

Laura Paris

The European Programme for Intervention Epidemiology Training (EPIET), Cohort 2023
Health Protection Surveillance Centre (HPSC), Dublin, Ireland

Background

The ECDC Fellowship Programme is a two-year competency-based training with two paths: the field epidemiology path (EPIET) and the public health microbiology path (EUPHEM). After the two-year training, EPIET and EUPHEM graduates are considered experts in applying epidemiological or microbiological methods to provide evidence to guide public health interventions for communicable disease prevention and control. The Administrative Decisions ECDC/AD/2022/16 Rev.01 and ECDC/AD/2023/06 govern the European Union (EU)-track and Member States (MS)-track, respectively, of the ECDC Fellowship Programme, field epidemiology path (EPIET) and public health microbiology path (EUPHEM), Cohort 2023.

Both curriculum paths provide training and practical experience using the 'learning-by-doing' approach at acknowledged training sites across the European Union/European Economic Area (EU/EEA). This final report describes the experiences and competencies the fellow acquired by working on various projects, activities, theoretical fellowship training modules, other modules or trainings, and international assignments or exchanges during the fellowship.

Pre-fellowship short biography

Laura Paris is an EU-track fellow in the EPIET programme, Cohort 2023. Prior to joining the fellowship, Laura was a Senior Humanitarian Health Research Advisor at Elrha, an international non-governmental organisation (NGO) specialising in research focusing on health in humanitarian crises, where she engaged with public health researchers globally to ensure that Elrha-funded research was rigorous, ethical, and responsive to the needs of people affected by the crises.

Laura has an academic background in Biomedical Science and a master's degree in Control of Infectious Diseases from the London School of Hygiene & Tropical Medicine. She has a strong interest and substantial experience in vector-borne diseases and emergency settings, having worked in humanitarian/public health for NGOs, the United Nations (UN), and with research institutions in various capacities. Laura is also an activist for reproductive rights in Malta.

Results

The objectives of the core competency domains were achieved partly through project and activity work, and partly by participating in the training modules. Results are presented in accordance with the EPIET/EUPHEM core competencies, as set out in the ECDC Fellowship Manual¹.

¹ European Centre for Disease Prevention and Control (ECDC). Manual for the ECDC Fellowship Programme EPIET and EUPHEM paths. Stockholm: ECDC; 2025. Available at: <https://www.ecdc.europa.eu/en/publications-data/ecdc-fellowship-programme-manual>

1. Epidemiological investigations

1.1. Outbreak investigations

1.1.1. An outbreak of VTEC O26:H11 VT1, Ireland, 2024

Supervisor: Patricia Garvey, Principal Epidemiologist, Health Protection Surveillance Centre (HPSC), Dublin, Ireland

Category: Food- and waterborne diseases

Aim: To investigate a VTEC O26:H11 VT1 outbreak in Ireland between May and June 2024 and identify the source of infection.

Methods: We collected epidemiological data using enhanced surveillance forms and a trawling questionnaire. We established case definitions ('confirmed', 'probable', and 'possible') based on clinical, microbiological, and epidemiological criteria. Environmental and microbiological investigations included water and food supply chain analyses, and whole genome sequencing (WGS) to identify genetic clusters.

Results: 22 cases of VTEC O26:H11 VT1 were confirmed, 54% in urban areas, with a median age of 16 (range 0–72) years and equal sex distribution. Out of those, 48% (n=11) required hospitalisation; no fatalities or cases of haemolytic uraemic syndrome occurred. Epidemiological analysis indicated a continuous-source outbreak. Common sources of exposure included raw fruits and vegetables, breaded chicken products, and berries. Microbiological investigations did not identify any closely related international strains, and environmental inspections ruled out farm animal exposure and other common vectors.

Conclusions/Public health implications: While high-risk food items were implicated, no definitive source was identified, suggesting indirect contamination pathways. Recommendations included enhanced surveillance tools, public health education on food safety, and collaborative efforts with food suppliers to address potential contamination risks.

Role: Laura led the epidemiological investigation and was a member of the Outbreak Control Team (OCT). She adapted surveillance tools, collated and analysed data. She also collaborated with stakeholders to compile outbreak information, presented key findings to the OCT, and authored the final outbreak report (File: Outbreak investigation, Output 1).

1.2. Surveillance

1.2.1. Evaluation of the national gonorrhoea surveillance system in Ireland, 2024

Supervisor: Kate O'Donnell, Senior Epidemiologist, HPSC, Dublin, Ireland

Category: Evaluating a surveillance system

Aim: To evaluate completeness of the gonorrhoea surveillance system in Ireland and acceptability of the surveillance system among stakeholders and end users.

Methods: We analysed gonorrhoea data (2018–2023) from the Computerised Infectious Disease Reporting (CIDR) system (2018–2023) for completeness across key variables. The variables assessed included laboratory and enhanced surveillance fields, with completeness stratified by year, region, and patient type. A structured e-survey captured the perceptions of system acceptability, usability and challenges from laboratory, clinical, and public health professionals.

Results: Completeness of laboratory variables was >90%. Enhanced surveillance data fields often fell below the national target (65%). Regional variation was noted, with three health regions, including Dublin, having lower completeness. Among the stakeholders, 85% found the system acceptable and easy to use, but raised concerns about manual data entry and time burdens.

Conclusions/Public health implications: While the gonorrhoea surveillance system achieves high completeness for most laboratory/clinical data, the completeness of enhanced surveillance data remains inconsistent, influenced by regional, temporal, and patient-specific factors. Addressing these gaps through targeted interventions, automation, and system integration will improve data quality and completeness.

Role: Laura was the principal investigator for this evaluation. She developed the methodology and wrote the study protocol. She managed a multi-stakeholder oversight group which provided expert guidance to the evaluation. Laura led data analysis and authored the final report, a policy brief, and an epi-insight article (File: Surveillance Project, Output 1).

1.2.2. Evaluation of the World Health Organization (WHO) Early Warning, Alert and Response System's (EWARS) appropriateness for use by the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) in the humanitarian context of Gaza, Palestine², 2024

Supervisor: Department of Health, UNRWA Headquarters, Amman, Jordan

Category: Evaluating a surveillance system

Aim: To evaluate the implementation, reach, timeliness, and data quality of EWARS in Gaza and collect end-user feedback on simplicity, usefulness and acceptability.

Methods: Between 3–21 March 2024, EWARS was piloted in select UNRWA sites whilst maintaining its routine Excel reporting system. We compared timeliness, completeness and consistency of EWARS data against the routine system. An informal discussion on EWARS' usefulness, simplicity, and acceptability was held with 11 UNRWA staff, incorporating feedback from the Gaza field team.

Results: The details of the results of this study are classified. Data collected through EWARS were timely and consistent, with minor discrepancies, linked to capacity and technical issues. EWARS was widely accepted amongst end-users for its simplicity, reliability, and improved data management.

Conclusions/Public health implications: Despite constraints, EWARS proved effective in capturing reliable infectious disease data across Gaza, with good integration with humanitarian partners. A full transition to EWARS was approved by the Director of Health, UNRWA Headquarters.

Role: Laura led the evaluation during her international assignment with the Global outbreak alert and response network (GOARN). She refined the protocol and oversaw the roll-out together with the Director of Health, UNRWA, and an epidemiologist from ECDC. Laura assisted with data analysis and interpretation of results and authored the final report which was shared with international stakeholders within the Health Cluster, including the WHO. Laura presented the results of this evaluation at internal and external meetings (File: Surveillance project, Output 2).

1.2.3. Deterioration of health outcomes in Gaza: 19 months of protracted conflict, Palestine, 2023/2024

Supervisor: Department of Health, UNRWA Headquarters, Amman, Jordan

Category: Routine surveillance

Aim: To describe trends in infectious diseases and estimate the prevalence of malnutrition in Gaza.

Methods: UNRWA health facilities reported daily data on consultations for priority infectious diseases, using standardised case definitions to a clinical database. We compared the cumulative incidence between January and August 2024 with the same period in 2023 (pre-conflict), and calculated morbidity proportions for 2024 using total medical consultations as the denominator. Since 7 March 2024, children under five attending HFs were screened for malnutrition using mid-upper arm circumference (MUAC). We estimated the prevalence of global acute malnutrition (GAM) defined as MUAC measurement under 125mm.

Results: Between January and August 2024, compared to the same period in 2023, acute watery diarrhoea consultations increased 39-fold (451 300 vs 11 562), bloody diarrhoea increased 24-fold (7 470 vs 311), and hepatitis A increased 389-fold (41 891 vs 108), accounting for 5%, 0.1% and 0.3% of total medical consultations during 2024, respectively. By 25 August 2024, the prevalence of GAM was 7.7% (12% in 6–23 months age group and 2.6% in 24–59 months) among the 66 656 screened children.

Conclusions/Public health implications: The protracted conflict and devastated healthcare infrastructure in Gaza have led to a dramatic increase in infectious diseases and malnutrition. We recommend opening humanitarian corridors, and immediate and sustained international intervention, including a ceasefire to address health needs.

Role: Laura led surveillance data analysis, interpretation, and public health framing. She wrote an article published in *The Lancet* (File: Scientific Communications, Output 4).

² This designation shall not be construed as recognition of a State of Palestine and is without prejudice to the individual positions of the Member States on this issue.

Routine surveillance activities

Routine surveillance of malnutrition and diseases of priority concern in UNRWA health facilities and medical points in Gaza, Palestine, March–May 2024

Activities and role: Laura oversaw the routine surveillance of malnutrition and 11 diseases of priority concern and unusual events in UNRWA health facilities and medical points in Gaza, Palestine during her international assignment at the UNRWA Headquarters in Amman, Jordan. She cross-checked and validated infectious disease data submitted by field locations. She collated, analysed and presented these data via an infectious disease dashboard and weekly presentations at the Health and Water, Sanitation and Hygiene (WASH) cluster meetings. Laura authored a manuscript published in *The Lancet*, highlighting the deterioration of health outcomes in Gaza using data from different sub-divisions of the UNRWA Department of Health (File: International assignment, GOARN deployment outputs).

National surveillance of pertussis in Ireland, May–September 2024

Activities and role: Laura attended routine pertussis Incident Management Team (IMT) meetings which were set up as a response to an increasing number of cases of pertussis in 2024. She supported with the processing and analysis of routine pertussis data and the development of an interactive Power Business Intelligence (BI) dashboard that was used to visualise pertussis case data. Laura led an initiative exploring reasons for differences in pertussis epidemiology in Ireland and Northern Ireland and authored an internal report (May–September 2024) (File: Outbreak investigation, Output 2).

2. Applied public health research

2.1. Point prevalence survey (PPS) of hospital-acquired infections (HAIs) and antimicrobial use (AMU) in acute care hospitals in Ireland, 2023

Supervisor: Stephen Murchan, Senior Epidemiologist, HPSC, Ireland

Aim: To investigate the occurrence of HAIs, and AMU practices in intensive care unit (ICU) settings in Ireland.

Methods: Between 1–31 May 2023, we collected data from all acute care hospitals in Ireland as part of the European PPS. We compared ICU patients with non-ICU patients and calculated prevalence (p) and prevalence ratios (PR) to examine associations between risk factors and increased risk of HAI and AMU.

Results: Of 12 587 patients across 65 hospitals, 394 (3%) were in ICUs, where HAI prevalence was higher (18%) than in non-ICU settings (7%). Pneumonia (47%), systemic infections (22%), and bloodstream infections (7%) were most common, with *Escherichia coli* (20%) and *Staphylococcus aureus* (17%) frequently isolated. HAIs were strongly associated with invasive devices – central venous catheters (risk ratio (RR)=2.0, 95% confidence intervals (CI): 1.3–4.4, $p<0.001$), urinary catheters (RR=2.11, 95% CI: 1.7–2.6, $p<0.001$), intubation (RR=1.5, 95% CI: 1.3–1.8, $p<0.001$), and rapidly fatal disease (RR=1.5, 95% CI: 1.3–1.7, $p<0.001$). AMU, reported in 60%, declined after 21 days (RR=0.69, 95% CI: 0.54–0.89, $p=0.003$), and was lower in infants <1 month (RR=0.42, 95% CI: 0.29–0.60, $p<0.001$).

Conclusions/Public health implications: To reduce HAIs, strict adherence to evidence-based protocols and preventative measures – such as care bundles, hand hygiene, staff training, and antimicrobial stewardship – is essential.

Role: Laura developed the study protocol and led data analysis under the supervision of project and EPIET supervisors. She authored the final report (File: Research, Output 1).

2.2. Point prevalence survey of glucose (glycated haemoglobin) levels in UNRWA diabetes patients in Gaza, Palestine, March 2024

Supervisor: Department of Health, UNRWA Headquarters, Amman, Jordan

Aim: To estimate the glycated haemoglobin (HbA1c) levels in persons living with diabetes in Gaza.

Methods: Between 1–15 March 2024, blood samples were collected from diabetes patients registered in 17 clinics and sent for laboratory testing to examine HbA1c levels. We calculated prevalence of controlled HbA1c level (<7.0% HbA1c) and prevalence ratios. An analysis of variance (ANOVA) test assessed differences in HbA1c levels between clinics.

Results: Of all patients with diabetes, 60% (n=189) had controlled HbA1c levels (<6.9%), while 40% (n=131) had uncontrolled levels ($\geq 7.0\%$). The mean HbA1c was 7.1% (standard deviation (SD)=0.016); median was 6.7% (interquartile range (IQR): 6.0–7.9%). Deir al-Balah had the highest testing participation (39%), with variation in uncontrolled HbA1c across clinics (9–62%, $p=0.086$). West Nuseirat (62%), Bureij (54%), and Khan Younis (50%) had the highest rates of uncontrolled levels. Youth aged 11–30 years had significantly higher risk (PR=2.4, 95% CI: 2.2–2.6), while sex differences were not significant (PR=1.1; 95% CI: 0.71–1.63).

Conclusions/Public health implications: A large proportion of patients experienced uncontrolled levels of HbA1c highlighting the critical access to insulin and devices for blood sugar monitoring and injecting insulin needed for all persons living with diabetes in that region. Young people were a key risk group.

Role: Laura was responsible for the development of the methodology and study protocol. She conducted the data analysis and presented it to the Director of Health, UNRWA. She also authored the final report (File: Research, Output 2).

2.3. Protecting infants from respiratory syncytial virus (RSV): impact assessment of RSV immunisation with nirsevimab, Ireland, 2024/2025

Supervisor: Lisa Domegan, Principal Epidemiologist, HPSC, Ireland

Aim: To estimate the impact of nirsevimab on RSV-related morbidity among infants during the 2024/2025 winter period in Ireland.

Methods: This retrospective, population-based ecological study included all infants born between 1 September 2024 and 28 February 2025, and all laboratory-notified RSV cases between 1 September 2018 and 28 February 2025. Immunisation uptake was monitored weekly. We described and compared the epidemiology of RSV across the seasons. We estimated immunisation impact using a standardised formula based on coverage and effectiveness and calculated the number needed to immunise (NNI) in a season to prevent RSV-related outcomes.

Results: 22 444 infants received nirsevimab as part of the national immunisation programme, with a cumulative uptake rate of 83%. A total of 360 RSV cases were notified, compared with 1 142 in the same period of 2023/2024, representing a 68% reduction. The disease-prevented fraction was estimated to be 75% (95% CI: 74–75). An estimated 1 055 RSV notifications (95% CI: 1 038–1 071), 459 non-hospitalised emergency department presentations (95% CI: 452–467), 437 hospitalisations (95% CI: 430–443), and 76 ICU admissions (95% CI: 74–78) were averted in the 2024/2025 birth cohort. The NNI to prevent one event was 22 for RSV notifications (95% CI: 21–24), 51 for emergency department presentations (95% CI: 47–55), 54 for hospitalisations (95% CI: 50–58), and 309 for ICU admissions (95% CI: 249–369).

Conclusions/Public health implications: Nirsevimab significantly reduced RSV-related morbidity in infants, supporting the effectiveness of immunisation in preventing severe RSV outcomes. We recommend its use for future RSV seasons and extension to catch-up cohorts.

Role: Laura developed the methodology and protocol, led the analyses, and authored the final report and manuscript which was submitted to a peer-reviewed journal (File: Research, Output 3).

2.4. Multivariable analysis on non-viral suppression in persons living with HIV (PLHIV) in Ireland, 2022

Supervisor: Kate O'Donnell, Senior Epidemiologist, HPSC, Ireland

Aim: To identify risk factors for non-viral suppression in PLHIV registered in Ireland in 2022, in order to inform interventions catered specifically to the needs of risk groups and improve antiretroviral treatment (ART) adherence and viral suppression of HIV in Ireland.

Methods: We extracted data from the 2022 national HIV database in Ireland that contains patient information on 6 600 people attending HIV care. We calculated prevalence and adjusted prevalence ratios (PRs) using multivariable Poisson regression to identify risk factors for non-viral suppression (HIV viral load test result ≤ 200 copies/mL) in PLHIV.

Results: The multivariable analysis identified several significant predictors of non-viral suppression in PLHIV. First-time clinic attendees in Ireland had a markedly higher risk (adjusted relative risk (aRR)=3.63, $p < 0.001$). People who inject drugs (PWID) showed the highest risk (aRR=5.15, $p < 0.001$), followed by heterosexual males (aRR=2.01, $p=0.021$). Females also had an increased risk (aRR=1.59, $p=0.109$), though not statistically significant.

Individuals from Latin America and the Caribbean (aRR=0.27, p=0.009) and sub-Saharan Africa (aRR=0.50, p=0.046) had lower risks compared to Ireland-born individuals. No significant associations were found for age, other modes of transmission, or other regions.

Conclusions/Public health implications: PWID face the highest risk of non-viral suppression among PLHIV in Ireland, highlighting the need for tailored, integrated interventions to support treatment adherence and engagement in care.

Role: Laura led the development of methodology and protocol writing for this analysis. She was supported by the scientific writing group. She led the analyses and authored the final report and manuscript (File: Research, Output 4).

3. Teaching and pedagogy

Delivery of outbreak investigation case studies at the School of Veterinary Medicine, University College Dublin, Ireland, 2023 and 2024

Laura delivered outbreak investigation case studies to fourth-year veterinary students at the School of Veterinary Medicine, University College Dublin on 2–3 November 2023, 31 October 2024 and 1 November 2024 (total of four sessions). Using case studies of a *Salmonella* outbreak in Ireland and a *Trichinella* outbreak in France, students worked through each outbreak stage, performing calculations, drawing epidemic curves, and interpreting data. As a co-facilitator in 2023, Laura guided discussions, explained key epidemiological concepts, and encouraged hands-on learning. In 2024, Laura took the role of Principal Facilitator, leading the case studies and explanation of epidemiological concepts. Although no formal evaluation was conducted, the sessions were well-received. Laura gained valuable experience delivering in-person, interactive teaching, and identified opportunities to improve classroom layout and scheduling for future sessions (File: Teaching, Outputs 1 and 3).

Delivery of lectures and epidemiological outbreak investigation case studies to scientific and medical staff at HPSC, Dublin, Ireland, 2024

This training activity, conducted in October and November 2024, aimed to strengthen outbreak investigation skills among scientific and medical staff at HPSC. Laura assessed learning needs in collaboration with a Principal Epidemiologist. She developed and delivered an online lecture on the '10 steps of an outbreak investigation' and led two in-person case study sessions. Participants explored cohort and case-control study designs through hands-on exercises. As lead facilitator, Laura gained valuable experience in designing learning materials, delivering lectures, and facilitating group discussions. Feedback was positive, and the level of engagement was high throughout all sessions (File: Teaching, Output 2).

4. Communications related to the EPIET/EUPHEM fellowship

4.1. Manuscripts published in peer-reviewed journals

- **Paris L**, Al-Jadba G, Zeidan W, Spiegel P, Elkhatib Z, Habash R, et al. Deterioration of health outcomes in Gaza: 19 months of protracted conflict. *The Lancet*. 2025;405(10494):pp.2041–2044. Available at: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(25\)00812-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(25)00812-8/fulltext)
- **Paris L**, Domegan L, O'Leary M, Hanrahan M, McKenna A, Kelly E, et al. Protecting infants from respiratory syncytial virus (RSV): High impact of a novel infant immunisation with nirsevimab, 2024/2025. [Manuscript submitted to a peer-reviewed journal and under review].

4.2. Other reports

- **Paris L**, Murchan S, Gurpinar U, Fitzgerald M, Robinson E, Frost S. Point prevalence survey (PPS) of hospital-acquired infections (HAI) and antimicrobial use (AMU) in European acute care hospitals in Ireland, 2023. Available at: [Point Prevalence Survey 2023: Supplementary Report by Acute Hospital Type](#)
- **Paris L**. Evaluation of the World Health Organization (WHO) Early Warning and Response System's (EWARS) appropriateness for use by the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) in the humanitarian context of Gaza, Palestine, 2024. (Internal Report)
- **Paris L**. Point prevalence survey of glucose (glycated haemoglobin) levels in UNRWA diabetes patients in Gaza, Palestine, March 2024. (Internal Report)

- **Paris L.** European Centre for Disease Prevention and Control (ECDC). Postcard from the field: Global outbreak alert and response network (GOARN) deployment to support the health response in Gaza 2024. Stockholm: ECDC; 2024. Available at: <https://www.ecdc.europa.eu/en/news-events/postcard-field-goarn-deployment-support-health-response-gaza-2024>
- **Paris L.** Global outbreak alert and response network (GOARN). Outbreak investigation, International surveillance, and emergency response: Escalating crisis in Israel and the occupied Palestinian territory, 2024. Available at: <https://goarn.who.int/latestnews/stories/laura-paris->
- **Paris L,** Garvey P, Outbreak Control Team (OCT). An outbreak of VTEC O26:H11 VT1, Ireland, 2024. (Internal Report)
- **Paris L,** O'Donnell K, Downes P, McIntyre A, Fitzgerald M, Robinson E. Evaluation of the national gonorrhoea surveillance system in Ireland, 2024. (Internal Report)
- **Paris L,** O'Donnell K. Strengthening Gonorrhoea Surveillance in Ireland. Epi Insight.2025;26(5). Available at: <https://ndsc.newsweaver.ie/4otaa688p3/1uwyg566dws19j5jvf6n1d?email=true&lang=en&a=2&p=65601229&t=31302970>
- Hanrahan M, Pereira A, , O'Leary M, Hanrahan M, McKenna A, Kelly E, et al. Respiratory Syncytial Virus (RSV) Immunisation Pathfinder Programme 2024–2025. Evaluation – Technical Report, 2025
- **Paris L,** Domegan L, O'Leary M, Hanrahan M, McKenna A, Kelly E, et. Al. Respiratory Syncytial Virus (RSV) Immunisation Pathfinder Programme 2024–2025. Evaluation – Epidemiological Report, 2025.

4.3. Conference presentations

- **Paris L,** Al-Jabda G, Zeidan W, et al. Infectious diseases and malnutrition in Gaza – August 2024 – approaching 1 year of conflict. Poster presented at: European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE) 2024; August 2024; Stockholm, Sweden. Available at (pp.288): https://www.escaide.eu/sites/default/files/documents/ESCAIDE-2024-Abstract-book_0.pdf
- Hanrahan M, Pereira A, Domegan L, **Paris L.** Evaluation of the RSV Immunisation Pathfinder Programme in Ireland (2024/2025). Poster presented at: 5 Nations Health Protection Conference; May 2025; Birmingham, United Kingdom. Available at: <https://5-nations.com/wp-content/uploads/2025/05/Book-of-Abstracts.pdf>
- Hanrahan M, Pereira A, Domegan L, **Paris L.** Evaluation of the RSV Immunisation Pathfinder Programme in Ireland (2024/2025). Poster presented at: Summer Scientific Meeting; 2025; Dublin, Ireland. Available at: <https://www.rcpi.ie/News/faculty-of-public-health-medicine-addresses-emerging-challenges-at-summer-scientific-meeting>
- **Paris L,** Domegan L, O'Leary M, et al. Protecting infants from respiratory syncytial virus (RSV) in Ireland: Impact of a national nirsevimab immunisation programme, 2024/25. [Submitted abstract for oral presentation at ESCAIDE 2025, Warsaw, Poland].

4.4. Other presentations

- **Paris L.** Infectious diseases and malnutrition in Gaza. Poster presented at: Training and Research Forum, HPSC; May 2024; Dublin, Ireland.

5. EPIET modules attended

- Introductory Course, 25 September–13 October 2023, Spetses, Greece
- Study Protocol and Scientific Writing, 26–27 October and 7–8 November 2023, virtual
- European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE) 2023, 22–24 November 2023, Barcelona, Spain
- Multivariable Analysis, 19–23 February 2024, Berlin, Germany
- Vaccinology, 4–8 March 2024, virtual
- Writing Abstracts for Scientific Conferences, 14 March–0 March 2024, virtual
- Qualitative Research, 19 and 22 March 2024, virtual
- Public Health Microbiology I - Basic phylogeny, 17–18 June 2024, virtual
- Project Review Module, 26–30 August 2024, Lisbon, Portugal
- ESCAIDE 2024, 20–22 November 2024, Stockholm, Sweden
- Time Series Analysis, 9–13 December 2024, Utrecht, The Netherlands
- Public Health Microbiology II – Biorisk & Quality Management, 28–30 April 2025, virtual

- One-Health, 12–15 May 2025, virtual
- Rapid Assessment and Survey Methods, 9–13 June 2025, Athens, Greece
- Project Review Module, 25–29 August 2025, Lisbon, Portugal
- Public Health Leadership, 1–3 September 2025, Lisbon, Portugal.

6. Other training

- European Centre for Disease Prevention and Control (ECDC), Introduction to outbreak investigation e-learning, 20 October 2022, online
- Fundamentals of R for public health (16 hours) with Applied Epi, September 2023, online
- HPSC R training, self-paced, member of R users group, online
- GenEpi-BioTrain - Virtual training 06: Introduction to SARS-CoV-2 wastewater analysis, January 2024, online
- BSAFE, United Nations Department of Safety and Security, February 2024, online
- Joint Assessment and Detection of Events (JADE) simulation exercise for WHO European Region National IHR Focal Points, 2024, Dublin, Ireland
- Writing abstract webinar ECDC/EPIET 14 March 2024, online
- PETAL Seminars, September 2024, online
- GenEpi-BioTrain - Virtual training 13 – RSV Insights: Genomic Evolution, Treatments, and Public Health Strategies, December 2024, online
- Mpox scenarios and lessons shared for Health Protection, January 2025, online
- Power-BI for beginners, in-house training in HPSC, March 2025, online.

7. International assignments

Eight-week GOARN deployment to support the UNRWA Department of Health in Amman, Jordan with surveillance and control of infectious diseases of priority concern in Gaza, Palestine (3 March–8 May 2024).

8. Other activities

- Visit to the national wastewater surveillance laboratory at University College Dublin, November 2023, Dublin, Ireland
- Attended weekly gastrointestinal infections surveillance meetings (October 2023–March 2024)
- Attended national wastewater meetings (October 2023–March 2024)
- Attended respiratory unit weekly surveillance meetings (September 2023–March 2024)
- Attended weekly meetings for surveillance of vaccine-preventable illnesses (May 2024–January 2025)
- Attended bi-weekly surveillance meetings for HIV and STIs. (May 2024–June 2025)
- Attended mpox IMT meetings (September 2024–June 2025).

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I would like to thank all my colleagues from Cohort 2023, and past and present EPIET fellows at HPSC. I have learnt so much from all of them.

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