



D4.6 Cogwheel Workshop 2

WP4 Joint integrative projects

Responsible Partner: SVA

Contributing partners: NVI



GENERAL INFORMATION

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Report from Cogwheel Workshop 2 One Health EJP / EFFORT



Introduction

In Work Package 4 (WP4) of the One Health European Joint Programme (OHEJP), EU initiatives that require strategic interaction with OHEJP are identified in collaboration with WP2 and WP5, to avoid redundancy and to further leverage the alignment at EU level. One of the instruments, so called cogwheel workshops (CW), are being organised by WP4 to allow key actors and relevant partners within the OHEJP, typically Project leaders or WP leaders within Joint Research Projects (JRP:s) or Joint Integrative Projects (JIP:s), to identify synergies, joint priorities and opportunities for collaboration. It is important to identify and collect (common) JRP and JIP needs before contacting the relevant EU initiative/project and to define if the initiative complies with these needs. Furthermore, it is important to see if the initiative can complement or assist the OHEJP, for instance with database/repositories, protocols, advice, practical collaboration (sequencing, bioinformatics, ...) and so on.

Eight CWs will be organised during the OHEJP. The reports from cogwheel workshops will be part of the input to the Strategic Research Agenda (SRA) of WP2, as well as the Strategic Research and Innovation Agenda (SRIA) of WP7.

The target for the second CW activity was the FP7-funded project EFFORT (<http://www.effort-against-amr.eu/>). EFFORT (Ecology from Farm to Fork Of microbial drug Resistance and Transmission) is a 60-month project aimed at studying the complex ecology of antimicrobial resistance and the complex interactions between bacterial communities, commensals and pathogens in animals, the food chain and the environment. The project is coordinated by Utrecht University, and ends in 2018, by the time of the 2nd internal call of the OHEJP. The CW will facilitate complementarity in OHEJP development and help identifying potential synergies at a stage when the OHEJP is starting and EFFORT is still active. Seven of EFFORT's partners are also beneficiaries in the OHEJP and contribute to the alignment.

Practicalities

- Information about the upcoming cogwheel workshop was sent to all OHEJP Project leaders on 7 September 2018. Information about EFFORT was included. In addition, representatives from OHEJP partners not yet participating in any of the JRP:s or JIP:s were also invited to join the cogwheel workshop.
- Seven OHEJP projects identified EFFORT as a relevant project to learn more about, to avoid duplication and/or to have potential for synergies with the OHEJP.
- The cogwheel workshop was held as a web meeting (Adobe Connect) on 26 October 2018. The agenda can be found in the annex.



Attendance list

Project	Representatives (institution)
ORION	Tasja Buschhardt (BfR), Wonhee Cha (SVA)
IMPART	Sophie Granier (Anses), Stefan Börjesson (SVA)
ARDIG	Muna Anjum (APHA), Nathaniel Storey (APHA), Octavio Mesa Varona (BfR) Ides Boone (RKI), Maria Getino (UoS)
RaDAR	Tine Hald (DTU), Sofia Duarte (DTU)
NOVA	Julio Alvarez (UCM)
MedVetKlebs	Francesco Pomilio (IZS)
WP3	Hein Imberechts (Sciensano)
WP4	Ann Lindberg (SVA), Solveig Sølverød Mo (NVI)
WP5	Annemarie Kaesbohrer (BfR)
EFFORT	Jaap Wagenaar (UU) Frank Møller Aarestrup (DTU), Katarina Stärk (SAFOSO), Dick Heederik (UU), Sofia Duarte (DTU), Philip Joosten (UG)
Others	Cécile Boland (Sciensano), Silvia García Soto (FLI), Christophe Nguyen-The (INRA), Kaye Burgess (TEAGASC), Geraldine Duffy (TEAGASC), Chiara Bracchi (IZS LER), Erika Scaltriti (IZS LER), Lurdes Clemente (INIAV), Ana Amaro (INIAV) Belen Goncales Santamarina (FLI), Steven Van Borm (Sciensano)

Output

All OHEJP projects interested in participating in the cogwheel workshop had the opportunity to do so. Also, representatives from OHEJP partners not participating in any of the JRP:s or JIP:s were invited to join. The relevant key elements in EFFORT, as identified by each OHEJP project, are listed below. The proposed action points from each project are listed in a separate summary table below.

Meeting summary, per project/WP/partner

OHEJP JRP	IMPART
	<ul style="list-style-type: none"> IMPART is dealing with improving phenotypic characterization of AMR which has not been part of any of EFFORTs work. As Jaap Wagenaar pointed out, link between EFFORT and IMPART is not in the science but in the people (teams) that have worked/will work on both projects

OHEJP JRP	ARDIG
	<ul style="list-style-type: none"> The EFFORT WP5 has collected several data on poultry and pigs in France, Spain, The Netherlands, Norway and Germany on AMU and AMR. These data are very valuable for WP1 ARDIG since they too are aim to collect such data on production animals.

OHEJP JRP	RaDAR
	<ul style="list-style-type: none"> <i>The RaDAR team did not provide any meeting summary.</i>

OHEJP JIP	ORION
	<ul style="list-style-type: none"> The performed project work should always be aligned to work that is performed in EFSA/ ECDC in order to avoid duplication and/or conflicts. To consider the sustainability of data/methods/tools early on in the course of the project (also considering the cost of maintenance).



- The statement of members from the EFFORT consortium that there is a need for guidelines regarding data collection and methods was noted. This is of high relevance, and fits well with the planned activities of ORION.

OHEJP PMT	WP3
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- EFFORT is mentioned in the call text of the EJP in WP 2017.

OHEJP PMT	WP4
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- Of the 20 partners involved in EFFORT, seven are also involved in OHEJP. This should facilitate carrying over experiences and insights from EFFORT to the OHEJP.
- A lot of the output from EFFORT is yet to be published and there are several ongoing PhD projects that are working on aspects related to the project. One take-home message is the importance of not underestimating the time taken to produce the data, with harmonisation of sampling protocols indicated as being the most time consuming.
- Although EFFORT was not funded under the current open research policy executed by H2020, they express willingness to share input as well as output; methods as well as data, given the appropriate agreements can be made.
- EFFORT is arranging its final conference by the end of November, where key messages to policy makers will be communicated. It would be desirable to have a rapporteur from the OHEJP at the conference.
- EFFORT has produced an interesting e-learning module on metagenomics applied to surveillance of pathogens and antimicrobial resistance. Available at <https://www.coursera.org/learn/metagenomics>
- DTU flags the need to be aware of maintenance costs associated with the infrastructural resources required for genomic-based surveillance.

OHEJP PMT	WP5
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- All elements of EFFORT are relevant as we have to build on their outcomes and possibly address open questions raised by them.

OHEJP partner	FLI (Belén González and Silvia García Soto)
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| Elements in EFFORT and OHEJP projects relevant for FLI | • WP2: To establish a pipeline for data storage and rapid analysis of WGS data. |
| | • WP3: Metagenomic analysis and characterization of mobile genetic elements. |
| | • WP4: Human and environmental resistance patterns as farm meta-data. |
| | • Integration of phenotypic, metagenomics and genetic data. |
| | • ARDIG: Dynamics of antibiotic resistance genes. |
| | • RADAR: Modeling methodology and systematic integration of data. |

OHEJP partner	Teagasc (Kaye Burgess)
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| Elements in EFFORT and OHEJP projects relevant for Teagasc | • Within Teagasc, elucidating the factors influencing AMR dissemination into the food chain are a key element of the research programme, both from animal health and public health perspectives. |
| | • During the workshop the EFFORT WP focusing on AMR in production systems in different countries was of particular relevance. |
| | • The synergies with EFFORT should be maximised in research going forward within the OHEJP; whilst ensuring there is not duplication in the research. |
| | • The volume of data coming through the metagenomics studies was noted. The samples collected and sequences obtained from them in any such projects are a valuable resource and, as such, future proofing should be considered by applying for permission for all feasible applications of the data. |



Summary table Action points

Project	Action points	Who, when
IMPART	<ul style="list-style-type: none"> Nothing so far 	
ARDIG	<ul style="list-style-type: none"> After getting in contact to Philip Joosten, he tells me that some publications using these data are under revision but he expects to be able to share the data soon. 	<ul style="list-style-type: none"> Octavio Mesa Varona
ORION	<ul style="list-style-type: none"> Contact Philip Joosten to discuss the limitations and problems that were encountered during data collection and subsequent data analysis. Contact project coordinator of EFFORT to ask about their strategies for data sustainability. 	<ul style="list-style-type: none"> Tasja Buschhardt, by the end of November
WP3	<ul style="list-style-type: none"> Cogwheel meetings encourage cooperation (and collaboration, even coordination), but the instruments to do so are not yet very clear. PMT should discuss this with REA <i>et al.</i> and should better define the criteria. Another objective is to avoid overlap; it is very useful to spread this message and to repeat it throughout the 39 OneHealth EJP beneficiaries. We should be present at the EFFORT closing conference (but it takes place at the same time as the COHESIVE meeting) 	
WP4	<ul style="list-style-type: none"> Disseminate information on training materials through WP6. Participation from OHEJP in final conference possible? Share gaps identified by EFFORT (and not covered by them) with WP2. 	<ul style="list-style-type: none"> Ann Lindberg, Dec 2018 PMT Nov 2018 Ann Lindberg, Nov 2018
WP5	<ul style="list-style-type: none"> Discuss with experts from EFFORT how to use their data and materials. They spent a lot of time to collect samples and do testing, but have limited time now to analyze them properly. So these data could/should be used also in OHEJP in the field of AMR. However, this needs clear statements from EFFORT on the availability of information. Protocols for sampling and preparation of samples developed within EFFORT should be made available to avoid overlap. We should ask them specifically for that. Experience collected in EFFORT related to needs for infrastructure should be collected as this could be an issue for our integrated activities. There is an E-Learning tool on metagenomics which should be made available for OHEJP partners. 	
FLI	<ul style="list-style-type: none"> Implement and validate bioinformatics pipelines for the analysis of Next-Generation-Sequencing based Whole Genome Sequencing (WGS) data from bacterial isolates (<i>Salmonella</i> spp, <i>Campylobacter</i>) for the analysis of outbreaks (human and animals) as well as studies of antibiotic resistance. Validation of pipelines will be performed by comparing results to established phenotypic methods in the field (i.e. serotyping, resistance by VITEK machine). The aim is to create standard operating procedures for routine analysis of the National Reference Laboratories of the FLI. 	



Teagasc	<ul style="list-style-type: none">• Attend EFFORT conference to further identify synergies with EFFORT (Kaye)• Participate in OH EJP second project call (all)	<ul style="list-style-type: none">• Kaye Burgess, Nov 2018• All
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Other:

IMPART:

- As Hein Imberechts (WP 3 leader) pointed out, we have to pay great attention to have no duplicate research between EFFORT and OHEJP (next OHEJP call would be very severe on that issue). No risk of overlapping between EFFORT and IMPART.

WP3:

- There seems to be a collaborative mindset among those EFFORT partners that we spoke to, which will facilitate any collaboration.
- EFFORT is a very academic consortium, complementary to what we do, but seems to have a broad stakeholders committee (named differently).
- Very high-standard techniques like the metagenomics approach as developed by Frank Aarestrup will not immediately be in reach of every laboratory. There is a risk that other, less powerful but more easily accessible techniques get priority. How can this be avoided?

WP4:

- It was very interesting to hear EFFORT colleagues' reflections on what could have been interesting to do had they had more time/money, and also to get their view on where research should go next. This structured way of debriefing projects at a stage when they are finishing off can provide important input for future research agendas.
- The discussion with EFFORT, and also previously with COMPARE, highlights some of the structural challenges associated with creating alignment and complementarity with ongoing research. When traditional research projects are funded, the issue of sustainability is more or less absent. This can create challenges both with the adoption by end users and maintenance plans (incl. funding) for infrastructure. These difficulties, associated with the transition of project output from research and development into policy and practice, should be specifically and jointly addressed by research funders and policy makers. Solutions for policy, developed in research institutions, run the risk of being lost investments unless a sustainability plan is considered already at the time of project inception.

WP5:

- The cogwheel workshops are a very useful approach!

FLI:

- We are looking for the possibility to make a collaboration with EFFORT projects (WP2, WP3, WP4) as well as ARDIG or RADAR.

Sciensano (Cécile Boland):

- Interesting to know what has already been done in the EFFORT project in order to avoid duplication in future work.
- Will be involved in the OHEJP through the PhD grant "LIN-RES", and therefore it was nice to get to know some potential future partners.



Concluding remarks

In general, the EFFORT project has several activities that are interesting for the OHEJP projects. Seven of the partners involved in EFFORT are also involved in the OHEJP, which is beneficial for knowledge sharing between the projects. Synergies and opportunities for collaboration were especially identified between EFFORT and the OHEJP projects ARDIG, ORION and RaDAR. It is necessary to clarify how synergies between the projects can be best exploited, and how methods, data etc. can be shared between the projects. Appropriate formal agreements need to be in place in order to facilitate cooperation. Representatives from some OHEJP projects intend to contact EFFORT WP leaders for further discussion of potential synergies.

Furthermore, some representatives from OHEJP partners not yet involved in any of the JRP:s or JIP:s participated in the workshop. They expressed great interest for collaboration and knowledge exchange with both EFFORT and ongoing OHEJP projects.

The meeting format (Adobe Connect) worked out quite well, although, as last time, the sound was not perfect from all participants. The format provides a straightforward online meeting room where participants can follow ongoing presentations and write down their questions and/or comments during the presentations. Furthermore, the meeting room can be kept open so that presentations are accessible for the participants later.

The internal meeting with OHEJP partners held after the meeting with EFFORT was constructive and allowed participants to discuss their impressions from the meeting with EFFORT.

Presentations given at the meeting

See [Annex](#).