

MediPIET Summary report of work activities

Anisa Xhaferi

Albania, Cohort 5 (2022)

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 is implemented by ECDC as a part of the EU Initiative on Health Security. You can find more information about the programme [here](#).

Pre-fellowship short biography

Anisa Xhaferi is a Public Health Specialist at the Institute of Public Health in Tirana, Albania, where she has been contributing to research, surveillance, and public health interventions since 2012. Her primary responsibilities include managing non-communicable disease (NCD) data, with a particular focus on the diabetes registry database. For several years, she has also been involved in various roles within the Communicable Disease Department, primarily supporting the vaccination programme. Additionally, Anisa serves as an external lecturer at a private university, teaching Health Data Management.

Fellowship

On September 2022, Anisa Xhaferi started her MediPIET fellowship at the National Institute of Public Health, Department of Public Health Performance and Chronic Diseases, Chronic Diseases Sector in Tirana, Albania. This report summarises the work performed during the fellowship.

National supervisor(s):

Alban Ylli, Professor, Head of Department of Public Health Performance and Chronic Diseases, Institute of Public Health
Dorina Toçi, Associate Professor, Department of Public Health Performance and Chronic Diseases, Chronic Diseases Sector

Scientific coordinator:

Nana Mebonia, ECDC, Stockholm, Sweden
Natalie Girin, ECDC, Stockholm, Sweden

Fellowship projects

1. Surveillance

Surveillance evaluation system of brucellosis cases in Albania, 2019–2023

Introduction: Brucellosis is a bacterial infection primarily affecting livestock and occasionally transmitted to humans, usually through the consumption of unpasteurised dairy or contact with infected animals. Preventing brucellosis requires a multi-pronged approach, including animal vaccination, food safety measures, and public education. Surveillance systems in Albania have shown a decline in human cases, especially following national mass vaccination campaigns. However, brucellosis remains a global health concern, particularly in endemic regions. This report highlights Albania's brucellosis surveillance evaluation.

Method: Brucellosis surveillance in Albania relies on two data sources: the Aggregated data (14/Sh and 14-2 (z)/Sh forms) and the Infectious Disease Information System (SISI) in electronic format. For assessing the surveillance system, we used data from the aggregated forms for the entire period (2019–2023). For the performance of the surveillance system, we evaluated simplicity, flexibility, data quality, representativeness, timeliness and usefulness.

Results: The annual incidence of human brucellosis cases is 5.19 cases per 100 000 population. Older males and farmers were more affected. The system is user-friendly. The brucellosis surveillance system offers enhanced flexibility for database updates. The brucellosis surveillance system is generally well-accepted among healthcare providers. Timeliness of brucellosis notifications revealed that 73% of cases did meet the national guideline for notification. Of total cases, 7% were founded from hospital reporting.

Conclusion and recommendations: Albania's brucellosis surveillance system provides critical data on disease incidence and demographics, highlighting that males, older adults, and farmers in cross-border areas are most affected. The brucellosis surveillance system in Albania is simple, flexible and useful, but the data quality is poor and the timeliness of a case notification does not always comply with the national guidelines.

To improve the system, enhancing data capture protocols and validation checks is essential to address missing information and reduce bias. Strengthening collaboration with Local Health Care Units (LHCU) will boost reporting to eliminate underreporting and to enhance timely reporting.

Role and outputs: Principal Investigator. The fellow wrote the protocol, analysed the data, and wrote the final report regarding Surveillance Evaluation.

Supervisor(s): Alban Ylli, Dorina Toçi

Support: Luljeta Alla

2. Outbreaks

Measles outbreak in Albania, January 2024

Background: Measles is a highly contagious disease transmitted through respiratory droplets. Vaccination is the most effective prevention method. In Albania, measles vaccination coverage in 2023 was 83.3% for one-year-olds and 93% for 5-year-olds. In January 2024, after six years without any cases, a measles outbreak occurred. The investigation aimed to identify the source of the outbreak, assess transmission, evaluate control measures, and implement strategies to prevent further spread.

Method: The standard case definition for measles/rubella, as per the CDC guidelines, is utilised in Albania. A structured questionnaire collected data on variables, healthcare access, and other measles risk factors through interviews with caregivers. Hospitalised cases were interviewed by the investigation team, and vaccination status was verified using vaccination cards. Descriptive analysis estimated incidence rates, while logistic regression was used to calculate incidence rate ratios (IRR) with 95% confidence intervals (CIs) and p-values to assess statistical significance.

European Centre for Disease Prevention and Control (ECDC)

Gustav den III:s Boulevard 40, 169 73 Solna, Sweden

Phone: +46 (0)8 58 60 10 00 - Fax: +46 (0)8 58 60 10 01

www.ecdc.europa.eu

Results: Between 8–23 January 2023, a total of 14 measles cases were reported in Albania. The national incidence rate of measles during this period was 0.58 cases per 100 000 population. Female's sex was positively correlated with getting the infection ($p < 0.05$; 95% CI: 1.02–1.56). Regarding vaccination status, 10 of the 14 cases (71.4%) were unvaccinated. Two individuals (14.3%) had received only one of the two recommended doses of measles vaccine, while only two cases (14.3%) were fully vaccinated. Hospitalisation was required for all cases.

Discussion and recommendations: The 2024 measles outbreak in Albania began from Tirana in a vaccination-resistant community, spreading to relatives and contacts in Durres and Kruja. Hospitalised cases underscored the outbreak's severity, stressing the need to address vaccination hesitancy and improve public health. Key recommendations include targeted vaccination campaigns for high-risk groups, culturally appropriate education on vaccine hesitancy, and media engagement to improve measles prevention and control.

Role and outputs: The fellow was involved in the outbreak response as a co-investigator, collaborating closely with the outbreak team. Her main responsibilities included conducting contact investigations, identifying case contacts and verifying their vaccination status through self-reporting, as well as verifying this information with the system of vaccination programme.

Supervisor(s): Alban Ylli, Dorina Toçi

Support: Silva Bino

3. Research

Sociodemographic and Occupational Factors associated with COVID-19 and influenza vaccine uptake among healthcare workers in Albania, 2022–2023: A Longitudinal Cohort Study

Background: Healthcare workers are a priority group for COVID-19 and influenza vaccination. We evaluated sociodemographic and occupational factors, attitudes, and knowledge associated with the uptake of primary and booster doses of COVID-19 and seasonal influenza vaccines among healthcare workers.

Methods: Between February 2022 and February 2023, we conducted an analysis among healthcare workers in three Albanian hospitals who were enrolled in a multi-year cohort study. To estimate independent factors associated with receipt of primary series and booster doses of COVID-19 and seasonal influenza vaccines, we calculated odds ratios (ORs), adjusted ORs (aORs) and 95% confidence intervals (CIs) using logistic regression.

Results: We included 1 456 healthcare workers. Their median age was 44 years (IQR: 33–53) and 77.3% were female. Overall, 20.7% were physicians, 47.0% were nurses or midwives, and 21.5% were support staff. In all, 93.6% received a COVID-19 primary vaccine series, 20% a COVID-19 booster, and 23.7% received an influenza vaccine in the 2022–2023 season. In the multivariable analysis, male healthcare workers had higher odds of receiving COVID-19 boosters (aOR: 2.08; 95% CI: 1.55–2.80) and lower odds of receiving influenza vaccination (aOR: 0.69; 95% CI: 0.51–0.95). Belief in the safety and efficacy of both vaccines was positively associated with vaccine uptake.

Conclusion: Among healthcare workers, primary series COVID-19 vaccine coverage was high, but COVID-19 booster doses and seasonal influenza vaccines were low. Findings on specific age and gender differences among healthcare worker groups with low vaccine uptake, as well as their knowledge and attitudes towards vaccines, could guide strategies for vaccine promotion.

Role and outputs: The fellow participated in the preparation of the project proposal and the analysis of the collected study data. Additionally, she served as the database manager throughout the study period, taking responsibility for ensuring data quality, performing data cleaning and conducting data analysis; presented two posters at conferences; and participated in the writing of the manuscript.

Supervisor(s): Alban Ylli, Dorina Toçi

Support: Silva Bino

Vaccine Effectiveness Study among Healthcare Workers Albania, prospective cohort study, Albania, 2023–2024

Role and outputs: The fellow's primary role in this research project involved preparing the project proposal. Following this, she collaborated with the study team to refine the study protocol and develop the questionnaire required for data collection. The protocol document includes all relevant information. The data collected from this study will be analysed and published by a MediPIET fellow from the next cohort.

Supervisor(s): Alban Ylli, Dorina Toçi

Support: Silva Bino

4. Scientific communication

Conference presentations

- Participated as a poster presenter titled 'Predictors of Influenza vaccination uptake among healthcare workers in Albania, 2023,' at the European Scientific Working Group on Influenza (ESWI) Conference 2023, held in Valencia, Spain, from 17–20 September.
- Participated as a poster presenter titled 'Predictors of COVID-19 vaccination uptake among healthcare workers in Albania, 2023,' at ESCAIDE 2023, held in Barcelona, Spain, from 22–24 November.

Publications and outputs

As a result of the research project described previously, a comprehensive manuscript was developed, titled 'Sociodemographic and Occupational Factors Associated with COVID-19 and Influenza Vaccine Uptake among Healthcare Workers in Albania, 2022–2023: A Longitudinal Cohort Study'. The manuscript has been prepared and is now in the process of submission to Clinical Infectious Diseases scientific journal for publication.

5. Teaching activities

On 14 November 2023, a training session was conducted at the Institute of Public Health in Tirana, Albania, targeting 36 regional public health specialists responsible for the National Diabetes Registry and six specialists from the Institute's Non-Communicable Disease Sector. This training aimed to enhance the quality of data reporting, address challenges, and strengthen participants' understanding of the registry's operations.

The session covered the data collection and reporting processes, emphasising accuracy, security, and the importance of ongoing maintenance. It incorporated interactive methods, including group simulations, pre- and post-testing, and discussions on diabetes prevalence and promotional strategies. Participants praised the integration of theoretical knowledge with practical exercises and supplementary resources, fostering a collaborative learning environment.

Evaluation results showed high participant satisfaction, with 98% rating the training as highly effective and 95% reporting their expectations were met. Recommendations for improvement included addressing logistical aspects and travel expense coverage. This training highlighted the importance of continual professional development in ensuring the reliability of the National Diabetes Registry.

6. MediPIET modules attended

1. Attended in person, ECDC Fellowship Introductory Course 2022, 26 Sep to 7 Oct 2022, in Spetses, Greece
2. Attended online, Introductory Course 2022 – Inject Day Operational Research, 8–10 November 2022
3. Attended online Introduction to R/Stata - 28 November to 1 December
4. Attended in person, ESCAIDE 2023 as a participant, held from November 20–22 in Stockholm, Sweden
5. Attended in person, Outbreak Investigation Module 2022, 5–9 December, Berlin, Germany
6. Attended online, Qualitative research inject days, 31 January and 3 February 2023
7. Attended in person, MediPIET Chemical, Biological, Radiological and Nuclear (CBRN) Awareness and Mitigation Module 2023, 13–17 March, Petrovac, Montenegro
8. Attended online, Vaccinology Inject Day, on 29 March 2023
9. Attended in person, Multivariable Analysis (MVA), 22–26 May 2023, Frankfurt, Germany
10. Attended in person, Rapid Assessment & Survey Methods (RAS), 19–23 Jun 2023, Stockholm, Sweden
11. Attended in person, Project Review Module 2023, 28 August to 1 September 2023, Lisbon, Portugal
12. Attended in person, ESCAIDE 2024 as a poster presenter, held from November 22–24 in Barcelona, Spain
13. Attended in person, Time Series Analysis (TSA) + GIS Module 2023, 11–15 December, Rome, Italy
14. Attended in person, One Health and VBD module 2023, 2–8 June, Belgrade, Serbia
15. Attended in person, Project Review Module 2024, 26–30 August, Lisbon, Portugal
16. Attended in person, ESCAIDE 2024 as a participant, held from November 20–22 in Stockholm, Sweden

Personal conclusions of the fellow

The MediPIET fellowship programme was a great opportunity for me to enhance my professional background. Completing this programme has been an incredibly enriching and transformative experience for me. It provided me with not only the technical knowledge and skills necessary for effective field epidemiology but also a deep appreciation for collaboration, cultural diversity, and public health impact across different regions. It was a very tough challenge, but my strong desire to learn was bigger and helped me to overcome the difficulties. I am proud to have grown both professionally and personally through this journey, working alongside brilliant colleagues and mentors who inspired me to continually strive for excellence. This experience has solidified my commitment to strengthening public health systems and contributing meaningfully to the prevention and control of infectious diseases globally. I look forward to applying these lessons and experiences to future challenges in public health.

Acknowledgements

I would like to express my deepest gratitude to all those who supported me throughout and following the MediPIET programme.

My thanks go to **Nana Mebonia** and **Natalie Girin**, my frontline coordinators. In different times they provided me with invaluable guidance, encouragement, and knowledge, which have been instrumental in my learning and professional growth. They have taught me not only the professional aspects of field epidemiology but also the importance of discipline in shaping the true character of a dedicated public health professional. I am also profoundly thankful to my country supervisor, **Alban Ylli**, and **Dorina Toçi**, for their unwavering support in the implementation of MediPIET's tasks. Their understanding and efforts to ease my daily work responsibilities during these two years allowed me to devote myself fully to the MediPIET programme. A special thanks goes to **Silva Bino**, who introduced me to this opportunity and provided invaluable cooperation in carrying out the programme's tasks. I would also like to extend my gratitude to **Luljeta Alla**, an exceptional epidemiologist, for her assistance in conducting the surveillance assessment.

I am proud to have grown both professionally and personally through this journey, working alongside brilliant colleagues and mentors who inspired me to continually strive for excellence. I look forward to applying these lessons and experiences to future challenges in public health.