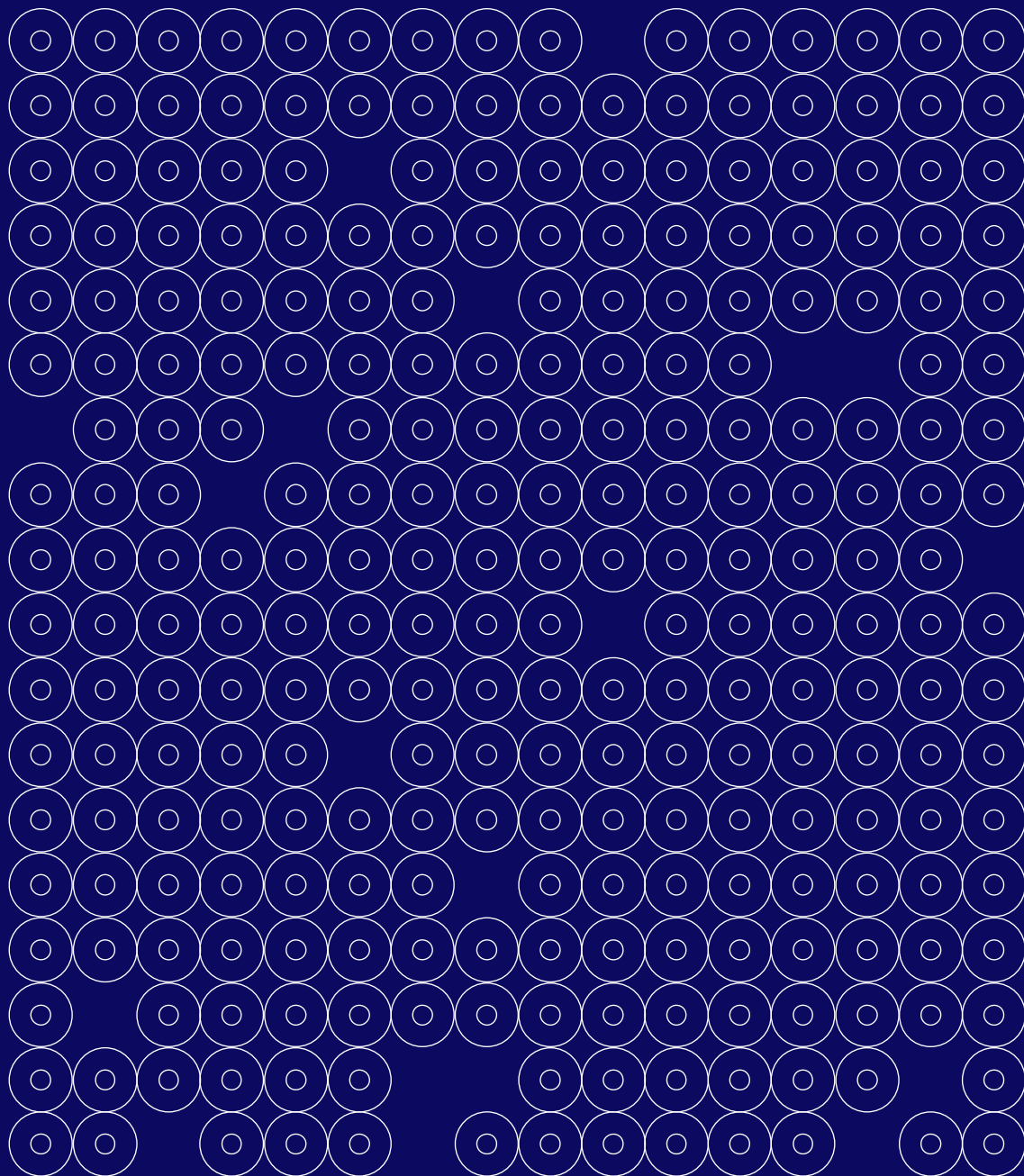


# JPIAMR Network Plus 2020 Start Up meeting



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**jpiaamr**  
Joint Programming Initiative  
on Antimicrobial Resistance

# Contents

<b>Introduction</b> .....	1
<b>Overview of workshop</b> .....	2
<b>Outcomes</b> .....	3
<b>Network Summaries</b> .....	4
Network T&CM alternatives for antibiotics worldwide: Global Initiative for Traditional Solutions to Antimicrobial Resistance (GIFTS-AMR) .....	4
Sharing Research on AMR Network (SHARENET) .....	7
Convergence in evaluation frameworks for integrated surveillance of AMR (CoEval- AMR PHASE 2) .....	9
GAP-ONE-2.....	11
Alliance for the Exploration of Pipelines for Inhibitors of Carbapenemases (EPIC Alliance).....	13
JPIAMR Network for Integrating Microbial Sequencing and Platforms for Antimicrobial Resistance (Seq4AMR) .....	15
The JPIAMR Primary Care Antibiotic Audit and Feedback Network: An international collaboration on best practices for the delivery of antib Several opportunities for collaboration were evident and Network coordinators exchanged contact information to facilitate future networking and collaboration. iotic prescribing feedback to community clinicians using behavioural science (PAAN) .....	17
<b>Annex A.</b> .....	19

## **Introduction**

On the 23<sup>rd</sup> of June 2021, Network Coordinators funded under the JPIAMR Network Plus call 2020, met online to provide information on their planned activities and explore opportunities for future collaborations, synergies and partnerships between Networks if appropriate. In addition to this, the workshop aimed to create an overview of network activities within the funding period to enhance alignment and coordination, and support communication of network outputs by the JPIAMR.

## Overview of workshop

In 2020, JPIAMR launched a Network Call – Network Plus 2020. In this call Networks were directed to enhance resource alignment and maximise existing and future efforts to combat AMR with the production of, for example, white papers, prospective views, guidelines, and/or best practice frameworks in order to identify key questions to be addressed or identify potential solutions to overcome barriers to AMR research studies, under a One Health approach. The intent of the call was to support networks to design and implement ways to support AMR research considering at least one of the six strategic areas of the JPIAMR Strategic Research and Innovation Agenda: Therapeutics, Diagnostics, Surveillance, Transmission, Environment and Interventions, as described in the JPIAMR Roadmap activities.

Eight funding agencies participated in the call, with a budget amount of approximately 890,000 Euro. The agencies participating were:

- Canadian Institutes for Health Research (CIHR) – Canada
- French National Research Agency (ANR) – France
- Ministry of Health (It-MOH) – Italy
- Ministry of Education and Science (IZM)- Latvia
- The Research Council of Norway (RCN) – Norway
- National Institute of Health Carlos III (ISCIII) – Spain
- Swedish Research Council (SRC) – Sweden
- The Netherlands Organisation for Health Research and Development (ZonMw) – The Netherlands

Within the JPIAMR Network Plus 2020 call, seven networks were funded (1 ANR, 2 CIHR, 1 ISCIII, 1 It-MoH, 1 ZonMw and 1 ZonMw/SRC), with a total funding amount of 790,000 Euro. Approximately 145 researchers were included in the funded Networks. An assessment of the gender balance of the researchers participated revealed that 28% of Coordinators and 34% of Partners in the funded projects were female.

Each network gave a presentation of their activities, as per the agenda in Annex A. Summaries of Networks can be found in the following section titled ‘Network Summaries’.

## Outcomes

Several opportunities for collaboration were evident and Network coordinators exchanged contact information to facilitate future networking and collaboration.

A discussion of regarding challenges due to the COVID-19 pandemic revealed:

- The COVID-19 pandemic, and the resulting need to conduct consortium meetings online has led to a general difficulty in engaging the Network consortium members to engage in Network activities.
- Specific Network websites and newsletters can be difficult to set up for individual Networks. The JPIAMR could assist in providing a page on the JPIAMR website to highlight Network activities and events. The JPIAMR could assist in communication of Network activities and events via social media and other communication channels.

# Network Summaries

## Network T&CM alternatives for antibiotics worldwide: Global Initiative for Traditional Solutions to Antimicrobial Resistance (GIFTS-AMR)

### *Network Coordinator*

Erik W. Baars, University of Applied Sciences Leiden, Netherlands

### *Network Partners*

- M. Frass, Austrian Umbrella Organization for Medical Holistic Therapy, Austria
- P. Weiermayer, OEGVH, WissHom, Austria
- P. Panhofer, Private Medical University, Sigmund Freud University, Austria
- M.M. Frass, WissHOM, Austria
- T. Nicolai, Eurocam, Belgium
- D. Vankova, Medical University of Varna, Bulgaria
- F. Yutong, Centre for Evidence-Based Chinese Medicine, Beijing University of Chinese Medicine, China
- J. Liu, Centre for Evidence-Based Chinese Medicine, Beijing University of Chinese Medicine, China
- P. von Flotow, Sustainable Business Institute, Germany
- R. Huber, University Medical Centre Freiburg, Germany
- D. Martin, University of Witten-Herdecke, Germany
- E. Oppong Bekoe, University of Ghana School of Pharmacy Ghana
- H. Szőke, University of Pécs, Hungary
- B. Prakash, The University of Trans-Disciplinary Health Sciences & Technology, India
- E. Rossi, Coordination Center For Complementary Medicine Of The Health Unit Tuscany North West, Italy
- P. Roberti di Sarsana, Foundation for Salutogenesis, Italy
- R. Sanogo, University of Sciences, Techniques and Bamako Technologies (USTTB) Faculty of Pharmacy, Mali
- M. Emeje, National Institute for Pharmaceutical Research & Development, Nigeria
- K. Sørheim, Norwegian Centre for Organic Agriculture, Norway
- M. Fernandez Portales, IAVH, Spain
- C. Verwer, Louis Bolk Institute, The Netherlands
- E. van der Werf, Louis Bolk Institute, The Netherlands
- M. Bestman, Louis Bolk Institute, The Netherlands
- H. van Wietmarschen, Louis Bolk Institute/ University of Applied Sciences Leiden, The Netherlands
- M. Guldaz, Uludag University, Turkey
- E. Katuura, Makerere University, Uganda
- L. Windsley, Organic research centre, UK
- M. Moore, Univ. of Southampton, School of Primary Care, Population Sciences and Medical Education, UK
- P. Little, Univ. of Southampton, School of Primary Care, Population Sciences and Medical Education, UK

- X. Hu, Univ. of Southampton, School of Primary Care, Population Sciences and Medical Education, UK
- M. Johnson, Organic Research Centre, UK
- M. Willcox, University of Southampton, UK

### *Summary of the Network*

Traditional and Complementary Medicine (T&CM) is often used in both animal and human healthcare and may contribute to reducing inappropriate antibiotic use (e.g. as part of delayed prescription strategies (human healthcare) or as alternative prevention or treatment (e.g. for uncomplicated acute infections in both human and animal healthcare).

However, there is as yet no global overview or network of research institutes and researchers working in this area and no broadly supported research agenda on T&CM alternative for antibiotics. We therefore aim to build such a network, in order to maximize exchange between research institutes, collaboration on projects and funding activities and to develop research agendas with sufficient support.

### *Aims*

- To develop a global “Traditional Solutions to Antimicrobial Resistance” network by mapping and connecting the research fields, research institutes, infrastructures and researchers in human and animal healthcare involved in research on T&CM
- To develop research agendas starting with at least one to three prioritized indications both in human and veterinary healthcare
- To prepare grant proposals for research projects and the continuation of the network after the JPIAMR project
- To communicate to relevant stakeholders the existence, activities and output (e.g. research agendas, website) of the Network, both online (report on website, webinars) and during an (online) international conference

### *Expected output of the Network*

- Plenary and working group meetings: two ‘live’ meetings/ year if possible; otherwise via online video conferences. Telephone or video conference calls.
- Survey and interviews to collect information of research institutes (e.g. research fields, projects, infrastructure/ networks, databases, available technologies and resources, research capacities and areas that need strengthening)
- Communication through 3-monthly newsletters, website, congress and webinars

### *Expected results*

- A growing globally organized network of Traditional & Complementary Medicine (T&CM) and AMR/ infectious diseases research institutes, researchers in both human and veterinary medicine and global/ regional policy makers
- A website with accessible information on T&CM, regarding for example research institutes, research fields, projects, infrastructures/ networks, databases, available technologies and resources

- A supported research agenda on priority areas for research in both human and veterinary medicine
- Global communication on the contributions of T&CM (research) to AMR and prevention and treatment of infections
- Funding and sustainability: the network will facilitate collaboration between institutions with similar interests in order to prepare grant proposals which will enable the research agenda to be implemented, and the network to be sustainable after the end of funding from JPIAMR



## Sharing Research on AMR Network (SHARENET)

### *Network Coordinator*

Christian Lienhardt, Institut de Recherche pour le Développement, France

### *Network Partners*

- Anne-Laure Banuls, Institut de Recherche pour le Développement, France
- Eric Cardinale, CIRAD, France
- Laurence Armand-Lefèvre, INSERM UMR 1137, Hôpital Bichat-Claude Bernard, APHP, Paris, France
- Etienne Ruppé, Hôpital Bichat-Claude Bernard, APHP, Paris, France
- Sylvain Brisse, Institut Pasteur, France
- Nicolas Fortané, National Research Institute for Agriculture, Food and Environment (INRAE), France
- Daniela Cirillo, San Raffaele Scientific Institute, Italy
- Heike Schmitt, National Institute for Public Health and the Environment (RIVM), Netherlands
- Nicolas Antoine-Moussioux, University of Liege, Belgium
- Sokleaph Cheng, Institut Pasteur du Cambodge, Cambodia
- Vanphanom Sychareun, University of Health Sciences, Lao Peoples Democratic Republic
- Vannaphone Putthana, National University of Laos, Lao Peoples Democratic Republic
- Aina Nirina, Harimanana, Institut Pasteur de Madagascar, Madagascar
- Volatiana Andrianja, Hospital of Befelatanana, Madagascar
- Ilo Tsimok'Haja Ramahatafandry, Ministry of Agriculture, Livestock and Fisheries, Madagascar
- Mohammad Iqbal Issack, Ministry of Health and Wellness, Mauritius
- Aya Nathalie Guessenn-Kouadio, Institut Pasteur de Côte d'Ivoire, Côte d'Ivoire
- Yakhia Dieye, Institut Pasteur de Dakar, Senegal
- Roger Tine, University Cheikh Anta Diop of Dakar, Senegal
- Alpha Amadou Diallo, Institut Sénégalais de Recherches Agricoles (ISRA), Senegal
- Abdoul-Salam Ouedraogo, Souro SANOU University Hospital, Burkina Faso
- Patrice Debré, Sorbonne Université, APHP, France
- Sylvain Brisse, Institut Pasteur, France
- Nicolas Fortané, National Research Institute for Agriculture, Food and Environment (INRAE), France

### *Summary of the Network*

The threat of AMR is rising in low and middle-income countries (LMIC). The French Alliance of Health Sciences Research Institution (AVIESAN) has recently established a small network for AMR research in partnership with LMIC scientists to strengthen local research expertise. The aim is to assist in the collection of relevant evidence to advise stakeholders and policymakers on suitable control strategies for AMR reduction that

are tailored to the local situation and founded on local problematics. Countries initially involved are Cambodia, Madagascar, Ivory Coast and France.

In this proposal, we intend to expand the network to integrate experts from Laos, Mauritius, Burkina Faso and Senegal, together with scientists from Belgium, Italy and the Netherlands. The intention is to reinforce the geographical distribution of the network (South-East Asia, Indian Ocean and Africa, linked with Europe), strengthen its coherence, and enrich the collaboration. The proposed multidisciplinary Network+ will develop two multicentre research projects intending to identify key determinants of AMR emergence and dissemination. It will be operated as a dynamic collaborative and synergistic process: after an initial workshop in which participants will prepare a detailed outline of the two research projects, the protocols will be fully developed with clear indication of respective tasks and responsibilities, and piloted for feasibility. A second workshop will take place to gather progress and results, and final protocols submitted for funding. Partners will prepare for the implementation of the research protocols, with supporting best practice activities.

#### *Expected output of the Network*

This Network will contribute to the collection of a large dataset that will enrich AMR knowledge, and assist in implementation of efficient strategies for AMR control in LMICs. Contents and expected deliverables of the projects will be described in Communication Notes to be placed on JPIAMR-VRI.

## **Convergence in evaluation frameworks for integrated surveillance of AMR (CoEval-AMR PHASE 2)**

### *Network Coordinator*

Cécile Aenishaenslin, Université de Montréal, Canada

### *Network Partners*

- Mary Wiktorowicz, York University, Canada
- Marianne Sandberg, Technical University of Denmark, Denmark
- Simon Rüegg, University of Zürich, Switzerland
- Daniele De Meneghi, University of Turin, Italy
- Laura Tomassone, University of Turin, Italy
- Barbara Häslar, Royal Veterinary College, United Kingdom
- Victor Del Rio Vilas, Centre for Universal Health, United Kingdom
- Anaïs Léger, Global Studies Institute, Switzerland
- Maurizio Aragrande, University of Bologna, Italy
- Marion Bordier, CIRAD, France
- Massimo Canali, University of Bologna, Italy
- Madelaine Norström, Norwegian Veterinary Institute, Norway
- Dider Wernli, Global Studies Institute, Switzerland
- John Berezowskim, University of Bern, Switzerland
- Hélène Carabin, Université de Montréal, Canada
- Nicolas Antoine-Moussiaux, University of Liege, Belgium
- Lis Alban, Danish Agriculture & Food Council, Denmark
- Jane Parmley, University of Guelph, Canada
- Phuc Pham Duc, Hanoi University of Public Health, Vietnam
- Arne Ruckert, University of Ottawa, Canada
- Sarah Mediouni, Université de Montréal, Canada
- Sara Babo Martin, Institute of Global Health, Switzerland
- Luis Pedro Carmo, University of Bern, Switzerland
- Alpha Amadou Diallo, Institut Sénégalais de Recherches Agricoles, Senegal

### *Summary of the Network*

An integrated approach to surveillance spanning different sectors has been promoted by international organisations for more than a decade and constitutes a central recommendation of the WHO action plan on AMR. The objective of the CoEval-AMR Network is to develop consolidated guidance for evaluation that addresses the specific needs of integrated One Health surveillance systems for AMR and AMU.

Activities targeted for this proposal called “Co-Eval-AMR PHASE 2” include the development of methods and metrics for the evaluation of governance and impacts of One Health surveillance, and their application to selected country-based case studies.

### *Expected output of the Network*

Two scientific workshops will be held to build on researchers' experience and expertise, and consolidated guidance will be developed and made publicly available through the existing online websites.

### *Expected results*

Results will allow for a better understanding of the added value of integrated surveillance for AMR, and to compare integrated surveillance governance strategies across countries in order to identify the most effective and efficient approaches.

## **GAP-ON€-2**

### *Network Coordinator*

Luigia Scudeller, Research and Innovation Unit of IRCCS Azienda Ospedaliero-Universitaria di Bologna, Italy

### *Network Partners*

- Herman Goossens, University of Antwerp, Belgium
- Richard Alm, CARB-X at Boston University, United States of America
- Finola Leonard, University College Dublin, Ireland
- Luca Guardabassi, University of Copenhagen, Denmark
- Jesús Rodríguez-Baño, Hospital Universitario Virgen Macarena, Spain
- Christine Årdal, Norwegian Institute of Public Health, Norway
- Nico Mutters, University Hospital Heidelberg/University Hospital Bonn, Germany
- Souha Kanj, American University of Beirut Medical Center, Lebanon
- Evelina Tacconelli, University of Verona, Italy
- Chantal Morel, Uppsala University, Sweden
- Gemma Buckland-Merrett, Wellcome Trust, United Kingdom
- Marlieke E.A.de Kraker, Geneva University Hospitals, Switzerland
- Sabiha Essack, University of KwaZulu-Natal, South Africa
- Sushmita Lahiri, Boehringer Ingelheim Pharmaceuticals Inc, United States of America
- Malgorzata Mikulska, IRCCS Ospedale Policlinico San Martino and University of Genova, Italy
- Gabriel Levy Hara, Universidad Maimónides, Argentina
- Nicola Petrosillo, National Institute for Infectious Diseases “Lazzaro Spallanzani”, Italy
- Ramanan Laxminarayan, Center for Disease Dynamics Economics & Policy, India

### *Summary of the Network*

The impact of antimicrobial resistance (AMR) is an almost invisible enemy, which slowly, but steadily has impacted society as a whole. Multi-, and/or pan-drug resistant strains have emerged, and have been spreading readily, causing deaths, disabilities and economic losses.

Like for viruses, emergence of successful clones could further aggravate the immense impact of AMR on the global economy, especially if there is an outbreak of multi- or pan-resistant infections. As AMR has been rising slowly, little data has been available about its impact, especially for low- and middle income countries, and especially with regards to economic costs. Understanding how AMR currently affects health care expenditure and economic productivity in health care and agriculture, and how it is likely to do so in times of greater transmission in the future, are key to being able to making informed decision-making with regards to public health interventions, including economically-sound decisions such as surrounding the relative cost-effectiveness of interventions.

To address the complex issue of building the cost picture associated with AMR, we have a three-step roadmap. In the first step, a cost framework completed by the GAP-ON€ network, funded under the 2018 Network Call. Also, GAP-ON€ also identified and contacted a list of 102 key stakeholders. The second step is to gather a smaller group of critical experts from all the One Health areas to co-write a much larger proposal detailing relevant data sources, data gaps, applicable methodologies, and their interconnectedness. The third step will be the actual cost study that needs to be undertaken to gauge the real cost magnitude associated with AMR. Such a major undertaking will require careful planning, and sufficient resources to carry out and coordinate.

#### *Expected output of the Network*

We plan to hold one F2F meeting amongst key experts to develop these study structures, map out potential funding sources, and write a coherent project proposal worthy of funding.

## **Alliance for the Exploration of Pipelines for Inhibitors of Carbapenemases (EPIC Alliance)**

### *Network Coordinator*

Elias Dahdouh, Instituto de Investigación Sanitaria del Hospital Universitario La Paz, Spain

### *Network Partners*

- Jesús Mingorance, Instituto de Investigación Sanitaria del Hospital Universitario La Paz (IdiPAZ), Spain
- Paulino Gómez Puertas, Centro de Biología Molecular “Severo Ochoa” (CBMSO, CSIC-UAM), Spain
- Stefano Lorenzetti, Istituto Superiore di Sanità (ISS), Italy, in collaboration with Dr. Francesca Spyraakis, University of Turin, Italy
- Thierry Naas, Université Paris-Saclay, Hôpital de Bicêtre, France
- Bogdan Iorga, Institut de Chimie des Substances Naturelles (ICSN), CNRS, Université Paris-Saclay, France
- Nathaniel Martin, Institute of Biology Leiden, Leiden University, The Netherlands
- Joe Rubin, University of Saskatchewan at Saskatoon, Canada
- Luis Martínez-Martínez, Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC), Spain
- Thomas Tängdén, Uppsala University, Sweden
- Linda Falgenhauer, Justus Liebig University Giessen, Germany

### *Summary of the Network*

EPIC Alliance is composed of 11 members from 7 countries, bringing together experts from the fields of clinical and basic microbiology, infectious diseases, computational biology & chemistry, bioinformatics, biochemistry, translational biology, biophysics, pharmacology, toxicology, veterinary sciences, and epidemiology.

Carbapenems are among the most potent drugs available to treat bacterial infections that are resistant to other antibiotics. However, several bacteria become resistant to these molecules through the production of enzymes that can break down carbapenems, called carbapenemases. These carbapenemase-producing bacteria threaten our ability to control many infectious diseases across the globe since they render one of the most potent antibiotics ineffective; in addition to frequently being resistant to many other families of antibiotics at the same time. Moreover, there are increasing rates of these carbapenem resistant organisms being reported worldwide. There is thus a great need for strategies to overcome this antimicrobial resistance. One such strategy is the use of carbapenemase inhibitors that might block the action of carbapenemases and could have the potential to reverse the resistance to carbapenems. This approach, though very promising, can be very laborious, time consuming, and costly. Therefore, several groups have relied on computational approaches to detect possible carbapenemase inhibitors. The computational approach is not without its own set of challenges since its success heavily relies on choosing the

correct search parameters, algorithms, and databases, in addition to selecting molecules that could successfully pass all the filters before being used in practice.

Within the EPIC Alliance network, we bring together experts from the fields of clinical and basic microbiology, infectious diseases, computational biology & chemistry, bioinformatics, biochemistry, translational biology, biophysics, pharmacology, toxicology, veterinary sciences, and epidemiology spread across seven countries. All members of the network are leading experts in their fields, and with our combined expertise, we will be able to answer the following question: What is the best approach for data mining on carbapenemase inhibitors and how to translate this data into experiments. Specifically, over the course of two years, the consortium will be addressing the following questions, among others that may arise:

1. What is the best way to predict the carbapenemase inhibiting activity of molecules?
2. How to target carbapenemases with broad spectrums of activity?
3. Which parameters should be chosen for the computational data mining for carbapenemase inhibitors?
4. How can we test candidate molecules in-vitro, in-vivo, and through clinical trials?
5. What is the cost-effectiveness and feasibility of this approach?
6. Is this approach better than already existing ones?

By answering these questions, we hope to reach a unified strategy for finding and testing these important molecules that can safesafeguard the use of carbapenems and help in the global effort to fight against bacterial resistance.



## **JPIAMR Network for Integrating Microbial Sequencing and Platforms for Antimicrobial Resistance (Seq4AMR)**

### *Network Coordinators*

- John Hays, Erasmus MC University Medical Center, Netherlands
- Eric Kristiansson, Chalmers University of Technology, Sweden

### *Network Partners*

- Andrew Stubbs, Erasmus University Medical Centre Rotterdam, Netherlands
- Willem van Leeuwen, Leiden Centre for Applied Bioscience, University of Applied Science Leiden, Netherlands
- Liping Ma, East China Normal University, China
- Willy Valdivia, Orion Integrated Biosciences Inc., United States of America
- Alex van Belkum, BioMérieux, France
- Sebastian Bruchmann, University of Cambridge, United Kingdom
- Andrew McArthur, McMaster University, Canada
- Stefan Emler, SmartGene GmbH, Switzerland
- Eric Claas, Leiden University Medical Centre, Netherlands
- Andreas Posch, Ares Genetics GmbH, Austria
- Richard Stabler, London School of Hygiene & Tropical Medicine, United Kingdom
- Aitana Lebrand, SIB Swiss Institute of Bioinformatics, Switzerland
- M. Petrillo, European Commission, Joint Research Centre (JRC), Ispra, Italy
- S. Capella-Gutierrez, Barcelona Supercomputing Centre (BSC), Barcelona, Spain
- L. Portell, Barcelona Supercomputing Centre (BSC), Barcelona, Spain
- B. Grüning, Freiburg Galaxy Team, Freiburg, Germany
- G. Cuccuru, Freiburg Galaxy Team, Freiburg, Germany
- C. Carrillo, Canadian Food Inspection Agency, Ottawa, Canada
- B. Blais, Canadian Food Inspection Agency, Ottawa, Canada
- B. Gruening, University of Freiburg, Freiburg, Germany
- W. Meier, University of Freiburg, Freiburg, Germany
- B. Batut, University of Freiburg, Freiburg, Germany
- K. Vanneste, Sciensano, Brussels, Belgium
- J. Bengtsson-Palme, University of Gothenburg, Gothenburg, Sweden
- T. Naas, Hopital de Bicêtre, Paris, France
- N. Strepis, Erasmus University Medical Centre (Erasmus MC), the Netherlands
- A. Rhod Larsen, Statens Serum Institut, Copenhagen, Denmark
- B. Helwich, National Food Institute, Lyngby, Denmark
- H. Hasman, National Food Institute, Lyngby, Denmark
- R. Hendriksen, National Food Institute, Lyngby, Denmark
- S. Forslund, Max Delbrück Center for Molecular Medicine, Berlin, Germany
- L. Pedro Coelho, Institute of Science and Technology, Fudan University, Shanghai, China
- A. Patak, Molecular Biology and Genomics Unit, Institute for Health and Consumer Protection, Ispra, Italy
- M. Querci, Deputy Head of Unit, Joint Research Centre European Commission, Brussels, Belgium

- G. van den Eede, Head of Unit, Health, Consumer and Reference Materials, European Union, Brussels, Belgium

### *Summary of the Network*

Main Questions/Approach: How can we best identify and promote collaboration and implementation between AMR NGS stakeholders that link the individual fields of (new) NGS technologies, algorithms, quality standards, teaching/training and sequence databanks?

Answer – By establishing an international and interdisciplinary OneHealth network of public and private experts to take the lead in identifying potential knowledge gaps and solutions. Further, by developing AMR NGS-dedicated quality and teaching/training materials. Finally, by promoting discussion and interactions between AMR NGS stakeholders and other working groups with cross-cutting priorities – including extensive use of JPIAMR VRI.

### Objectives:

1. Promote active collaboration between interdisciplinary OneHealth AMR NGS stakeholders
2. Identify knowledge gaps and provide solutions to current/future AMR NGS issues
3. Formulate recommendations on quality and quality materials
4. Educate AMR NGS stakeholders via interdisciplinary-directed AMR NGS teaching/training materials

### *Expected output of the Network*

1. Dedicated website and access to network materials
2. Face-to-face network meetings and regular teleconferences (in collaboration with other relevant JPIAMR working groups)
3. Open access publications and collation of a Seq4AMR Strategic Roadmap
4. Dedicated interdisciplinary Seq4AMR webinar(s) and course(s)
5. Dedicated Seq4AMR workshop at a relevant international meeting
6. Promotion of Seq4AMR and JPIAMR during conferences.

### *Expected results*

1. Establish new OneHealth AMR synergies between international and interdisciplinary experts for knowledge exchange, joint publications grant writing etc.
2. Identify current knowledge gaps and how to best fill these gaps
3. Formulate quality recommendations and access to materials
4. Develop new interdisciplinary AMR teaching/training/ materials
5. To publish a Seq4AMR Strategic Roadmap
6. To contribute and strengthen the activities of JPIAMR VRI

**The JPIAMR Primary Care Antibiotic Audit and Feedback Network: An international collaboration on best practices for the delivery of antibiotic prescribing feedback to community clinicians using behavioural science (PAAN)**

*Network Coordinator*

Kevin Schwartz, University of Toronto, Canada

*Network Partners*

- Noah Ivers, Women's College Hospital, Canada
- Morten Lindbaek, Antibiotic centre for primary care, University of Oslo, Norway
- Benjamin Brown, The University of Manchester, UK
- Carl Llor, IDIAP Jordi Gol and Gurina Foundation, Spain
- Celine Pulcini, Lorraine University and Nancy University Hospital, France
- Christopher Butler, Nuffield Department of Primary Health Care Sciences, University of Oxford, UK
- Craig Ramsay, Health Services Research Unit, University of Aberdeen, UK
- Denise O'Connor, Monash University, Australia
- Eilidh Duncan, Health Services Research Unit, University of Aberdeen UK
- Fabiana Lorencatto, Centre for Behaviour Change University College London, UK
- Heiner Bucher, Basel Institute for Clinical Epidemiology and Biostatistics, Switzerland
- Jamie Brehaut, Ottawa Hospital Research Institute (OHRI)/University of Ottawa, Canada
- Jan Clarkson, University of Dundee, NHS Education for Scotland, University of Manchester, UK
- Jeremy Grimshaw, Ottawa Hospital Research Institute and University of Ottawa, Canada
- Lars Bjerrum, University of Copenhagen, Denmark
- Lars Hemkens, University of Basel Department of Clinical Research c/o University Hospital Basel, Switzerland
- Marina Davoli, Department of Epidemiology, Rome, Italy
- Michael Hallsworth, Behavioral Insights Team, USA
- Monica Taljaard, Ottawa Hospital Research Institute, Canada
- Nick Francis, University of Southampton, UK
- Pablo Alonso, Institute of Research of Hospital de la Santa Creu i Sant Pau (IR-HSCSP), Spain
- Pär-Daniel Sundvall, Region Västra Götaland, Research and Development Primary Health Care, Sweden
- Paul Little, University of Southampton, UK
- Pia Touboul Lundgren, Nice university Hospital, Department of Public Health, France
- Roberto Grilli, Azienda Sanitaria Locale-IRCCS of Reggio Emilia, Italy
- Ronny Gunnarsson, Region Västra Götaland, Research and Development Primary Health Care, Sweden
- Sigurd Høyve, University of Oslo, Norway
- Theo Verheij, University Medical Center Utrecht, The Netherlands

### *Summary of the Network*

Antibiotic overuse is contributing to rising rates of antimicrobial resistance. Audit and feedback (A&F) can be an effective tool to modify prescribing behaviour. Jurisdictions are, or will be, implementing community antibiotic A&F, as part of broader antimicrobial stewardship programs, which will benefit from tools and resources to optimize their effectiveness.

New research that builds on existing knowledge to advance the field of A&F is needed. Important questions remain surrounding optimal data for antibiotic A&F, methods to optimize the delivery of that data to clinicians, tools that can facilitate incorporation of data into practice, and how such programs can be effectively sustained over time.

We propose assembling an international network of experts from fields of antimicrobial stewardship, primary care, and implementation science. The experts have been selected to bring diversity in expertise, geographical locations, career stages, and genders. The overall objectives of the network are to provide best practice resources on conducting A&F interventions on antibiotic use in primary care, as well as define research priorities to advance this field forward. In addition, we will leverage an existing international network, the A&F MetaLab, to establish a learning community to facilitate longevity and ongoing collaboration and contribution to the JPIAMR-VRI network. We will achieve our objectives through video-conferencing throughout the project cycle with 2-3 multi-day in-person meetings over two years. However, due to the current COVID-19 pandemic we will build in a virtual contingency plan. A modified Delphi method will be used.

### *Expected output of the Network*

Outputs from this network will include a systematic review, best practice resources and tool-kits, and a paper outlining research priorities. These will be organized into publishable peer-reviewed manuscripts as part of a broader dissemination and knowledge translation plan that leverages existing stakeholder networks.

## Annex A. Agenda: JPIAMR Start-up Workshop for Networks funded in the JPIAMR Network Plus 2020 call

**Time:** 14:00-15:30h June 23, 2021

**Venue:** Online: Zoom

**Objectives:** The JPIAMR launched the Network Plus call in 2020. Within this call, seven networks were funded. This workshop aims to explore opportunities for future collaborations, synergies and partnerships between Networks if appropriate. In addition to this, the workshop aims to create an overview of network activities within the funding period to enhance alignment and coordination, and support communication of network outputs by the JPIAMR.

Time	Session
14:00 – 14:05	Welcome, Aims of the meeting and Introduction to JPIAMR Networks Laura Plant, JPIAMR Secretariat and Maria Jose Ruiz-Alvarez-Esterno, Ministry of Health, Italy
14:05 – 14:15	Network T&CM alternatives for antibiotics worldwide: Global Initiative for Traditional Solutions to Antimicrobial Resistance (GIFTS-AMR) Erik W. Baars, University of Applied Sciences Leiden, Netherlands
14:15 – 14:25	Sharing Research on AMR Network (SHARENET) Christian Lienhardt, Institut de Recherche pour le Developpement, France
14: 25 – 14:35	Convergence in evaluation frameworks for integrated surveillance of AMR, CoEval-AMR PHASE 2 Cécile Aenishaenslin, Université de Montréal, Canada
14:35 – 14:45	GAP-ONE-2 Luigia Scudeller, Research and Innovation Unit of IRCCS Azienda Ospedaliero-Universitaria di Bologna, Italy
14:45 – 14:55	Alliance for the Exploration of Pipelines for Inhibitors of Carbapenemases (EPIC Alliance) Elias Dahdouh, Instituto de Investigación Sanitaria del Hospital Universitario La Paz, Spain
14:55– 15:05	JPIAMR Network for Integrating Microbial Sequencing and Platforms for Antimicrobial Resistance (Seq4AMR) John Hays, Erasmus MC University Medical Center, Netherlands
15.05 – 15:15	The JPIAMR Primary Care Antibiotic Audit and Feedback Network (PAAN): An international collaboration on best practices for the delivery of antibiotic prescribing feedback to community clinicians using behavioural science Kevin Schwartz, University of Toronto, Canada
15.15-15.30	General discussion