

# MediPIET Summary report of work activities

Jonilda Sulo

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](https://www.ecdc.europa.eu/en/training-and-tools/training-programmes/fellowships/medi Piet). You can find more information about the programme at: <https://www.ecdc.europa.eu/en/training-and-tools/training-programmes/fellowships/medi Piet>

### Pre-fellowship short biography

Jonilda Sulo is a public health professional with a Master of Science in Public Health from the Medical University of Tirana. With over a decade of experience, she has focused extensively on infectious disease surveillance and the integration of digital solutions to strengthen public health systems in Albania. Among her most notable contributions is involvement in the development of the SISI system (Surveillance and Integrated System of Information), a project that has transformed how infectious diseases are monitored and reported nationwide. Currently serving as an Epidemiologist at the Department of Control of Infectious Diseases at the Institute of Public Health (IPH), she continues to play a pivotal role in enhancing Albania's disease surveillance capacities.

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## Fellowship

On 26.09.2024, Jonilda Sulo started her MediPIET fellowship at the Institute of Public Health, Tirana, Albania. This report summarises the work performed during the fellowship.

**National supervisor(s): Elona Kureta**

**Scientific coordinators: Nana Mebonia, Netta Beer**

## Fellowship projects

### 1. Surveillance

#### *Evaluation of ALERT Syndromic System in Albania ,2023*

**Background:** The ALERT Syndromic Surveillance System in Albania, established in 1999, has been a cornerstone in monitoring and responding to infectious disease outbreaks. This evaluation focuses on the system's performance in 2023, highlighting its design, functionality, and effectiveness in achieving its primary objectives of early detection and timely response to epidemic threats.

The evaluation describes the ALERT system, assess its attributes (simplicity, flexibility, acceptability), evaluates data quality, timeliness, sensitivity, and positive predictive value (PPV), and determines epidemic thresholds.

**Methods:** The methodology involved a comprehensive analysis of weekly syndromic data reported by healthcare providers across Albania, using statistical methods to establish epidemic thresholds based on moving averages and standard deviations.

**Results:** The ALERT system is user-friendly and widely accepted among healthcare professionals, with high percentages of people reporting ease of use and effective integration with other health tools. The system's flexibility means it can be adapted to new surveillance requirements, although feedback indicates room for further enhancements.

The surveillance system demonstrated a high level of acceptability, reflected in a 97% reporting rate from healthcare centres across most districts, indicating strong engagement and compliance among data providers. However, some districts showed discrepancies in reporting, suggesting potential areas for improvement in data entry practices or engagement strategies. Overall, the majority of districts reported data promptly, typically within 1-1.5 days, highlighting both the willingness and capacity of healthcare centres to participate in timely reporting.

The evaluation revealed variable sensitivity and PPV across different syndromes. Most syndromes exhibited stable trends with no nationwide outbreaks, although localised analysis identified a localised diarrhea outbreak in Bulqiza during week 22, emphasising the value of targeted surveillance.

**Conclusion:** The ALERT system is a critical component of Albania's public health infrastructure, effectively facilitating early detection and response to infectious diseases. While the system meets many of its objectives, areas such as accessibility, reporting timeliness, and sensitivity require ongoing attention and improvement. Enhancing training, technological infrastructure, and enhanced laboratory capacity will further strengthen the system's capacity to safeguard public health.

**Role and outputs:** Principal investigator

The fellow wrote the protocol, created and delivered the questionnaire, performed data checking and cleaning, analysed the data, wrote the final report and shared the findings with stakeholders. Additionally, a part of this evaluation was presented in ESCAIDE 2024 and will also be presented in the Infectious Disease Conference in Albania in December 2024.

**Supervisor:** Elona Kureta

Status: Completed

### 2. Outbreaks

#### *Norovirus outbreak in Gjoricë Commune, Albania*

**Introduction:** In June 2023, an increase in gastroenteritis cases in Gjoricë Commune, Bulqize Municipality, Albania, prompted an epidemiological investigation. Norovirus, a highly contagious virus primarily transmitted through contaminated water, was suspected as the cause. This initial symptoms experienced by people in the outbreak and epidemiological links pointed to the local water supply as the potential source.

**Methods:** A case definition was established, encompassing individuals who consumed tap water and exhibited gastroenteritis symptoms from May 31, 2023. Site visits, interviews, and case finding through health centers were conducted. A retrospective cohort study was employed to analyse water-related risks, and laboratory analyses on human samples identified the causative agent. Environmental testing evaluated water quality.

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**Results:** The outbreak affected two villages, resulting in 75 cases (2.54% attack rate) with a median age of 32 years. Common symptoms included diarrhea (97%) and vomiting (85%), with the outbreak lasting from May 31 to June 8, 2023. Continuous transmission indicated prolonged exposure to the contaminated water source. Norovirus was identified in 53% of human samples tested. Water analysis has revealed microbial pollution with *Escherichia coli* (*E.coli*) at a concentration of 30 per 100 milliliters of water.

**Conclusions:** This investigation underscores the role of contaminated water in norovirus transmission, stressing the importance of water quality management. Limitations included limited virological testing of water samples, highlighting a need for improved laboratory resources. The study calls for swift responses and coordinated public health interventions to mitigate risks associated with waterborne outbreaks.

#### Role and outputs: Principal investigator

The fellow actively participated in all phases of the outbreak investigation. She designed the investigation protocol, created and refined the questionnaire, conducted data entry, and performed statistical analysis. Additionally, she authored the final report, synthesising findings and recommendations for effective outbreak management.

**Supervisor:** Elona Kureta

Status: Completed

### 3. Research

#### *COVID-19 Vaccine Effectiveness in Preventing Severe Outcomes and Assessing the Impact of Prior SARS-CoV-2 Infection Among Hospitalized Adults in Albania, July 2022-July 2023*

**Background:** The COVID-19 pandemic significantly affected Albania, with over 319 959 cases and 3 625 deaths by December 2023. Despite a national vaccination campaign initiated in January 2021, only 44.1% of the eligible population had completed the full vaccination regimen by late 2023. In this study, we aim to estimate the effectiveness of COVID-19 vaccines in preventing severe outcomes and in assessing the impact of prior SARS-CoV-2 infection among adults hospitalised with COVID-19 in Albania.

**Methods:** A test-negative case-control study was conducted using SARI sentinel surveillance data from July 2022 to July 2023. The study included 1 858 hospitalised SARI patients aged 18 and older, with 410 testing positive for SARS-CoV-2 (cases) and 1,448 testing negative (controls). Vaccine effectiveness (VE) was calculated using logistic regression, adjusting for age, sex, comorbidities, and hospital stay duration.

**Results:** The overall VE for preventing hospitalisation was 30.1% for those fully vaccinated with two doses and 31.4% for those with a booster. VE against severe outcomes was 30.6%, increasing to 37.8% with a booster. The highest VE was observed in patients aged 80 and above, reaching 52.5% with those vaccinated with a booster dose. Prior SARS-CoV-2 infection, combined with a booster vaccination, significantly increased vaccine effectiveness (VE) to 76.2%

**Conclusions:** This study demonstrates the protective effect of COVID-19 vaccination, particularly with booster doses, in reducing severe outcomes. VE was highest among elderly patients, emphasising the importance of booster campaigns in vulnerable populations.

#### Role and outputs: Principal investigator

The fellow developed the project protocol, cleaned and validated the data, conducted data analyses, authored a comprehensive final report, submitted a manuscript to an international peer-reviewed journal, and presented a poster at ESCAIDE 2022.

**Supervisors:** Elona Kureta, Silvia Bino, Kujtim Mersini

### 4. Scientific communication

#### Conference presentations

Poster Presentation – 'Estimation of COVID-19 vaccine effectiveness against severe outcomes among adults hospitalized for severe acute respiratory infections in Albania, July 2022- March 2023', ESCAIDE Conference November 2023, Barcelona, Spain.

Poster Presentation – 'Usefulness of Syndromic Surveillance in Real Time Influenza Monitoring, Albania, 2019-2022', ESCAIDE Conference November 2024, Stockholm, Sweden.

#### Publications and outputs

'COVID-19 Vaccine Effectiveness in Preventing Severe Outcomes and Assessing the Impact of Prior SARS-CoV-2 Infection Among Hospitalized Adults in Albania, July 2022-July 2023' [submitted].

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## 5. Teaching activities

In February 2023, a comprehensive training session was held at the Institute of Public Health in Tirana, Albania, for 30 district epidemiologists representing SARI sentinel sites. This training focused on reporting Severe Acute Respiratory Infections (SARI) cases using the newly integrated electronic surveillance system (SISI). Key roles included developing a curriculum tailored to participant needs, creating interactive presentations on SARI case definitions and reporting protocols, and designing practical case-study exercises. These exercises enabled participants to practice real-life reporting scenarios, use the SISI system for data entry, and apply contact-tracing protocols effectively.

The two-day training, blended theoretical learning with hands-on activities to reinforce understanding. Evaluation feedback gathered through participant forms highlighted a high level of engagement, with 95% reporting clear objectives and 90% valuing the session's interactivity and relevance to their roles. Participants expressed interest in further training on digital reporting and emerging infectious diseases, demonstrating the session's impact and the need for continued learning opportunities.

## 6. Other activities

### Surveillance and Public Health Contributions

2022–2024: Fully engaged in improving Influenza-Like Illness (ILI) and Severe Acute Respiratory Infection (SARI) surveillance in Albania.

2022–2023: Worked on establishing Event-Based Surveillance in Albania.

2022–2024: Prepared weekly and monthly reports on syndromes and infectious diseases in Albania.

2022: Prepared the technical report for the Development of National Protocol for Interagency Information Sharing During Food Safety Events and Outbreaks of Foodborne Diseases.

### Research Participation

2021–2024: Participated in the study 'Cohort Study to Measure COVID-19 Vaccine Effectiveness Among Health Workers in Albania.'

2022–2024: Participated in the study 'Estimating COVID-19 Vaccine Effectiveness Against Severe Acute Respiratory Infections (SARI) Hospitalizations Associated with Laboratory-Confirmed SARS-CoV-2 in Albania' (*fellowship research project*).

### Conferences and Presentations

22–25 November 2022: Attended ESCAIDE Conference, Stockholm, Sweden (fellowship-supported activity).

2 December 2023: Presented the results of the fellowship research project at the Infectious Disease Conference, Albania.

22–24 November 2023: Attended ESCAIDE Conference, Barcelona, Spain (fellowship-supported activity).

11–14 March 2024 Participated in the Mosaic Framework Workshop, Albania.

22 August 2024: Presented the results of the fellowship research project NITAG Meeting in Albania.

11–13 September: Participated and presented in the 4th SEE Regional Meeting on Influenza Vaccination, Albania.

22–25 November 2024: Attended ESCAIDE Conference, Stockholm, Sweden (fellowship-supported activity).

### Workshops and Training

30 March 2023: Participated in the online course: Essentials of Writing and Reviewing Scientific Abstracts: A Field Epidemiology Focus (fellowship course).

24–28 April 2023: Attended the Writing Workshop, Zagreb, Croatia.

20–21 June 2023: Completed online courses (required by fellowship).

- Mass Gathering WHO Course
- United Nations 'BSAFE' Security Awareness Training
- Epidemic Intelligence E-Learning Course.

4 July 2023: Participated in the online training (EVA training)

- How to Design a Table-Top Exercise
- Contact Tracing in the Context of COVID-19 Response
- Introduction to Designing In- and After-Action Reviews.

20 March 2024: Participated in the online workshop: Abstract Writing (fellowship course).

20 June 2024: Attended an online meeting: Scientific Publications and Article Processing Charges (EVA training).

27 September 2024: Attended the online Eurosurveillance training: Manuscript Review (fellowship recommendation).

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## Publications (Coauthored)

Sridhar S, Fico A, Preza I, Hatibi I, Sulo J, Kissling E, et al. COVID-19 vaccine effectiveness among healthcare workers in Albania (COVE-AL): protocol for a prospective cohort study and cohort baseline data. *BMJ Open*. 2022;12(3):e057741. DOI: 10.1136/bmjopen-2021-057741.

Jorgensen P, Schmid A, Sulo J, Preza I, Hasibra I, Kissling E, et al. Factors associated with receipt of COVID-19 vaccination and SARS-CoV-2 seropositivity among healthcare workers in Albania (February 2021–June 2022): secondary analysis of a prospective cohort study. *Lancet Reg Health Eur*. 2023.

Rubin-Smith JE, Rojas Castro MY, Preza I, Hasibra I, Sulo J, Fico A, et al. Primary series COVID-19 vaccine effectiveness among healthcare workers in Albania, February–December 2021. *IJID Regions*. 2023.

Finci I, Rojas Castro MY, Hasibra I, Sulo J, Fico A, Daja R, et al. Primary series and booster coronavirus disease 2019 vaccine effectiveness in a cohort of healthcare workers in Albania during a BA.1 and BA.2 variant period, January–May 2022. *Open Forum Infect Dis*. 2023.

Katz MA, Cohuet S, Bino S, Tarkhan-Mouravi O, Kryeziu B, Otorbaeva D, et al. COVID-19 vaccine effectiveness against SARS-CoV-2-confirmed hospitalisation in the eastern part of the WHO European Region (2022–2023): a test-negative case-control study from the EuroSAVE network. *Lancet Reg Health Eur*. 2024.

## 7. MediPIET modules attended

- Introductory Course, 26 September- 07 October 2022, Spetces, Greece
- Inject days Operational Research 8-10 November 2022, Virtual
- Introduction to R ,28 November – 01 December 2022, Virtual
- Outbreak Investigation Module, 05 December -09 December 2022, Berlin, Germany
- Qualitative Research Inject days ,31 January and 3 February 2023, Virtual
- Chemical, Biological, Radiological and Nuclear Awareness and Mitigation Module,13 March-17 March 2023, Petrovac, Montenegro
- Vaccinology Inject Day, 29 March 2023, Virtual
- Multivariable Analysis Module (MVA), 22-29 May 2023, Frankfurt, Germany
- Rapid Assessment & Survey Methods (RAS), 19-23 June 2023, Stockholm, Sweden
- Project Review Module, 28 August-01 September 2023, Lisbon, Portugal
- Time Series Analysis + GIS, 11 - 15 December, 2023, Rome, Italy
- One Health approaches to field epidemiology practice in MediPIET countries, 3 - 7 June 2024, Belgrade, Serbia
- Project Review Module, 26 August- 30 August 2024, Lisbon, Portugal

## Personal conclusions of fellow

Participating in the MediPIET training has been a transformative experience, equipping me with essential skills and insights to tackle public health challenges effectively. The programme's interactive format allowed me to apply epidemiological principles practically, from outbreak investigations and data analysis to scientific writing, all crucial for impactful public health surveillance and intervention. Exposure to diverse case studies and collaborative projects sharpened my critical thinking and strategic planning abilities. Engaging with experienced professionals and mentors enhanced both my personal and professional development, deepening my understanding of epidemiological methods and emphasising the importance of communication and interdisciplinary collaboration. One of the most valuable aspects was the collaboration among colleagues — a key element in epidemiology. Working alongside peers from various countries enriched my perspective, improved my adaptability to different scenarios, and strengthened my collaborative skills. Building connections with colleagues across Europe also laid the groundwork for collective preparedness against common epidemiological threats, such as pandemics. Overall, the MediPIET training has been a defining chapter in my professional journey, molding me into a more adaptable and skilled public health practitioner. The insights gained and skills developed through this experience will undoubtedly enhance my ability to address public health threats in Albania and beyond.

## Acknowledgements

I would like to extend my deepest gratitude to those whose support and guidance have been instrumental throughout my journey.

To Nana Mebonia and Netta Beer, my dedicated frontline coordinators, thank you for your invaluable expertise, guidance, and encouragement, all of which have profoundly influenced my growth as a field epidemiologist.

My sincere appreciation goes to my supervisor, Elona Kureta, for her unwavering support and insight, which have greatly deepened my understanding of epidemiology's practical aspects. I am also immensely grateful to Silvia Bino, my department head, for her encouragement and support, enabling me to fully engage in my Fellowship work.

Finally, I wish to acknowledge the entire Institute of Public Health staff, especially those in the Epidemiology Department, whose assistance and collaborative spirit have been essential to my development and success.

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