

MediPIET Summary report of work activities

Albiona Rashiti - Bytyçi

Kosovo, Cohort 4 (2021)

Background

About MediPIET

The Mediterranean and Black Sea Programme for Intervention Epidemiology Training (MediPIET) aims to enhance health security in the Mediterranean and the Black Sea region by supporting capacity building for prevention and control of natural or man-made threats to health posed by communicable diseases. It is a competency-based in-service two-year fellowship during which selected fellows conduct projects and field investigations at a MediPIET training site in their home country and attend MediPIET modules.

Since mid-2021, MediPIET has been implemented by ECDC as a part of the [EU Initiative on Health Security](https://www.ecdc.europa.eu/en/training-and-tools/training-programmes/fellowships/medi Piet). More information about the programme is available at: <https://www.ecdc.europa.eu/en/training-and-tools/training-programmes/fellowships/medi Piet>.

Pre-fellowship short biography

Albiona Rashiti - Bytyçi is a medical doctor specialising in epidemiology. Albiona has a Masters in Health Management awarded by World University Service (WUS) Austria and she obtained a PhD in Public Health at the University of Prishtina. She is employed at the National Institute of Public Health in Kosovo and is currently focussing on epidemiological surveillance of food and waterborne diseases, outbreak investigations, and emerging vector-borne diseases. Albiona plays an active role as a member of the National Committee for the Prevention and Control of Communicable Diseases.

Fellowship

On September 2021, Albiona Rashiti - Bytyçi began her MediPIET fellowship at the National Institute of Public Health of Kosovo, Epidemiology Department, Prishtina, Kosovo. This report summarises the work performed during the fellowship.

National supervisor(s): Ariana Kalaveshi, Pranvera Kaçaniku – Gunga.

Scientific coordinator: Emily White Johansson (since September 2022), Kostas Danis (March–September 2022), Liese Van Gompel (September 2021-March 2022).

Fellowship projects

1. Surveillance

Evaluation of the Influenza-Like Illness (ILI) Sentinel Surveillance System in Kosovo, 2021–2022

Background: influenza has a huge impact on morbidity and mortality worldwide. Well-functioning and stable surveillance systems are crucial for establishing national capacity for the timely detection of emerging respiratory diseases; participation in global activities related to the monitoring/tracking of viruses; preparation for pandemics and outbreaks and the monitoring of disease frequency and severity of respiratory conditions which have an important impact on public health.

Methods: for the evaluation of the ILI sentinel surveillance system, we analysed attributes: data completeness, timeliness, representativeness, acceptability and stability. Questionnaires were distributed to five sentinel centres and to all relevant laboratory staff at the National Influenza Centre engaged in the ILI sentinel surveillance system in May 2022.

Results: from the beginning of the season, 1 October 2021 (40th week) to 22 May 2022 (20th week), a total of 74 839 cases of ILI were reported to the National Institute of Public Health. During the evaluation period (2021–2022 season), the completeness average of reporting forms was 90.6% across all variables. Due to delays in the shipment of samples from some regions, the percentage of samples received within 48 hours of collection was 85%. The five sentinel centres encompass roughly 48% of Kosovo's population. According to 87.5% (n=175) of the survey respondents, the sentinel system was reported to be simple and easy to use. A total of 75% of all responders were satisfied with the follow-up and the willingness of people and organisations to participate in the surveillance system.

Conclusions and recommendation: the Kosovo ILI sentinel surveillance system was beneficial in monitoring respiratory virus infections in humans and providing a platform for recognising outbreaks of such diseases, based on the results of the evaluation. Good data quality and completeness were primary assets of the ILI sentinel surveillance system in Kosovo and these were critical, given the paucity of data digitalisation.

Role and outputs: Principal investigator

The fellow was actively engaged in several critical aspects of the project, including protocol development, questionnaire design, data entry, data analysis. The fellow authored the final report, summarising the findings, conclusions, and recommendations based on the analysis. She actively communicated and shared the research results with stakeholders, fostering collaboration and ensuring the findings were put to practical use.

Supervisor(s): Ariana Kalaveshi, Pranvera Kaçaniku – Gunga

Status: Completed.

2. Outbreaks

An outbreak of *Salmonella Enteritidis* related to a funeral reception, Prishtina, October 2021

Background: On 3 October 2021, the epidemiological surveillance unit at the National Institute of Public Health received an alert of a food poisoning outbreak following a funeral ceremony. We investigated the outbreak to identify the potential vehicle for transmission.

Methods: We conducted a retrospective cohort study among those who had attended the funeral reception and met the case definition. A case was defined as a person who attended the funeral on 2 October 2021, consumed food during a lunch that was served after the funeral, and developed gastrointestinal symptoms within the period October 2–7. We performed a case-finding field investigation. The family members were asked to provide the total number of people that attended the funeral ceremony. In addition, the Family Medicine Centre in the village was requested to provide a list of people who were admitted with gastrointestinal symptoms during the period October 2–7. Those interviewed were asked to provide a stool sample. Samples from food and restaurant environments were also taken for microbiological analysis.

Results: Of the 69 participants at the funeral ceremony, 46 (67%) were eligible (consumed lunch). Of the 46 cases, forty (87%) individuals were interviewed. Fifteen (63%) of them were female, and 32 (90%) were aged 15–64 years. The main symptoms of cases were fever (63%), stomach ache (53%), diarrhoea (50%), vomiting (33%), and weakness (15%). The overall attack rate among guests was 48%. Fourteen (82%) samples were culture positive for

Salmonella enteritidis. Food samples from the restaurant (NN) were negative for *Salmonella enteritidis*. Results of a bacteriological analysis of swabs taken from the restaurant work premises detected *Escheria coli*.

Conclusion: The causative agent of the outbreak, *Salmonella enteritidis*, was determined using human samples, but not through the food samples. The epidemiological findings pointed to the salad as a possible source of the *S. Enteritidis* outbreak. Several microorganisms may have been implicated due to poor food handling, storage and serving.

Role and outputs: Principal investigator

The fellow made significant contributions to the outbreak investigation, playing a pivotal role in several key aspects of the process, including study design and protocol development; data collection (actively participated in data collection, which involved gathering information from affected individuals, healthcare facilities and relevant sources); data entry and analysis; writing the final outbreak investigation report with summarised findings, conclusions, and recommendations, and preparing for publication.

Supervisor(s): Ariana Kalaveshi, Pranvera Kaçaniku – Gunga.

Status: Completed.

3. Research

Estimation of COVID-19 vaccine effectiveness against infections and severe outcomes using routine surveillance data in Kosovo, July–September 2021

Background: COVID-19 vaccines have proven effective against severe outcomes in many settings, yet vaccine effectiveness (VE) estimates are still lacking for Kosovo. We aimed to estimate VE against COVID-19 infections, hospitalisations and deaths for one and two vaccine doses during the fourth wave of the pandemic in July–September 2021, the period when vaccination initially became widely available.

Methods: We analysed routine surveillance data to define cases and vaccination status as partially (one dose) or completely (two doses) vaccinated. We used the screening method to calculate the proportion of cases vaccinated with outcomes (PCV). The proportion of the population vaccinated (PPV) was based on numbers vaccinated and the Kosovo population estimate on 30 September 2021.

Results: Between July–September 2021, 51 804 COVID-19 cases were reported in Kosovo with 9.3% of cases partially and 3.4% completely vaccinated. Estimated vaccine effectiveness for one dose was 93.1% (95% CI: 92.9–93.2%) for infections, 90.3% (95% CI: 88.8–91.7%) for hospitalisations, and 90.3% (95% CI: 88.4–92.1%) for deaths. Estimated vaccine effectiveness for two doses was 97.8% (95%CI:97.6–97.9%) for infections, 94.5% (95% CI: 93.3–95.6%) for hospitalisations, and 94.2% (95% CI: 93.7–96.5%) for deaths.

Conclusions: This study provides real-world evidence for COVID-19 vaccine effectiveness in Kosovo using routine administrative data sources and the screening method. COVID-19 vaccine effectiveness against infections and severe outcomes in Kosovo was higher with two vaccine doses than one dose, which is in accordance with findings from other study designs and settings. Using the screening method in our study reflects an important initial methodology for estimating vaccine effectiveness with routine surveillance that may be particularly important for low- and middle-income settings with less robust surveillance systems, or fewer opportunities to conduct more robust vaccine effectiveness study designs.

Role and outputs: Principal investigator.

The fellow wrote the study protocol, performed the data cleaning, analysed the research data, wrote the final report, shared the results with stakeholders, submitted an abstract to ESCAIDE 2023 and submitted a manuscript to a peer-reviewed journal.

Supervisor(s): Ariana Kalaveshi, Pranvera Kaçaniku – Gunga.

Status: Completed.

4. Scientific communication

Conference presentations

- Estimation of COVID-19 vaccine effectiveness against infections and severe outcomes using routine surveillance data in Kosovo, July–September 2021; MediPIET Scientific Event – 23 November 2023, Barcelona, Spain.
- Comparison of COVID-19 pandemic waves according to age, gender, patient status (hospitalised/outpatient, deaths), vaccination status; Regional Conference on Health Promotion and Education, 29–30 September 2022, Prishtina, Kosovo.
- COVID-19 pandemic in Kosovo - Analysis of the Epidemiological Situation; Medical Congress - COVID-19 Pandemics, Challenges and Experiences, 2–4 June 2022, Prishtina, Kosovo.

Publications and outputs

1. Rashiti-Bytyci A, Ramadani N, Kalaveshi A, Muçaj S, Gashi L, Rashiti P. Hepatitis C in several risk groups: Literature review. South Eastern European Journal of Public Health. 24 January 2023.
2. Rashiti-Bytyci A, Ramadani N, Rashiti P. Hepatitis C in several risk groups of Kosovo. The Journal of Infection in Developing Countries. 2022 Jan 31;16(01):173-8.
3. Bytyci AR, Rashiti P, Kadiri F, Svarça L, Xani A. Knowledge of Hepatitis C Among General Population in Kosovo. Journal of Medical Science. 2022;21(4):751.
4. Rashiti P, Rashiti-Bytyci A, Haradinaj K, Dermaku E, Berisha V, Bellanica V, Svarça L, Haklaj V, Lahu V, Duraku E, Shabani A. Using the HEART score in patients with chest pain in the emergency department of Kosovo as an important triage criterion for treatment and hospitalization. Annals of Medicine and Surgery. 2023 Jul 1;85(7):3318-22.
5. Muçaj S, Ramadani N, Kabashi-Muçaj S, Jerliu N, Rashiti-Bytyci A, Hoxha S. Epidemiological profile and incidence of brain tumors in Kosovo. South Eastern European Journal of Public Health (SEEJPH). 6 July 2022.

5. Teaching activities

Lecture on vaccine prophylaxis

This assignment included the following activities: i) Lecture on vaccine prophylaxis (90 min); ii) case study and exercise on the effect of primary and booster doses; iii) participating in the facilitation of case studies and the exercise. The target audience were students in the fifth year at the Faculty of Medicine, University of Prishtina. Learning materials included: presentation slides developed using the latest vaccination updates. Learning objectives for this training course were for students to be able to describe the importance of vaccine prophylaxis, and the mandatory list of vaccinations in Kosovo. Reflection: this helped to improve my teaching skills in terms of communication with the students through discussion, role playing and the exchange of ideas. Since this teaching took place during the COVID-19 pandemic, the lecture on vaccination and the role of vaccination increased my knowledge, and I then tried to present all this new information to my students. The activity took place on 22 November 2021 in Prishtina.

Outbreak investigation during the Basic Module on Field Epidemiology

The report consists of the following sections: i) Instructional Design: the goal of the training was to impart knowledge, develop skills and facilitate learning in public health participants, with the aim of enhancing their understanding, capabilities and competence in outbreak investigation. Outbreak investigation refers to the systematic process of identifying and understanding the source, causes and transmission of an outbreak of infectious diseases or other health-related event. Outbreak investigations are a critical component of public health response and are conducted by epidemiologists, healthcare professionals, and public health agencies to mitigate the impact of outbreaks and prevent their recurrence. ii) Target audience: epidemiologists, public health specialists and technicians from regional public health institutions. iii) Learning objectives for this training event: having attended this lecture, participants should be able to describe the importance of outbreak investigation; determine the origin or source of an outbreak; identify the causative agents or factors; assess the scope and impact of the outbreak; implement appropriate control measures and make recommendations to prevent future outbreaks. Learning materials used: presentation slides and a practical exercise that we developed based on MediPIET modules. Evaluation: at the end of the activity a short quiz was organised to assess learning objectives. All participants were able to identify the main objectives of the lecture. The practical exercise during the training was very useful. Reflection: participant collaboration during the teaching process, the work in groups and the organisation of the tasks in a group format encouraged both the participants and the organising team and was very useful for obtaining new knowledge and exchanging information within the group.

This activity took place on 20 March 2023 at the National Institute of Public Health. Duration: 1.45 hours during the Basic Module on Field Epidemiology.

Healthcare-associated infections

The report consist of the following sections: i) Instructional Design: healthcare-associated infections are defined as infections acquired by patients during the provision of care in healthcare facilities. The goal of the training was to raise awareness of healthcare-associated infections among healthcare professionals. In addition, the training aimed to inform them of the results of a previous point prevalence survey (PPS) on healthcare-associated infections that was organised in November 2022, based on the ECDC protocol. ii) Target audience: healthcare professionals at regional hospitals in Kosovo. iii) Learning objectives for this training event: having attended this lecture, participants should be able to define healthcare associated infections; identify the causative agents or factors; assess the scope and impact of the healthcare-associated infection; implement appropriate control measures and make recommendations to prevent healthcare-associated infections. The teaching activity, lecture and output was linked with the learning objectives. Evaluation: at the end of the activity a training questionnaire was distributed to assess learning objectives. Most of the participants were able to identify the main objectives of the lecture. The basic lecture was the main focus of the teaching/training. Reflection: this activity enabled the fellow to improve her teaching skills in terms of communication with the participants during the lecture and exchange of ideas. Participants collaborated during the teaching process, encouraging both the participants and the organising team to obtain new knowledge and to continue to organise informative lectures. This activity took place on 19 May 2023 at the National Institute of Public Health. Duration: 45 min.

6. Other activities

Membership

- Member of task team, Emergency Operating Room for COVID-19, National Institute of Public Health, Kosovo
- Member of National Committee of Prevention and Control of Communicable Diseases
- Member of Board for Specialized Education
- Member of the Licensing Commission
- Member of working group drafting new law on the prevention and control of communicable diseases <https://gzk.rks-gov.net/ActDetail.aspx?ActID=79083>
- Member of ELDSNet.

Reports

- Drafting the weekly report analysing the epidemiological situation
- Drafting the final report on food and waterborne outbreaks occurring within the country
- Drafting of monthly final report on emerging vector-borne diseases
- Editor of weekly EpiTel meeting report.

Training

- Participant of ECDC/WHO Europe regional webinars on monkeypox (2022–2023)
- Participant at Train-the-trainer workshop for Western Balkans on raising awareness for prevention of Legionnaires' disease, Podgorica, September 2022
- Participant in PPS healthcare-associated infections survey in regional hospitals, November 2022
- Participant in Basic Module on Field Epidemiology, March 2023
- Participant in 'One Health approach to emerging and re-emerging pathogens in laboratory diagnostics in Balkans' – Tirana, WHO, March 2023
- Participant on BSAFE - UNDSS Course
- Participant in [VEBIS-LOT1-SC2] - R online training for Western Balkans
- Participant on OpenWHO course, healthcare associated infection surveillance
- Participant at RefLabCap Workshops, July 2023
- Participant in FWD AMR-RefLabCap, multidisciplinary training workshops, September 2023.

7. MediPIET modules attended

1. Introductory Course – Part 1, 20 September – 8 October 2021, online.
2. Inject day Phylogeny, 20 October 2021, online.
3. Inject days Operational Research, 26–27 October 2021, online.
4. Inject days Data Collection, 10–11 November 2021, online.
5. Outbreak Investigation, 6–10 December 2021, online.
6. Multivariable Analysis, 14–18 March 2021, online.
7. Multivariable Analysis inject day, 30 March 2022, online.
8. PRM I & Introductory Course -Part 2, 20–29 April 2022, Spetses, Greece, hybrid.
9. Project Review Module II, 29 August–2 September 2022, Lisbon, Portugal, hybrid.
10. Time Series Analysis, 7–11 November 2022, Bilthoven (Utrecht), Netherlands, hybrid.

11. Chemical, Biological, Radiological and Nuclear Awareness and Mitigation Module, 13–17 March 2023, Petrovac, Montenegro, face-to-face.
12. Vaccinology Inject Day, 29 March 2023, online.
13. One Health & VBD, 2–4 and 15–17 May 2023, online.
14. Rapid Assessment and Survey Methods + Mass Gatherings, 19–23 June 2023, Stockholm, Sweden, face-to-face.
15. Project Review 2023, 28 August–1 September 2023, Lisbon, Portugal, face-to-face.

8. Supervisor conclusion

Albiona Rashiti Bytyçi, a fellow from the fourth cohort of MediPIET, is an epidemiologist at the Institute of Public Health of Kosovo, with a PhD in Public Health. Albiona is responsible for food and waterborne diseases, zoonotic and emerging vector-borne diseases and is very much involved in the epi investigations. As a supervisor, working with Albiona was a pleasure and I was looking forward to it. During the two years of fellowship, it was very satisfying to work with her due to her commitment and active participation in all the modules. During MediPIET, the fellow showed a strong determination to work and great interest in the assignments. This period helped Albiona to refresh her knowledge of the epidemiology of zoonotic and vector-borne diseases (VBD) and all dimensions of the 'One-Health' approach. She became familiar with some of the methods complementing epi investigations and worked hard on the R programme. While collaborating with myself and her scientific coordinator she demonstrated an unmatched will to learn. Her effective communication, collaboration, and attitude have had a positive impact on her improvement and overall fellowship success. The benefits and improvements are obvious and the most important is her desire to share experiences with other colleagues in the IPH and the network of MediPIET fellows. I am confident that during this programme Albiona has improved the qualities and capabilities necessary to excel in her future endeavours.

9. Scientific coordinator conclusion

Albiona started her fellowship with strong clinical and epidemiological skills. During her two-year fellowship, she produced high-quality outputs on diverse topics that expanded her skills into new areas and methodologies. She completed all of her graduation requirements while at the same time carrying out her routine work.

For the MediPIET fellowship, Albiona was involved in two outbreak investigations, one surveillance project and one research study, resulting in one manuscript as first author and one conference presentation. Through the fellowship, Albiona expanded her knowledge into new areas of competency, most notably R skills, outbreak investigations, data analysis, and evaluations of surveillance systems. Albiona has been highly committed to the fellowship and showed perseverance through a two-year period marked by COVID-19 restrictions, remote working, limited travel, and a need to balance routine work duties with fellowship projects. Albiona is also highly organised, competent, able to work independently and within teams, and well-respected by peers and supervisors. She received great supervision at the National Public Health Institute, Kosovo that further supported her fellowship success. I believe that Albiona's strong competencies, combined with her personal characteristics, will serve her well in future work endeavours. I wish her only the best in what will undoubtedly be a bright professional future.

10. Personal conclusions of fellow

Participating in the MediPIET fellowship has been a transformative and enlightening experience. Through this fellowship, I have had the opportunity to delve deep into the multifaceted world of public health, gaining invaluable knowledge and skills in the process. It has not only enriched my understanding of the field, but also broadened my horizons, allowing me to appreciate the global implications of public health work.

Over the course of the fellowship, I have collaborated with inspiring individuals who are dedicated to making a positive impact on public health and epidemiology. This network of colleagues and mentors has been instrumental in my personal and professional growth. The exposure to real-world public health challenges, from epidemiological investigations to policy development, has equipped me with the tools needed to effect meaningful change in the health of communities and populations.

In conclusion, MediPIET fellowship has been an knowledgeable journey that has deepened my passion for public health and equipped me with the knowledge and skills necessary to address the pressing health issues of our time. It has been a truly enriching and rewarding experience that I will carry with me as I continue to work towards bettering public health outcomes.

11. Acknowledgements

First of all, I am immensely grateful to my supervisors Ariana Kalaveshi and Pranvera Kaçaniku – Gunga for nominating me to apply for the MediPIET fellowship.

I would like to express my sincere gratitude to my first frontline coordinator Liese Van Gompel, for her exemplary cooperation and supervision, characterised by kindness and gentleness. A special thanks to second frontline coordinator Kostas Danis for encouraging me and other fellows, for being so flexible and for giving me the opportunity to collaborate on so many valuable projects.

I am especially grateful to my third frontline coordinator Emily White Johansson, always present with her constant and constructive supervision, continuous support, and excellent experience in public health.

A special thanks also to Anja Schoeps and Achim Dorre for their crucial role as manuscript co-authors, who showed great willingness in contributing to the manuscript with their excellent experience.

A special thanks to the ECDC and MediPIET team for their deep dedication to the programme and also to the fellows.

Last but not least, my biggest thanks go to my family, as always.