SURVEILLANCE — DAY 7			
Time	**Activity Description**	**Intended Learning Outcomes** *After completion, trainees will (be able to):*	**Relevance** *Why this is important for you as:*
0930-1240	Foodborne pathogens epidemiological investigations with case studies - *Salmonella* (François-Xavier Weill and Nathalie Jourdan)	Know the biology of *Salmonella enterica* (microbiological, genomic and molecular aspects, global distribution, clinical aspects, diagnostics methods and treatments) Identify of transmission and source identification, antimicrobial resistance, transmission patterns, pathogenicity, host adaptation, and population structure Understand the importance and application of *Salmonella* genomics to surveillance	**Bioinformaticians** will learn through the presented examples which are the best tools and platforms to analyze *Salmonella* genome assemblies, to detect genomic variations and antimicrobial resistance. **Microbiologists** will deepen their knowledge about *Salmonella* biology and surveillance, gaining more insights into the molecular mechanisms of pathogenicity, host specificity, and genetic diversity of *Salmonella* strains. **Epidemiologists** will learn through these real-life scenarios how to best use genomic and epidemiological data to detect *Salmonella* outbreaks, identify sources of infection, track transmission routes, and to implement control measures, contributing to the surveillance of *Salmonella* infections in human and animal populations.
1400-1500	WGS systems for One Health Mirko Rossi and Priyanka Nannapaneni	Understand the principles and applications of WGS technology in the context of One Health Evaluate the potential of WGS for enhancing surveillance and early detection of foodborne and waterborne pathogens Show the collaboration strategies between EFSA and ECDC to harmonize WGS methodologies and data sharing practices	**Bioinformaticians, Microbiologists and Epidemiologists** should possess a deep understanding of WGS technology in the context of One Health and how it is addressed at EU level allowing them to collaborate closely for the integration of WGS data into epidemiological investigations and microbial genomics research. They also should learn about the collaboration axes between EFSA and ECDC.

Details

<u>Foodborne pathogens epidemiological investigations with case studies - *Salmonella*</u>
This case study on *Salmonella* provides participants with an in-depth examination of real-world *Salmonella* outbreaks, offering insights into the genomic and epidemiological factors influencing disease transmission and pathogenicity. Participants, including bioinformaticians, microbiologists, and epidemiologists, will be presented with genomic data from *Salmonella* case studies and with antimicrobial resistance. Through interactive sessions and group discussions, participants will explore the role of genomics in understanding *Salmonella* pathogenesis, host adaptation, and transmission dynamics. By the end of the course, participants will be equipped with the knowledge and tools to contribute effectively to the surveillance, control, and prevention of *Salmonella* infections.

<u>Animal surveillance on EU level, data sharing and reporting to EFSA</u>
This course focuses on animal surveillance efforts at the EU level, emphasizing data sharing, reporting mechanisms, and collaboration with the European Food Safety Authority (EFSA). Participants will learn about the organization of NRC surveillance systems and their coordination with other EU countries to ensure effective disease monitoring and control. Through case studies and examples of surveillance networks in Europe, participants will gain insights into the roles and responsibilities of various stakeholders in animal disease surveillance. Additionally, participants will explore EpiPulse, a platform for epidemiological data sharing and visualization, to understand its functionality and relevance in the context of EU-level surveillance efforts. By the end of the course, participants will be equipped with the knowledge and skills to contribute effectively to animal surveillance and disease control initiatives at the regional and international levels.

<u>WGS systems for One Health</u>
This course provides participants with a comprehensive understanding of WGS technology within the framework of One Health. Participants will learn the principles and diverse applications of WGS technology, particularly in relation to the surveillance and early detection of foodborne and waterborne pathogens. Additionally, the course will highlight the collaborative efforts between the EFSA and the ECDC aimed at harmonizing WGS methodologies and facilitating data sharing practices. Participants will gain insights into the strategies employed by EFSA and ECDC to streamline WGS processes and foster effective collaboration.