The MATRIX project: connecting dimensions in One Health surveillance One Health European Joint Programme

BRIEFING NOTES TO STAKEHOLDERS

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This note aims to brief key contacts among MATRIX stakeholders regarding the project's advancements
Last update: 30/06/2022

What is MATRIX?

MATRIX is a project of the One Health European Joint Programme (OHEJP), a partnership of 44 food, veterinary and medical laboratories and institutes across Europe and the Med-Vet-Net Association.

MATRIX connects existing cross-sectorial One Health programmes in European countries. Today, 19 partner institutes representing the animal health, public health and food safety sectors from 12 countries continue a collaboration that started early in 2020 and will end in December 2022. More information can be found here.

The purpose of MATRIX is to create practical solutions for European countries to support and to advance the implementation of One Health Surveillance. These solutions are currently under development and will be finalized for release by the end of 2022. MATRIX invites European institutes working in the animal health, public health and food safety sectors to consider the opportunity to adopt these solutions and to further build upon them.

MATRIX partners are currently promoting these solutions in their own country networks. Throughout 2022, MATRIX also organizes a series of webinars called *Solutions for One Health Surveillance in Europe.* The objective of the webinars is to present the solutions that are being developed by MATRIX to support and advance the implementation of One Health Surveillance in European countries. During the webinars, participants will learn about the solutions, their intended use and current status of implementation. Participants will also have the opportunity to directly influence the ongoing refinement of the solutions by sharing their own experiences and needs associated with One Health Surveillance.

What are the MATRIX hazards?

MATRIX ensures that the developed solutions are relevant to the surveillance of specific hazards. The hazards of interest were chosen based on the operational priorities of MATRIX partner institutes and their One Health relevance. They are *Listeria*, *Salmonella*, *Campylobacter* and emerging threats, including antimicrobial resistance. In 2022, MATRIX will also disseminate the lessons learnt from the work done in relation to the aforementioned hazards.

What solutions does MATRIX offer?

The development of the MATRIX Solutions for One Health Surveillance is ongoing and the following information is possibly subject to change.
Before further dissemination of the following information,
please, contact MATRIX project leader Guido Benedetti (gube@ssi.dk)
and/or the relevant contacts below

OH-EpiCap Tool

This is an interactive, stand-alone tool to evaluate the capacities and capabilities for the One Health Surveillance of a specific sector and/or pathogen of choice. Additionally, the tool allows the benchmarking of surveillance capacities and capabilities for comparison i) with other countries for the same hazard; ii) between specific hazards within one country.

The tool addresses the need for evaluating strengths and weaknesses of multi-sectoral surveillance systems and identifying opportunities for further integration. The tool evaluates 3 dimensions:

- Organization of One Health (formalization, coverage / transdisciplinary, resources, evaluation and resilience)
- One Health in operational activities (data collection / methods sharing; data sharing; data analysis and interpretation; communication)
- Impact of One Health (technical outputs, collaborative added values, immediate and intermediate outcomes, ultimate outcomes)

More information about the OH-EpiCap tool is available here.

Status of implementation: the tool is currently being piloted with a beta version of the online tool disseminated mid-2022.

Leading partners: Agency for Food, Environmental and Occupational Health & Safety, France (ANSES) and University of Surrey, United Kingdom (UoS). Contact: Viviane Henaux (Viviane.HENAUX@anses.fr) and Joaquin Prada (j.prada@surrey.ac.uk)

Roadmap to develop national One Health Surveillance

This is a guideline that countries can use to develop One Health Surveillance according to their needs and resources. Countries can use it both to build a new One Health Surveillance system or to advance an existing one.

The roadmap expands the work of the OHEJP COHESIVE project. More information about the OHEJP COHESIVE project and roadmap is available here. The roadmap provides step by step instructions on how to work through its different parts. The roadmap also addresses barriers and facilitators between One Health Surveillance sectors, based on the findings of a requirement analysis that is available here.

Status of implementation: the roadmap is currently under development and is expected to be available late 2022.

Leading partner: National Veterinary Institute, Sweden (SVA). Contact: Mia Holmberg (mia.holmberg@sva.se) and Estelle Ågren (estelle.agren@sva.se)

Manual for One Health Surveillance Dashboards

This is an online dashboard inventory and practical manual to facilitate the design and implementation of One Health Surveillance dashboards using open source tools. More information is available at the Dashboard Information Centre here.

The Dashboard Information Centre is a "living document" that contains an inventory of planned, ongoing and finished dashboard projects, a practical manual and a best practice guide to the development of One Health Surveillance dashboards. It covers the following topics: i) information context and end-user considerations; ii) technical and legal barriers associated with cross sector data sharing; iii) the pitfalls and biases of co-analysing One Health data; iv) the selection of the most suitable technical implementation. It is meant to be used as a "companion" when planning or developing a dashboard.

Status of implementation: the Dashboard Information Centre is currently under development and is expected to be available late 2022.

Leading partners: National Veterinary Institute, Sweden (SVA) & Norwegian Institute of Public Health, Norway (NIPH). Contact: Wiktor Gustafsson (wiktor.gustafsson@sva.se) and Gry Marysol Groneng (GryMarysol.Groneng@fhi.no)

Interactive guide to developing multi-sectoral surveillance systems

This interactive tool is a guide to facilitate the development of multi-sectoral (One Health) surveillance frameworks from existing animal health, public health and food safety surveillance systems. The guide provides a step-wise approach to developing such multi-sectoral surveillance frameworks, drawing upon both theoretical learnings and practical expertise/experiences.

The guide outlines 7 steps towards integrating sectoral surveillance systems: i) establish a working group; ii) identify and engage stakeholders; iii) define the objectives / purpose of the integrated system; iv) map the available data; v) determine the point in the process where data could be shared; vi) design and implement the system; vii) evaluate the system.

This work builds upon a report describing the commonalities and differences between operational frameworks in animal health, public health and food safety. The report is available here.

Status of implementation: the tool is currently under development and is expected to be available late 2022.

Leading partner: Friedrich-Loeffler-Institut, Germany (FLI). Contact: Johanna Dups-bergmann (Johanna.Dups-Bergmann@fli.de) and Carola Sauter-Louis (Carola.Sauter-Louis@fli.de)

Best practices to operationalize cross-sectorial collaborations

This solution provides practices to operationalize cross-sectorial collaborations with a focus on data collection, data sharing, data analysis, and the dissemination of surveillance results. It is a guideline to the practical implementation of collaboration between the animal health, public health and food safety sectors according to different surveillance purposes: i) measuring the levels and temporal trends of exposure and burden of disease; ii) supporting early detection and response to outbreaks; iii) identifying risk factors to implement control measures.

This work builds upon a report about the mapping of surveillance chains and cross-sectorial linkages for different hazards. The report is available here.

Status of implementation: the guideline is currently under development and is expected to be available late 2022.

Leading partner: Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise, Italy (IZSAM). Contact: Francesca Cito (f.cito@izs.it) and Laura Amato (l.amato@izs.it)

A guide to design, implement, and evaluate official controls within the food sector using output-based standards

This is a non-prescriptive guideline for countries, a loose framework to work around the aspects of output-based standards for surveillance in the food sector. The guideline maps out the process, considerations, evaluation strategies etc. depending on what the aims of surveillance are.

It can be used i) to assess the current sensitivity of surveillance; ii) to reduce sampling numbers; iii) to implement risk based surveillance; iv) to identify a method to analyse a current surveillance system to ensure it is fit for purpose.

Status of implementation: the guideline is currently under development and is expected to be available late 2022.

Leading partners: Animal and Plant Health Agency, United Kingdom (APHA) & National Veterinary Research Institute, Poland (PIWET). Contact: Verity Horigan (verity.horigan@apha.gov.uk) and Maciej.Kochanowski (maciej.kochanowski@piwet.pulawy.pl)

Additional resources

MATRIX also promotes and expands the following initiative:

The One Health Surveillance CODEX: The Knowledge Integration Platform (OHS Codex/KIP) – this is a community resource supporting the adoption of the OH paradigm. The OHS Codex/KIP comprises five high-level "action principles", which respectively support: i) planning and management; ii) collaboration; iii) knowledge exchange; iv) data interoperability; v) reporting and dissemination. These principles are applicable to any sector-specific or cross sectorial surveillance activity.

Under each of these principles, the OHS Codex/KIP provides the users a collection of resources (e.g. tools, technical resources, guidance documents and experiences) that address specific OH-problems in the context of the corresponding principle. As an open community framework, it is continuously updated by and for the community. More information is available here.

Leading partner: German Federal Institute for Risk Assessment (BfR). Contact: Matthias Filter (Matthias.Filter@bfr.bund.de)

MATRIX also promotes and expands the following initiative:

Food Safety Knowledge Exchange (FSKX) Format – this is a standardized file format maintained by the RAKIP Initiative that supports the One Health community in sharing and re-using mathematical models as well as data analysis procedures. The FSKX format allows to share relevant data, metadata and model scripts in a machine-readable and ready-to-use format. More information here.

Recent related publications:

- Sundermann EM, Nauta M, Swart A (2021). A ready-to-use dose-response model of Campylobacter jejuni implemented in the FSKX-standard. Food Modelling Journal 2: e63309. DOIreference: https://doi.org/10.3897/fmj.2.63309

- Sundermann EM, Correia Carreira G, Käsbohrer A (2021). A FSKX compliant source attribution model for salmonellosis and a look at its major hidden pitfalls. Food Modelling Journal 2: e70008. DOI reference: https://doi.org/10.3897/fmj.2.70008

Leading partner: German Federal Institute for Risk Assessment (BfR). Contact: Matthias Filter (Matthias.Filter@bfr.bund.de)

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