



D5.4 Report on a capacity map and indicators developed

WP5 Science to policy translation to stakeholders

Responsible Partner: BfR

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1. Summary

This report describes the development of the concept for the capacity map of the One Health European Joint Programming (One Health EJP), depicting expertise, capacities, infrastructures, equipment and technical resources within the consortium and beyond, to support the quick identification of teams which could respond to specific needs of stakeholders. The capacity map will complement the expert databases of the EU and international stakeholders. Several inventories were identified or prepared to provide an overview of existing databases and systems, which help to avoid redundancy and to depict complementarity. Activities in the ongoing and future Joint Integrative Activities (JIAs) and Joint Research Projects (JRPs) were identified where outcomes should be depicted in the capacity map. This overview will highlight the increasing capacity built by the One Health EJP to collaboratively address issues in the fields of zoonoses and antimicrobial resistance and the links to other resources, thus contributing to make best use of them and to avoid duplication of work. To feed the capacity map, the outcome from JIAs and JRPs is regularly summarized and presented to the stakeholders through the capacity map in an easy to access form. This task will be conducted in close interaction with the Joint Research Projects and Joint Integrative Projects coordinated within WP3 and WP4 where inventories on data, methods and tools as well as a common platform for interaction and exchange will be established.

The capacity map of WP5 will

- Include the development of indicators for the level of research capacity and for preparedness in the One Health domain;
- Act as a means by which the One Health EJP can address needs expressed by the stakeholders;
- Act as a means by which the One Health EJP disseminates information to the stakeholders.

The overall dissemination strategy of WP5 is described in Deliverable 5.5.

2. Introduction

Following a One Health approach, the One Health EJP aims to create a sustainable European One Health framework by integration and alignment of medical, veterinary, and food institutes through joint programming of research agendas matching the needs of European and national policy makers and stakeholders.

One of the specific objectives of One Health EJP is to exchange and communicate with national and international stakeholders and in particular the European Centre for Disease Control and Prevention



(ECDC) and the European Food Safety Authority (EFSA). Stakeholder liaison actions include developing and maintaining contact with ECDC and EFSA to ensure that the overall objectives of the One Health EJP consortium are in accordance with the overarching policies of the respective agencies in relation to foodborne zoonoses, antimicrobial resistance, and emerging threats.

Work package 5 (WP5) of One Health EJP entitled ‘Science to policy translation to stakeholders’ is active during the whole length of One Health EJP (2018–2022, 60 months). The Lead Beneficiary is Federal Institute for Risk Assessment (BfR) and the Deputy Lead Beneficiary is Statens Serum Institut (SSI). The work of WP5 focuses on the Key EU stakeholders ECDC, EFSA and European Commission as well as National Stakeholders (D5.1). The main aim is to identify and address the research and integrative needs that are knowledge gaps that, when filled/bridged, have the highest value for informing decision-making and risk management in EU. A further aim is to avoid overlapping work on topics that are already being addressed in other activities. The stakeholders are actively involved as informants and engaged at the most relevant stages during the One Health EJP; the dialogue is maintained actively throughout the duration of One Health EJP.

WP5 collaborates closely with WP3 and WP4 to link the scientific capacity available in the consortium with the activities to close identified needs and knowledge gaps and with WP1 to ensure efficient communication and dissemination to stakeholders. This will contribute to making best use of previous and ongoing research and development in the One Health EJP by national, EU and international stakeholders. An inventory list on similar research activities and platforms outside of the EJP consortium has already been established by WP 2, depicting recent and on-going EU projects.

To develop the concept for the capacity map, a rough overview was prepared, describing the expertise, capacities, infrastructures, equipments and technical resources within the consortium. Among other tasks, this map aims to ease the identification of teams or experts in an institution of consortium members should a certain need arise, especially regarding the domains of One Health in the European Union. Furthermore, the capacity map is an instrument to reflect the achievements of the One Health EJP.

3. Objectives

The overall objectives of preparing a capacity map are:

- To support transparency on the growing One Health expertise in the consortium and its integration;
- To support future synergistic collaborations;
- To prepare for emergencies and emerging threats;
- To identify gaps and areas of expertise;
- To support linkage with similar expertise.



The capacity map will be one of the activities which will reflect the overall integrative objectives: accessibility, alignment, capacity building, and sustainability.

4. Approach for initial steps

4.1 Working principle

To collect the information for the capacity map, gathering information by questionnaire is avoided as this would comprise additional workload for the participants and slow feedback would be expected. The information for the initial step was gathered through WP5 team by scouring available documents and public sites. This information is used to frame a common exchange platform. In the next steps, the draft content of the capacity map can be enlarged and validated by targeted communication with consortium members and feedback received by potential users.

Within the reporting requirements for all JIPs and JRPs, a procedure to provide information on integrative activities is being established which can be used as information source for the capacity map to ensure up to date information.

All projects and partners within the One Health EJP will be encouraged to use this platform to describe their approaches, skills, tools etc. and include links to their specific activities. This will increase transparency and complementarity of the approaches, and usability of the outcomes.

The capacity map will provide a link to the inventories of WP2 and WP7 on other research activities and platforms outside of the One Health EJP consortium.

The information presented in the capacity map will be carefully collated, analysed and displayed in an easy-to-access form. This map should enable the easy identification of knowledge gaps and support networking within the consortium.

4.2 Preliminary information sources

The formation of the capacity map started with the description of the expertise within the consortium, their capacities, infrastructure, equipment and technical resources.

Information collated for the initial stage of the capacity map came from different sources. Among them was the background information provided in annex 1 section 4-5 of the One Health EJP final proposal. There, information on capacities and technical resources available in each member institution was provided. The webpages of respective consortium partners provided additional information. The summary of this describes in an easy to access way the network established with the One Health EJP with a focus on One Health.

To ensure complementarity and to avoid duplication of work, the first step included the screening for stakeholders' existing documents and databases regarding the domains of One Health EJP



(foodborne zoonosis, antimicrobial resistance and emerging threats). This information was summarized in a comprehensive table. Apart of avoiding redundancy, this list showed where there were still needs or gaps of knowledge in the domains. Supported by the capacity map, these needs and gaps can be identified and completion considered within the consortium.

Within the two rounds of JIPs and JRPs, several inventories, databases and other integrative activities are developed. These might be identified from project descriptions, annual reports or communications with the project leaders and highlighted in the capacity map. When finalised, links to the documents and resources can be integrated in the capacity map.

Alignment of activities, avoiding duplication of work and ensuring complementarity within the consortium and with key EU stakeholders have been highlighted several times as extremely important. Therefore, it might be considered to depict in the capacity map activities outside of the One Health EJP. More specifically, capacities already established within the European Union might be depicted when considered relevant. For example, the European Commission, EFSA and ECDC hold public databases of experts, reference laboratories of European and national level, run networks and provide reports which could be referenced in the capacity map.

4.3 Options for implementation

As regards implementation, the information collected should be structured in a way that allows search for different terms and quick identification of the information of interest. Thus, it might be allocated to broad terms with several subheadings only, and the technical implementation should support search functions to ensure maximal flexibility in using it.

The capacity map should be implemented as an electronic tool, embedded in One Health EJP website. The capacity map should be flexible, easily accessible, and expandable, to support continuous growth. Indicators should reflect the level of capacities and preparedness.

In the beginning, the capacity map will be implemented in the inner part of the website. At later stage, validated information might be presented on the public part of the website.

In close collaboration with WP7, opportunities for continuous use, update and thus sustainability of the capacity map should be assessed. Important will be that the information provided is of added value for the stakeholders.

5. Content of the capacity map

Capacity in general terms refers to the ability to perform something at a certain time point. Capacity in this context is understood as the ability of the institutes in the consortium to perform certain scientific tasks, which will include the necessary infrastructure, expertise, laboratory capacity, trained work force, state-of-the art technology, preparedness, means for communication of scientific and technical knowledge to raise awareness, financial resources, monitoring, surveillance, response and control strategies as well as extra capacities in emergencies. As not all these issues can be



addressed within this task in depth, focus will be laid on the outcomes of activities within the consortium and those directly linked to this.

The capacity map can be seen as an important instrument that provides an overview of current activities in the One Health EJP5 on zoonoses, antimicrobial resistance and emerging threats in Europe. The lists of experts, capacities and technical resources available in the participating consortium members show the level of readiness in fighting foodborne zoonosis, antimicrobial resistance and the emerging zoonosis. Some options which might be covered are described in the following sections.

5.1 Technical resources

Among the infrastructures available within the consortium, experimental facilities are an important element. An overview could comprise information on e.g. availability of laboratories (e.g. including information on biosecurity level like BSL2, BSL3), laboratory equipment, animal housing, animal care facilities, infectious disease units / high containment facilities and experimental facilities.

5.2 Databases

Within the One Health EJP a broad range of information is collected and information stored in databases is diverse. Depending on the agent, disease or method under consideration, this could cover several areas of information, e.g. data on prevalence / incidence in specific populations, typing data, phenotypic data on antimicrobial resistance, molecular data, data on antimicrobial use, information on food consumption (volume, pattern), populations (size, composition), trade / animal movement / travelling or wildlife populations.

5.3 Repositories and collections

Within the One Health EJP a broad range of strain collections are available. Quite frequently, in the beginning of an activity, an inventory on the materials available is prepared where future research can be built on. During the lifetime of the project, these collections might be complemented or information added. Depending on the agent, disease or method under consideration, this could cover information on strains / reference strains, materials / reference materials or cell lines.

5.4 Tools and procedures

Within the One Health EJP a broad range of tools and procedures are available. Besides the identification of available tools for the specific purpose it might be challenging to get hold of it in a way that it can be used in another working environment. The summarized information will provide an overview on whether there is already an interesting solution, and whom to contact to figure out whether this solution is already applicable for the purpose of the specific situation. Continuous update of the information stored would reflect the work performed in the JRPs and JIPs of the One Health EJP. Areas which might be covered are:



- Software / tools / guidelines / procedures (finding the right tool for the specific situation)
- Data analysis / outbreak detection
- Pipelines for Next Generation Sequencing (NGS)
- Modelling tools (e.g. tools for risk assessment, transmission studies, source attribution, exposure assessment)
- Tracing tools (foods, animal movement)
- Disease burden assessment tools
- Decision tools
- Early detection toolkit / early warning tools
- Horizon scanning procedures

5.5 Skills

Interdisciplinarity is very important to cope with current problems. A broad range of methods are used to tackle the issues. A first list might summarise areas people may be working on and have acquired specific skills. Activities run within the consortium, e.g. in workshops, summer schools, training activities, short term missions could be reflected within this overview.

Information could be collected on different fields, e.g.

- Preparedness / detection / response
- Early detection / signaling
- Modelling (transmission, source attribution, exposure assessment)
- Tracing / network analysis
- Machine learning
- Outbreak detection routines
- Risk assessment
- Disease burden
- Assessment of mitigation strategies



5.6 Monitoring and surveillance

Following legislation on national level or European Union, different approaches for running surveys or a continuous monitoring and surveillance programme are in place. Further needs are identified and approaches / solutions developed. It might be useful to share outcomes of work which has already been performed to support better understanding between disciplines as well as further harmonisation and standardisation. This topic may cover:

- surveys, monitoring and surveillance approaches (e.g. protocols, data models, sampling procedures, storage and transport of samples);
- implemented systems for monitoring or surveillance (and the legislation behind it) for different agents / diseases covered and the reports out of it;
- integration of molecular typing into monitoring / surveillance protocols;
- data quality assessment protocols.

5.7 Laboratory methods

A broad range of EN/ISO-methods are available and used for detection in routine monitoring and surveillance. For some agents these methods are missing, similarly for typing methods and methods for further characterisation. As regards detection of emerging threats, usually work has to start from the scratch. Thus, standardisation of detection and typing methods is ongoing and a reflection of the current situation may be beneficial.

National and European Union Reference Laboratories are nominated for a range of agents in the veterinary field, and the links should be depicted. Similar approaches are in place on the human side. In addition, activities of WHO, FAO and OIE should be reflected.

Within the One Health EJP, several activities are started to improve and complement existing laboratory methods. It might be valuable, to provide an overview on existing methods for selected agents and toxins, as well as for which matrices these methods are applicable. Besides that, also information on quality assessment schemes and proficiency testing procedures might be shared among partners. The overview could summarize the following aspects:

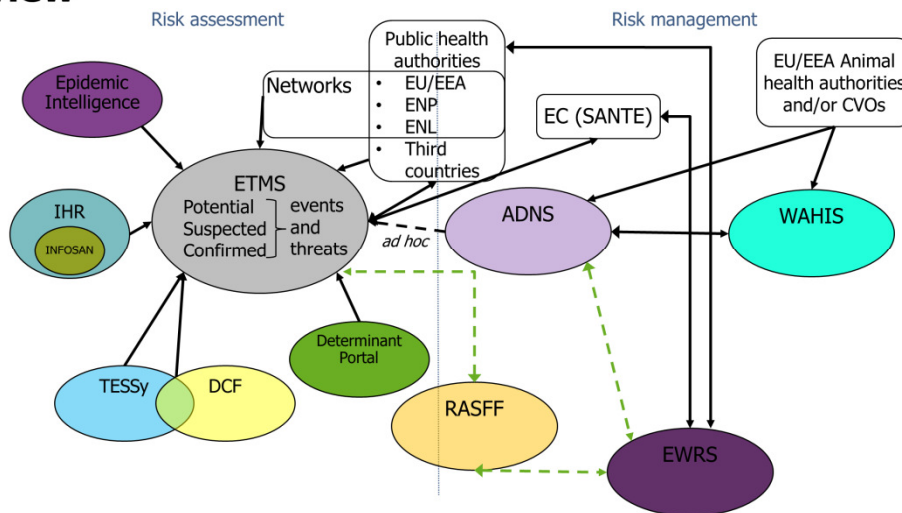
- the agent (bacteria, viruses, parasites) / toxins;
- taking into account the matrix type (human, food, animals, feed, environment);
- the purpose (detection, isolation, quantification, typing, characterisation);
- quality assessment schemes / proficiency testing;
- standard operating procedures for specific tasks / methods;
- procedures for evaluation of methods.

5.8 Networks

Within the European Union, several networks are established to fulfil legal requirements as well as to support action. Whereas usually people are quite familiar with networks within their domain, understanding of the broad picture still needs further developed. An overview on the different networks, their type of implementation as well as main tasks and representatives might increase common understanding and collaboration.

The list of networks to be described might be started with a few essential ones and developed where interests occur. A first overview might be complemented by descriptions prepared by others (e.g. the zoonoses reporting system; the system for finding and assessing public health threats as presented by Karin Johansson, expert Molecular Surveillance for Communicable Diseases, ECDC, in a presentation during an EJP workshop). The Figure below gives an example for such a very comprehensive overview. In this chart the collaboration between the systems in the public health and veterinary public health field is depicted.

Finding and assessing public health threats: A system overview



Source: Presentation by Karin Johansson, ECDC, during COHESIVE workshop

- International Health Regulation (IHR)/International Network of Food Safety Authorities (INFOSAN): Confirmed threats to human health, run by WHO;
- TESSy: Indicator-based data collection on human disease, includes typing data, run by ECDC;



- Data Collection Framework (DCF): Indicator-based data collection on zoonotic agents and antimicrobial resistance in animals and foods, run by EFSA; includes ECDC-EFSA joint typing database;
- Determinant Portal: Examples: Vector data, Sea temp data, Climate conditions, Flight data; Indicator-based, run by ECDC;
- Rapid Alert System for Food and Feed (RASFF): Information on confirmed food/feed contaminations in the context of trade/imports, run by SANTE.G5;
- Animal Disease Notification system (ADNS): Confirmed cases of notifiable animal diseases, run by SANTE.G3;
- World Animal Health Information System (WAHIS): Confirmed cases of notifiable animal diseases, run by OIE;
- Early Warning and Response System (EWRS): Confirmed public health threats, run by SANTE.C3.

5.9 Specific approaches

Combination of different resources as well as application of skills and tools is necessary to deal with specific issues. A collection of approaches might help to share information, to exchange on it and to ensure complementarity. Summaries from ongoing activities on some of the following activities might be of interest:

- Preparedness / emerging issues
 - Horizon scanning procedures / signaling
 - Decision trees / assessment procedures
 - Epidemic intelligence systems
 - Response / controlling approaches (take action)
- Outbreak detection and management (EU level / national level)
 - Implemented systems
 - Guidelines / procedures
- Risk assessment
 - WHO: Codex Alimentarius
 - Antimicrobial risk assessment
 - Foodborne zoonoses



- EFSA:
 - Prometheus
 - EFSA Panels (BIOHAZ, AHAW)
- ECDC:
 - Rapid risk assessment

5.10 Education and training

Within the One Health EJP, several activities are ongoing or under development to share knowledge. An overview on available training courses as well as training materials as well as E-Learning courses might be helpful to disseminate this further and avoid duplication of work.

6. Indicators

6.1 First indicators

Among the tasks is also to develop indicators to assess the development of the capacity within the consortium as well as to measure the usefulness of the capacity map.

To reflect the increased capacity within the consortium, the topics covered in the capacity map will be counted as well as the number of documents and information sources offered.

The feasibility of the approach will be assessed by the number of accesses to the website, as well as the feedback received within the consortium and from stakeholders. For the latter, a rough categorisation of the respondents will be implemented as to assess, whether the feedback is related to additional information to be provided in the capacity map, requests for additional information or clarification, or suggestions towards further development of the capacity map and the presentation of the information.

6.2 Additional indicators

After a first phase of implementation of the capacity map, additional indicators might be developed and implemented, to reflect additional aspects identified.

An tool might be developed to assess the capacities reflected in this map and to identify gaps in the capacities related to One Health preparedness.

At a later stage, a simulation exercise organised by WP4 might give further indication on the magnitude of the capacities developed within the consortium.



7. Input on the concept by stakeholders

7.1 Input from Scientific Committee

The concept for the capacity map was presented to the Scientific Committee Members during the meeting in December 6, 2018. Concerns were raised about ensuring useful complementarity and on how to keep the information up to date. It was recommended to keep the approach focused. A clear focus is considered necessary so that the added value can be achieved and demonstrated.

7.2 Input from JRP and JIP coordinators

JRP and JIP coordinators will be invited to validate the information extracted on their activities as well as to suggest additional information for presentation in the capacity map. They are also invited to present proposals on aspects which might be covered in the future. They may act as channels for their network of scientists which might be happy to give input.

7.3 Input from Partner Institutions

Partner institutions will be invited to give feedback on the content provided as well as their interest in the content. Suggestions for adjustments in the way of presentation as well as in the content will be analysed to develop the capacity map further.

7.4 Input from National and International Stakeholders (Risk managers)

As risk managers are important stakeholders, it is very important that they get the relevant information in time. The capacity map is considered a useful information source to support risk managers. After implementation of the first draft, they will be invited to have a look on it and provide comments. Depending on the feedback received within the consultation period, topics of highest interest will be identified where future work will be focused on.

8. Focus of the implementation of the capacity map

As described above, the capacity map may cover a huge range of information. Priorities have to be set to ensure feasibility and that most important issues are dealt with first. Taking into account recommendations from key EU stakeholders, capacities most relevant for One Health will be focused on.

- Preparing a list of **all integrative activities** under development in the projects (JRPs and JIPs) and describing how these can contribute to the One Health approach across sectors; the issues addressed will cover those already identified in the call texts and included in the full proposals of the JRPs and JIPs (e.g. capacity building, training, ring trials and tools for risk assessment; experimental facilities; detection and typing methods; strain collection,



reference material; digital infrastructure, databases; surveillance strategies; legal, policy aspects); providing a basis for work within WP7 including decisions on whether specific approach will be included in the sustainability plan or how sustainability can be addressed/achieved.

- Describing established data collection and analysis systems in each sector and across sectors (examples mentioned by ECDC: TESSy, DCF, EPIS / ETMS, EWRS, RASFF, Joint typing database); to identify strength and weaknesses of current systems and needs to bridge the gaps between the sectors;
- Analysing opportunities and limitations for cross-border data sharing and analysis; reflection on how ongoing and new activities build on, rather than duplicate existing cross-border activities and systems; prepare a SWOT analysis (together with WP7).
- Supporting approaches with shown proof-of-concept involvement of participants across sectors and assessing their practical use and added value for stakeholders;
- Supporting in collaboration with WP4 the organisation of cross-project meetings/workshops on common themes, e.g. on whole genome sequencing, infrastructures, data access and confidentiality to avoid duplication of work and overlapping activities, to develop a common understanding and to establish continuous collaboration.
- Developing a tool for Member States to perform a One Health preparedness assessment to identify possible gaps in One Health readiness;
- Contribute to the development of One Health recommendations describing which types of users should have access to certain systems to ensure One Health-enabled discussions (develop system access).

The impact of these activities for partners of the project consortia, national and EU stakeholders will be

- an improved understanding of established systems across domains and sectors,
- the reduction of the risk of duplication of existing systems for data collection, risk assessment and risk management;
- the development of useful additional, improved or broadened approaches of intersectoral collaboration and
- increased capacity to deal with ongoing or emerging risks.

9. Conclusions and next steps

During the first year of the initiative, a draft concept for the capacity map was developed which now needs to be implemented. Feasibility of different options needs to be considered during the



next steps as well as priority interests of partners and national and EU stakeholders. Overall, the capacity map should contribute to the achievement of the following objectives:

- To highlight how and when the outcome from activities within the EJP could be used to improve policy initiatives including risk management that addresses the protection of consumers health
- To support the alignment of the scientific capacity within the consortium with other similar activities in EC member states in collaboration with WP2, WP4 and WP6.
- Together with WP1, communicate the scientific evidence based data to the EU stakeholders, the international stakeholders (OIE, WHO, FAO) and within the Member States

In the second year a first version of the capacity map will be proposed considering the priorities of ECDC and EFSA and the information available in the JRPs and JIPs first annual reports. A first prototype will be proposed and published on the private space on the One Health EJP website. Subsequently, the Stakeholders Committee will be consulted again.

Overall, WP5 aims to enhance the visibility and the usefulness of this EJP among policy makers and EU agencies. The capacity and expertise of the consortium for research and preparedness in the field will be made transparent and further developed by integration of information on activities within the consortium and interaction/alignment with other consortia.



10. List of abbreviations

BfR	Federal Institute for Risk Assessment
D	Deliverable (e.g. D 5.1)
ECDC	European Centre for Disease Prevention and Control
EFSA	European Food Safety Authority
EJP	European Joint Programme
EU	European Union
FAO	Food and Agriculture Organization
JIP	Joint Integrative Project
JRP	Joint Research Project
OIE	Office International Epizootics
PMT	Project Management Team
SC	Stakeholders Committee
SSI	Statens Serum Institut
WP	Work Package
WHO	World Health Organization