One Health European Joint Programme (EJP): Where we go

Arnaud Callegari, Coordinator (Anses)
Hein Imberechts, Scientific Coordinator (Sciensano)

Swedish Presidency of the Council of the European Union
EFSA Advisory Forum
Stockholm *28 June 2023*

One Health EJP: key facts

- **European Joint Programme** Co-fund under Horizon 2020, project started in January 2018 until September 2023.

  - Coordination Team: ANSES, France Scientific Coordinator: Sciensano, Belgium.

  - 44 partners across Europe PH/AH/FS

  - Partners have received mandate from authorities.

  - Total cost €90M, **50%** EU co-funded.

  - 24 Joint **Research** Projects and 7 Joint **Integrative** Projects.

  - **Education & Training** activities:

    - 17 PhD students, 40+ Short Term Missions, Workshops, Summer Schools and Continuing Professional Development modules.

5 YEAR PROJECT

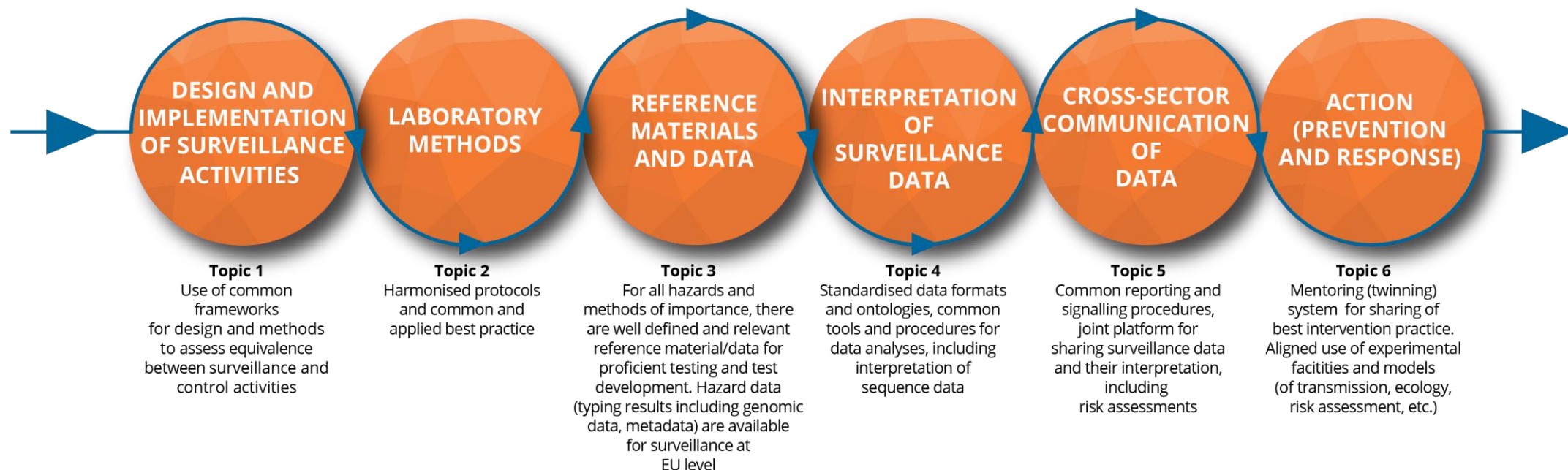HORIZON 2020 **50%** CO-FUNDED € 90 MILLION

44 PARTNERS ACROSS EUROPE

FOODBORNE ZOONOSES

EMERGING THREATS

ANTIMICROBIAL RESISTANCE

The EJP Integrative Strategy Matrix

Working hypothesis of 'One Health'

PREVENT, DETECT, RESPOND

**DESIGN AND IMPLEMENTATION OF SURVEILLANCE ACTIVITIES**

LABORATORY METHODS

REFERENCE MATERIALS AND DATA

INTERPRETATION OF SURVEILLANCE DATA

CROSS-SECTOR COMMUNICATION OF DATA

ACTION (PREVENTION AND RESPONSE)

Topic 1
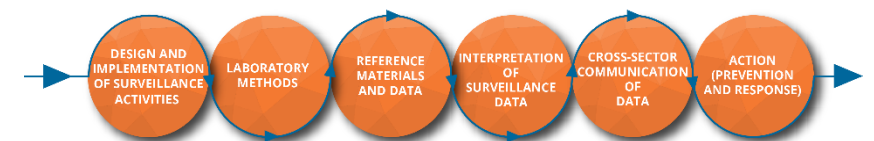Use of common frameworks for design and methods to assess equivalence between surveillance and control activities

Topic 2
Harmonised protocols and common and applied best practice

Topic 3
For all hazards and methods of importance, there are well defined and relevant reference material/data for proficient testing and test development. Hazard data (typing results including genomic data, metadata) are available for surveillance at EU level

Topic 4
Standardised data formats and ontologies, common tools and procedures for data analyses, including interpretation of sequence data

Topic 5
Common reporting and signalling procedures, joint platform for sharing surveillance data and their interpretation, including risk assessments

Topic 6
Mentoring (twinning) system for sharing of best intervention practice. Aligned use of experimental facilities and models (of transmission, ecology, risk assessment, etc.)

Successive steps in setting up surveillance programmes, for preparedness.

For details please consult our Strategic Research Agenda onehealthejp.eu

Joint Integrative Projects	Integrative Strategy Matrix	Joint Research Projects		
		Foodborne Zoonoses	AMR	Emerging Threats
MATRIX	Design and implementation surveillance activities	AIR-SAMPLE, NOVA		
OH-HARMONY-CAP	Laboratory methods	METASTAVA	IMPART, FARMED, WORLDCOM	TOX-Detect, MAD-Vir, TELE-Vir, IDEMBRU, MEmE, PARADISE
CARE	Reference material and data	LISTADAPT, MedVetKlebs		
ORION, COVRIN	Interpretation of surveillance data	ADONIS, BeONE, DISCoVeR, TOXOSOURCES	ARDIG, FULL-FORCE, FED-AMR, RADAR	
COHESIVE	Cross-sector communication of data			
Simulation Exercise	Action (prevention & response)	MoMIR-PPC, BIOPIGEE		
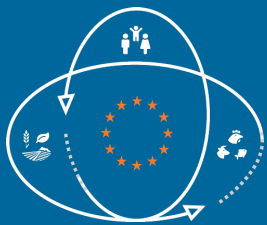
Results/Outcomes/impact

Outcomes and expected impact of JRP

- Surveillance
  - Sampling techniques, assessment of surveillance, syndromic surveillance, recommendations.
- Laboratory techniques, incl. reference material
  - Metagenomics, bioinformatics, microarray, on-site / Point-of-Incidence (LAMP, ONT, etc.), ELISA and serological tests, mass-spectrophotometry
- Data bases & data analysis, interpretation of data
  - Samples and strains, sequences, MALDI-ToF, modelling
  - Exposure (and food purchase data)
- Cross-sector communication
  - Source attribution
- Action (prevention, response)
 - Pre- & probiotics, biosecurity

Examples of results from JIP

- The One Health-EpiCap tool, designed to characterize and assess surveillance capacities and capabilities, which contribute directly to One Health surveillance; guidelines to set up OH surveillance (JIP MATRIX).

  - Pillars: Organization – Operational activities – Impact

- The One Health LabCap survey of human clinical, food, feed, veterinary and environmental microbiology laboratories to assess their current capabilities, capacities, interoperability, and adaptability (JIP OH-HARMONY-CAP).

- A large collection of well-characterised reference strains of food-borne pathogens (>2500 strains), guidance on cross-sectorial proficiency tests/external quality assurance, and a guide for accessing relevant data and models for quantitative microbial risk assessment (JIP CARE, many JRP).

DESIGN AND IMPLEMENTATION OF SURVEILLANCE ACTIVITIES — LABORATORY METHODS — REFERENCE MATERIALS AND DATA — INTERPRETATION OF SURVEILLANCE DATA — CROSS-SECTOR COMMUNICATION OF DATA — ACTION (PREVENTION AND RESPONSE)

Examples of results from JIPs

The OHS Codex

- The One Health Surveillance Codex to support the implementation of One Health, specifically the integration of surveillance data; it encompasses tools to enhance cross-sector collaboration (incl. OHEJP Glossary), knowledge exchange, data interoperability and dissemination of outcomes (JIP ORION).

- The One Health Risk Analysis System for signalling, assessing and controlling zoonoses in European countries; IT tools including the Decision Support Tool for risk assessment, the COHESIVE Information System, the FoodChain-Lab web application, and the web-based tool Shiny Rrisk (JIP COHESIVE).

- The One Health EJP Simulation exercise.
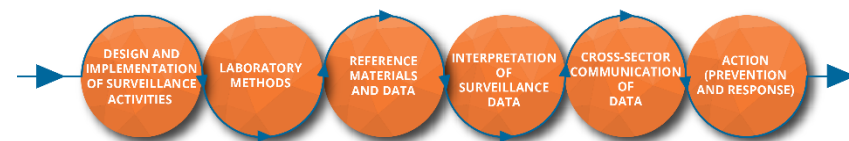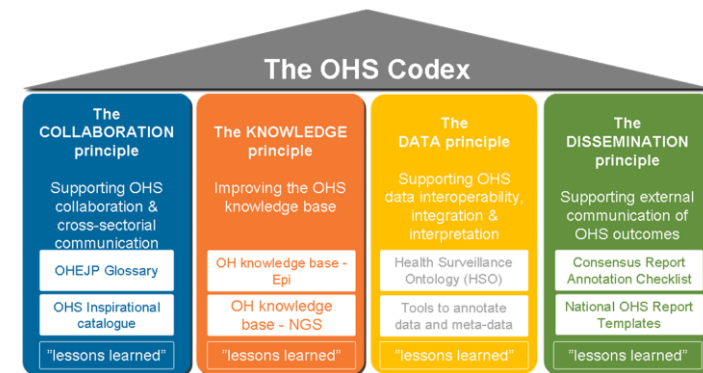
See www.OneHealthEJP.eu: results and outcomes per project.

D7.1: main outcomes

| JOINT INTEGRATIVE PROJECTS (JIP)	INTEGRATIVE STRATEGIC ACTIVITIES	JOINT RESEARCH PROJECTS (JRP)		
		FOODBORNE ZOONOSES	**ANTIMICROBIAL RESISTANCE (AMR)**	**EMERGING THREATS**
MATRIX: solutions to support and advance One Health surveillance	Design and implementation of surveillance activities	AIR-SAMPLE: air filters to detect *Campylobacter* in broiler houses		
COHESIVE: pathway analysis of detection of outbreaks		NOVA: code to model disease spread and explore disease surveillance options		
OH-HARMONY-CAP: diagnostics, laboratories capabilities, capacities and interoperability collection tool	Laboratory methods	METASTAVA: Guidelines for sequence based metagenomics disease surveillance	IMPART: updated and improved detection protocols multicentre evaluation study results. New ECOFFs of veterinary antibiotics	Tox-Detect: database of protein profiles of foodborne toxogenic bacteria
		TOXOSOURCES: Harmonized Methods for detecting *Toxoplasma gondii* contamination in fresh produce	FARMED: Detection and Characterisation of unauthorised genetically modified microorganisms	MAD-Vir: Tool to detect known viruses and discover new viruses
			WORLDCOM: predict/detect AMR from microbial samples and genomic sequences	TELE-Vir: portable toolbox for identification and characterisation of emerging virus threats
			MedVetKlebs: The ZKIR Assay, a Real-Time PCR method for the detection of *Klebsiella pneumoniae* in environmental samples	IDEMBRU: toolbox for rapid detection identification of emerging *Brucella* species
				MEmE: detection tools standardisation and data collection tools on *Echinococcus multilocularis/granulosus* in the food chain
				PARADISE: novel genotyping schemes and detection strategies for *Cryptosporidium* and *Giardia* detection
CARE: database of strains and genomes for quality control analysis in food safety	Reference material and data	LISTADAPT: Algorithm for selecting strains to explore the diversity of strains circulating	ARDIG: collection of large number of genomes that can be used as reference material for AMR confirmation	
ORION: framework for understanding and information exchange - One Health Surveillance Codex	Interpretation of surveillance data	ADONIS: decision making tool to determine causes and best interventions in human *S. Enteritidis* infections	ARDIG: Comparibility between antimicrobial usage and AMR data to improve AMR surveillance	
COVRIN: models for risk assessment of SARS-CoV-2		BeONE: interactive dashboard for foodborne pathogens surveillance	FULL-FORCE: data on plasmid structure and variability of drug resistant organisms	
COHESIVE: information system that stores genomics data and metadata of pathogens from different countries (demo)		DISCoVeR: models and methods for attributing human foodborne infections to animal, food and environment sources		
		TOXOSOURCES: methods to evaluate the relative contribution of different sources of *Toxoplasma gondii* infections		
		MedVetKlebs: Multicentric Study of *Klebsiella pneumoniae* in European food products		
COHESIVE: Risk Analysis System for zoonoses; FoodChain-Lab web application to trace suspicious food items; quantitative shiny Rrisk application assessment toolbox; risk assessment Decision Support Tool	Cross-sector communication of data	BIOPIGEE: education and training activities	FULL-FORCE: tool box for Single Molecule Real Time sequencing for AMR surveillance	
		NOVA: mathematic models for data combination and analysis for One Health syndromic surveillance systems	FED-AMR: new data on the role of extracellular DNA as an AMR source and on AMR spread in agricultural environment	
ORION: solutions for interoperability to improve data FAIRness - OHEIP Glossary, One Health Linked Data Toolbox, Health Surveillance Ontology			RaDAR: modeling methodology for AMR specific source attribution, disease burden	
COHESIVE: review on economic Economic Analysis of Foodborne Zoonoses	Action (prevention and response)	MoMIR-PPC: Prevention & Control Measures against *Salmonella* at the poultry production level		
		BIOPIGEE: biosecurity measures for the control of *Salmonella* and HEV in primary pig production and abattoir		

one HEALTHEJP

One Health EJP Outcome Inventory (OHOI)

Public database of **scientific** and **integrative outcomes**:

https://onehealthejp.eu/outcome-inventory/

- databases, strain collections, tools and other scientific outputs (computational model, excel plugin, workflow, software, hardware, novel detection method etc)

- facilitates communication by providing contact information

Main features

- Open access
- Easy to use: search by keywords
- Regular updates
- Entries validated by projects coordinators
- Important for impact
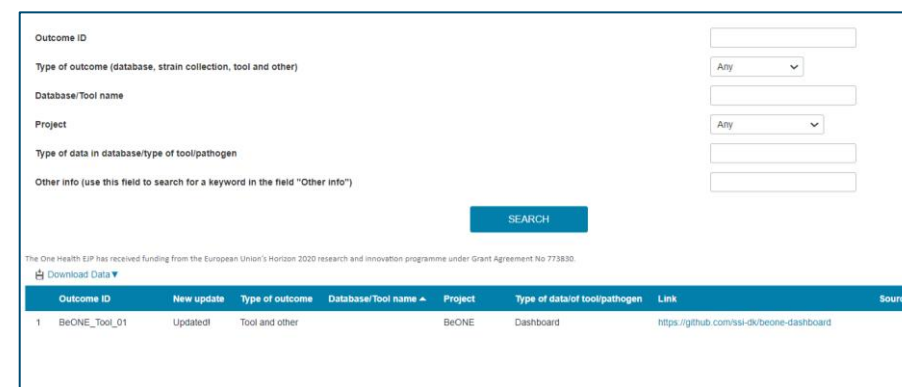
Take home message

- The One Health EJP has produced outputs in response to identified gaps.

- Results are available, open access.

- Many dissemination efforts for uptake of results are carried out e.g.

  - Impact brochures

  - Dissemination workshops

  - Stakeholder conference, 19 to 21 June in Brussels.

  - Today's meeting for EFSA's Advisory Forum.

  - Bilateral discussions with key stakeholders (EU agencies, Policy DGs, JRC) are planned.

WE CANNOT GO ANY FURTHER IF THE MEMBER STATES DO NOT ACT NOW

And now what? The future

Inventing a European One Health Consortium

- The One Health EJP partners and stakeholders agree that there is a need for a comprehensive and stable One Health network of public institutions involving all of Europe and all the One Health domains: public health, animal health and the environment; at present such a network does not exist.

- The OneHealth EJP has prepared the One Health SRIA, a Strategic Research and Innovation Agenda intended to:

  - Guide the One Health aspects of the current Horizon Europe partnerships.

  - Help define the scope of a next large-scale project being step 3 of the One Health in food safety adventure.

- MedVetNet Association

Inventing a European One Health Consortium

- **EU funding opportunities in course of second half of Horizon Europe.**
  - CSA to continue dissemination of One Health EJP and prepare the perimeter of a next large-scale project (proposition circulating among Programme Committee members of OHEJP participating countries).
  - A partnership encompassing a broader One health approach (deeper addressing the environment and humanities sciences).

- **Financial support from stakeholders**
  - In course of discussion through bilateral discussions.
  - Outputs will be delivered at the final meeting of the One Health EJP, 11-12 September, in Paris.

- **Back to** MED·VET·NET ASSOCIATION

Take home message

- One Health EJP will end in September '23.

- Efforts to find EU resources for the future will continue.

- The MedVetNet Association will provide a home for the outcome and tools of the One Health EJP.

  - These outcomes & tools are available to the authorities to implement One Health.

- MS struggle to secure resources to implement One Health.

- Can the Advisory Forum – helped by the Focal Point network - support the implementation of One Health in the countries?

Thank you for your attention!

Arnaud.CALLEGARI@anses.fr, and
Hein.Imberechts@sciensano.be

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