', Athens, 21–23 February 2020.

### 5. Other activities

- Participation in epidemiological surveillance of WNV infection for the Department of Vector-Borne Diseases.
- Contact tracing of WNV infection cases through telephone interviews in order to estimate area of infection.
- Communication with local authorities and coordination of activities for every WNV case in order to implement vector control programmes.
- Communication with local health units to enhance laboratory diagnosis.
- Provision of guidelines for the management of scabies cases in refugee camps and first reception centres.
- Provision of guidelines and coordination of the dissemination of insect repellents in refugee camps and first reception centres in collaboration with local NPHO field coordinators to protect against vector-borne diseases.

## 6. EPIET/EUPHEM modules attended

1. EPIET & EUPHEM Introductory course 2019 (23/09/2019-11/10/2019), Spetses, Greece
2. Outbreak Investigation Module, (9/12/2019-13/12/2019), Nicosia, Cyprus
3. Multivariable Analysis Module (20/04/2020-24/04/2020), online
4. Project Review Module (24/08/2020-28/08/2020), online
5. Time Series Analysis Module (25/01/2021-29/01/2021), online
6. Rapid Assessment and Survey Methods Module (27/04/2021 and 5/05/2021-06/05/2021), online
7. Vaccinology Module (14/06/2021 – 18/06/2021), online.

## 7. Other training

European Program 'EU Healthy Gateways' Training Programme 'Public health measures at gateways and public transportation for COVID-19', (27/02/2020), Athens, Greece.

# 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, but also partly through participation in training modules where they can apply epidemiological methods to guide public health interventions for communicable disease prevention and control. This report summarises all activities and projects conducted by Niki during her two-year EPIET fellowship (cohort 2019) as a Member-State-track fellow at the Hellenic National Public Organization in Athens, Greece.

Niki has had a successful fellowship and achieved all her learning objectives. In particular, she has further developed her skills in outbreak investigation and analysis of surveillance data. She has also contributed a great deal to the COVID-19 response in Greece. Furthermore, she improved her skills in teaching and developed a case study based on a real outbreak investigation she was involved in. Finally, her research projects have allowed her to improve her skills in writing study protocols and data analysis, and her work will help provide a better understanding of the long-term outcomes of WNV lineage 2 infections in Greece to estimate disease burden and direct targeted prevention measures.

It has been a pleasure working as Niki's frontline coordinator. I have found her to be highly motivated and very hard-working. The fellowship has allowed Niki to further develop her competencies and given her the opportunity to implement many of the skills she has acquired from the programme in her daily work. I wish her all the very best for her future career.

## Supervisor's conclusions

Niki worked a great deal on vector-borne diseases during her fellowship. She participated in the investigation of a possible locally acquired case of malaria in Greece. Such investigations are important for the country as their results may lead to changes in the country's malaria status.

In addition, Niki took over the analysis of previously collected data on the long-term outcomes of West Nile Virus infection in Greece. She wrote a protocol on this subject so that WNV cases could be contacted and followed up more effectively in the future, based on standard methods. This was a significant and helpful contribution.

The fellow also made an important contribution in taking over the analysis of the historical data on brucellosis, a disease which is endemic in Greece. Based on the results of the analysis, specific changes were proposed, and it was stressed that brucellosis is a neglected disease in the country that needs to be prioritised. Data were cleaned and the analysis plan is now available and can be updated annually to evaluate the effectiveness of the public health measures taken against the disease.

Finally, Niki's work on a waterborne outbreak of mixed pathogens in the Peloponnese represented the first waterborne outbreak investigation in Greece performed with the assistance of pharmacists from the local community. Niki also prepared a protocol which was appropriately adapted for the purposes of the specific investigation during the COVID-19 pandemic since it was impossible for the public health authorities to conduct an onsite outbreak investigation. Collaboration with local pharmacists was successful and the information that was collected verified the outbreak. The performance of the case-control study would not have been feasible without the active participation of the local pharmacists. Most importantly, Niki organised the investigation while ensuring that personal data of the residents would not be compromised and that contacts were made in such a way as to prevent transmission of COVID-19.

## Personal conclusions of fellow

During my EPIET fellowship, I had the opportunity to gain valuable experience, not only as a public health professional but also as a person. First of all, I strongly believe that the modules I attended and the projects I was involved in contributed tremendously to my gaining competence in various areas of epidemiology where I previously had no training. Since completing the projects, I feel more confident in performing outbreak investigations, public health research, analysis of surveillance data, development of teaching material and the organisation of teaching activities. I really enjoyed the learning-by-doing approach as I think this is the best way to integrate learning into my routine work.

Unfortunately, due to the COVID-19 pandemic I could not visit other public health institutes and benefit from meeting other experts in the epidemiological field in order to expand my network of communication. However, despite all the obstacles I was really satisfied with the online modules, more than I expected, as I still had the opportunity to interact with my co-fellows and various facilitators and exchange experiences on the COVID-19 pandemic and our projects. Overall, I feel very lucky that I was able to join this wonderful team of field epidemiologists and I am sure that I have learned essential skills for my professional development.



## Acknowledgements of fellow

First of all, I would like to express my deepest gratitude to my EPIET supervisor, Kassiani Mellou, not only for her professional support but also for being a good friend and colleague. She was always there for me to answer my questions, to help and guide me through my projects and to support me through difficult situations, tight deadlines and work overload due to the COVID-19 pandemic.

I would also really like to thank all my colleagues at the Directorate of Epidemiological Surveillance and Intervention for Infectious Diseases and especially my project supervisors Georgios Dougas, Theologia Sideroglou, Anthi Chrysostomou and Danai Pervanidou for their patience and for providing me with valuable insight into their different areas of expertise.

I am particularly grateful to all my frontline coordinators Alicia Barassa, Dr. Frantiska Hrubá, Mari Morgan and Alastair Donachie for their valuable and timely backup, and for being an inspiration to me in encouraging me to always ask questions and look for answers.

Finally, I would like to take this opportunity to thank all of my co-fellows from Cohort 2019 for all the fun and the time we spent together and I hope to meet all of them again sometime in the future.