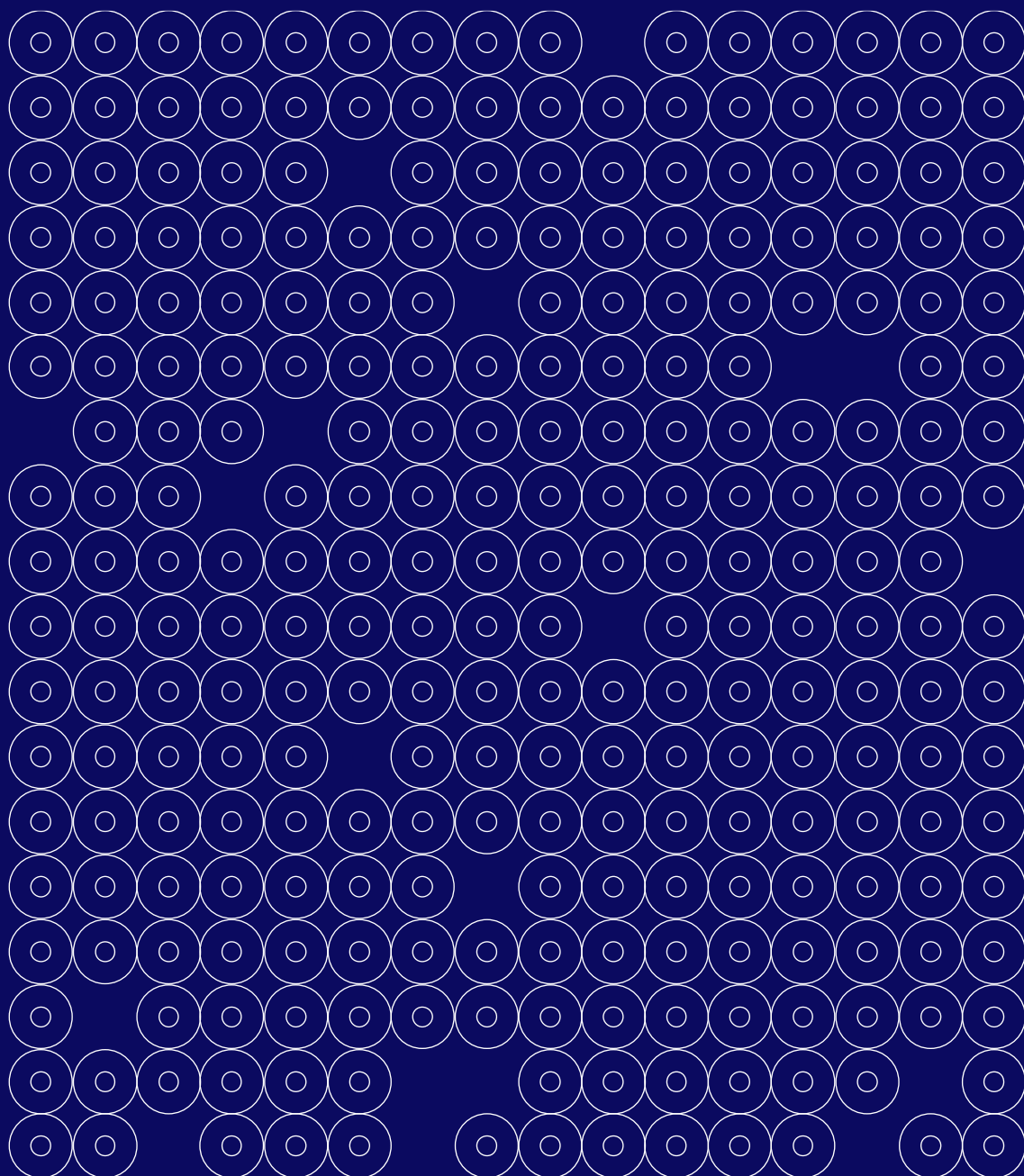


JPIAMR Activity Report 2019



Contents

Foreword	1
Executive Summary	2
The Challenge - Lives Are at Stake.....	2
The JPIAMR – The key to turn the tide of AMR.....	2
Major goals of JPIAMR.....	2
Major achievements of JPIAMR in 2019	2
JPIAMR governance	4
JPIAMR Management Board	4
JPIAMR Steering Committee	4
JPIAMR Scientific Advisory Board.....	4
The JPIAMR Secretariat	5
Coordination and Support Action: EXEDRA.....	5
Update on JPIAMR activities	6
JPIAMR Stakeholder Relations.....	6
The JPIAMR Strategic Research and Innovation Agenda	7
JPIAMR Roadmap of Actions 2019-2024.....	8
JPIAMR-Virtual Research Institute	9
AMR research funding dashboard.....	9
Update of national AMR research programmes/calls from the member countries	10
Strategic Workshops.....	10
Start-up Meeting for JPIAMR Funded Networks, Amsterdam, 19-20, February 2019	11
JPIAMR Regional Workshop: South America, Buenos Aires, 5-7 June 2019	11
JPIAMR Regional Workshop Asia, Suwon, 4-5 December 2019	12
JPIAMR Regional Workshop Eastern Europe, Bucharest, 5-6 December 2019.....	12
JPIAMR-VRI Hackathon, Stockholm, 13-15 December 2019	13
International Events with JPIAMR Participation in 2019	14
Joint Research Calls	15
JPIAMR Communication	18
Self-assessment and evaluation of JPIAMR.....	20
JPIAMR Working Groups	21

Foreword

The year 2019 saw the global consolidation of JPIAMR with the establishment of global regional workshops in Asia, Latin America and Eastern Europe, as well as the geographical expansion of its membership.

During the year, JPIAMR has been highlighted as a key transnational initiative to address AMR by the highest international bodies, for example, in the IACG UN recommendations on a global AMR governance, the G20 Health Ministers conclusions and the EU Council Conclusion on AMR.

The launch of the updated Strategic Research and Innovation Agenda (SRIA), as well as the Roadmap of Actions 2019-2024 with a detailed list of planned joint calls and actions together with the key research priorities, were main milestones of this year. JPIAMR continues to focus on addressing AMR with the One Health Approach.

The publication of the mapping of AMR Research Funding national distribution and launch of the AMR Research Funding Dashboard was also a major milestone for JPIAMR in 2019. The mapping reported on 2,000 running research projects with around 2B € investment, and is a key tool for policy prioritisation.

We have also started to see the progress in the development of the JPIAMR-Virtual Institute. The JPIAMR-VRI builds on the outcomes of the funded research networks. The launch of a first Hackathon on AMR was a major success, awarding teams with new innovative digital solutions to address AMR. In addition, the launch of a joint research call in the area of “Diagnostics and Surveillance” together with Development Agencies has enabled the engagement with the scientific community of LMICs.

We would like to take this opportunity to express our gratitude to all JPIAMR member countries and main AMR stakeholders for your commitment and contributions.

Jan-Ingvar Jönsson, Acting-Chair of JPIAMR
Laura Marin, Head of Secretariat

Executive Summary

The Challenge - Lives Are at Stake

Antibiotics have saved millions of lives throughout the many decades they have been in use as a common drug to treat infection. However, antibiotic resistance is a current global health security challenge and society needs to respond with concerted actions. Only together can we divert from an anticipated trajectory whereby up to 10 million human lives are lost yearly because of infections caused by antibiotic resistant bacteria by 2050.

The JPIAMR – The key to turn the tide of AMR

The Joint Programming Initiative on Antimicrobial Resistance, JPIAMR, is an international collaborative platform engaging 27 nations to curb antibiotic resistance (AMR). The JPIAMR coordinates national research funding and supports collaborative action for filling knowledge gaps on AMR with a One Health perspective. Our shared Strategic Research and Innovation Agenda outlines the key areas to be addressed and provides guidance for countries to align their AMR research agendas nationally and internationally. JPIAMR interacts with stakeholders such as United Nations IACG, World Health Organization (WHO), the AMR Global R&D Hub, and countries outside the current members, including the United States of America. G20 and G7 now include activities by JPIAMR in their declarations and resolutions. JPIAMR coordinates research priorities and calls with the European Commission (EC), the Innovative Medicines Initiative (IMI) and the pharmaceutical industry together with close cooperation with EC DG Research, DG Santé (through their AMR Joint Action) and many efforts aligning with European health authorities.

Major goals of JPIAMR

- To align national and international research programmes.
- To support and coordinate transformative research.
- To develop the JPIAMR Virtual Research Institute.
- To promote innovation and translation of research results.
- To bridge the gap between research and policy.

Major achievements of JPIAMR in 2019

- Launch of the Strategic Research and Innovation Agenda (SRIA)
- Launch of the Roadmap of Actions 2019-2024
- Appointment of a new Scientific Advisory Board
- Representation at the main international AMR events
- Inclusion of the One Health AMR Partnership in the EC strategic configuration list of Horizon Europe
- Update of the Terms of Reference – inclusion of the Search Committee
- Membership discussions with several new countries
- Completion and publication of the mapping of AMR Research Funding 2017 report and launch of the AMR Research Funding Dashboard.

- Recognition of JPIAMR (funding and mapping) in the UN Interagency Coordination Group on Antimicrobial Resistance recommendations on a global AMR governance that were presented to the UN Secretary-General.
- The G20 Health Ministers May meeting pointed out JPIAMR as a key initiative.
- The EU Council Conclusions on AMR (June) agreed that the EC and Member States should further support JPIAMR efforts.
- Representation and participation in a round table discussion at the Ministerial Conference on Antimicrobial Resistance in the Netherlands (June).
- Engagement with key stakeholders such as the Global AMR R&D Hub, CARB-X, GARDP, Repair Fund, EU-JAMRAI, the EJP Once Health, ECRAID, SEDRIC, ICARS and MicrobiomeSupport.
- The Virtual Research Institute (JPIAMR-VRI):
 - Development of the JPIAMR-VRI Overview document
 - Establishment of the Membership Policy
 - Establishment of the Task Force
 - Development of the mind-map of the digital platform
 - Deployment of the first networks
 - Development of the JPIAMR-VRI logo, webpage and communication plan
- JPIAMR calls:
 - Launch of the ninth Joint JPIAMR Call on Diagnostics and Surveillance
 - Preparations of the ERAnet co-fund JPIAMR-ACTION
 - Preparations of the ERAnet co-fund AquaticPollutants
 - Initiation of the mid-term and final evaluation monitoring of the JPIAMR funded projects
 - Impact assessment of the first funded projects, including four potential new compounds
 - Compilation of projects data for ERA-LEARN and EC Data Collection for Calls and Projects
- JPIAMR self-evaluation
- Research Infrastructure catalogue survey
- Collection and publication of National AMR plans and research programmes from JPIAMR member countries
- JPIAMR workshops:
 - JPIAMR funded networks workshop – Amsterdam, the Netherlands
 - Regional Workshop Latin America – Buenos Aires, Argentina
 - Regional Workshop Asia – Suwon, South Korea
 - Regional Workshop Eastern Europe – Bucharest, Romania
 - Hacking AMR 2019 – Stockholm, Sweden
- Communications:
 - Development of new communication materials and videos
 - Update of the JPIAMR webpage
 - Increasing social media impact and engagement

JPIAMR governance

The current governance and management structure of JPIAMR is composed of the following bodies according to the [JPIAMR Terms of Reference](#):

- JPIAMR Management Board
- JPIAMR Steering Committee
- JPIAMR Scientific Advisory Board
- JPIAMR Secretariat
- JPIAMR Core Call Steering Group
- JPIAMR Strategic Working Groups

JPIAMR updated its Terms of Reference in 2019 adding a new “Search Committee” in the Steering Committee election process.

JPIAMR Management Board

The [JPIAMR Management Board](#) (MB) is the main decision making body of JPIAMR. Each of the 27 member countries can have two representatives on the MB with a governmental mandate. The European Commission is a non-voting member. The MB meets formally twice per year and in 2019 the Management Board met in Basel, Switzerland (April 2019: hosted by the National Research Programme NRP 72 “Antimicrobial Resistance” of the Swiss National Science Foundation and Biozentrum Basel, University of Basel) and in Berlin, Germany (October 2019: hosted by Federal Ministry of Education and Research, BMBF).

JPIAMR Steering Committee

The [JPIAMR Steering Committee](#) (SC) provides steering direction of the JPIAMR and strategic input to undertake the JPIAMR mission. The SC meets regularly to discuss strategic issues, develop proposals for the MB and follows the implementation of activities by the Secretariat. In 2019, the MB Chair Carlos Segovia and Steering Committee member Antoine Andreumont (France) stepped down from their positions. Jan-Ingvar Jönsson (MB Vice-Chair, Sweden) assumed the role of Acting-Chair. Other members of the Steering Committee include Jonathan Pearce (United Kingdom), Richard Gordon (South Africa) and Joachim Klein (Germany). In 2019, the SC met five times, four times by teleconference and one physical meeting (London).

JPIAMR Scientific Advisory Board

The MB appoints members of the [JPIAMR scientific Advisory Board](#) (SAB), which consists of top international researchers in the AMR field. The prime tasks of the SAB in 2019 has been the update of the Strategic Research and Innovation Agenda, development of the Roadmap of Actions 2019-2024, and to provide advice to the MB regarding scientific priorities with particular focus on the European Partnerships, workshops, the JPIAMR Virtual Research Institute and Calls for Proposals. In addition, the SAB have supported the JPIAMR monitoring policy, the development of the JPIAMR workshops programmes and provided input to WHO among other tasks. The Netherlands Organisation for Health Research and Development (ZonMw) administers the SAB.

The 2019 SAB consists of:

- Jean-Yves Madec, ANSES, France (Chair)
- Till Bachmann, University of Edinburgh, UK (Vice-Chair)
- Eric Brown, McMaster University, Canada
- Ana Maria de Roda Husman, RIVM Netherlands, The Netherlands
- Katherine Payne, University of Manchester, United Kingdom
- Eva Tacconelli, University of Tübingen, Germany
- Christina Greko, National Veterinary Institute, Sweden
- Jordi Vila, Hospital Clinic in Barcelona, University of Barcelona and Institute for Global Health, Spain
- Anngret Schneider, Robert Koch Institute, Germany
- Constance Schultsz, University of Amsterdam, Netherlands
- Rafael Cantón, University Hospital Ramón y Cajal and Complutense University, Spain
- Marc Lemonnier, Antabio, France
- Ramanan Laxminarayan, Center for Disease Dynamics, Economics & Policy (CDDEP) and Princeton University, USA and India
- Luísa Vieira Peixe, University of Porto, Portugal
- Ed Topp, Agriculture and Agri-Food Canada, Canada

The JPIAMR Secretariat

The [JPIAMR Secretariat](#) is responsible for the day-to-day management of JPIAMR. It ensures the necessary logistical coordination and communication among all JPIAMR activities and boards as well as manages all administrative and financial matters. The secretariat provides leadership in engaging with key stakeholders and international players, and prepares the necessary budgetary arrangements to run the management structure. The Swedish Research Council hosts the Secretariat and during 2019, the secretariat was composed of nine full-time or part-time staff (5 FTEs): a Head of Secretariat, three Senior Research Officers, a Senior Analyst, a Communications Officer, a Web Administrator/Administrative Officer, a JPIAMR-VRI project manager and a Financial Officer. In 2019, the JPIAMR Secretariat hosted one intern from Karolinska Institutet as part of a career development programme.

Coordination and Support Action: EXEDRA

The central staff of the secretariat and activities of task-specific working groups, led by different member countries in a Distributed Secretariat/Coordination Model, are funded in a mixed model with in-kind contributions from members (including personnel) combined with support from the European Commission in the form of a Coordination and Support Action (CSA). The CSA (EXEDRA) started in 2017 will be active until the end of 2020. The CSA has six work packages that mirror and support the activities of the JPIAMR Working Groups. The Swedish Research Council is the coordinator of the CSA and manages a budget of 2.1 M€ (2017-2020). In 2019, the JPIAMR submitted an amendment of the EXEDRA project to the European Commission for the withdrawal of the Romanian partner ANCSI and re-assignment of tasks between partners, as well as changes to names and transfers of responsibilities within countries.

Update on JPIAMR activities

JPIAMR Stakeholder Relations

JPIAMR through its Steering Committee and Secretariat continue to engage and collaborate with other AMR funding agencies, international initiatives and relevant stakeholders (Figure 1).

At global level, JPIAMR has continued to strengthen the following collaborations:

- United Nations: The IACG (the UN Interagency Coordination Group on Antimicrobial Resistance) has submitted recommendations on a global AMR governance to the UN Secretary-General. The report highlighted JPIAMR funding and mapping efforts. JPIAMR, as formal stakeholder, provided comments to the report as well as to the consultation regarding a new UN leadership group on AMR.
- World Health Organization: JPIAMR was involved in the WHO pre-clinical pipeline analysis and also provided input to the drafting of the selection criteria for products that would be funded through a potential new WHO impact investment fund to support late clinical development for antibacterials and diagnostics.
- The G20 Health Ministers meeting (May) identified JPIAMR as a key initiative.
- JPIAMR is an official stakeholder of the AMR Global R&D Hub. JPIAMR is currently working with the AMR Global R&D Hub on a global research investment mapping exercise to ensure that the JPIAMR mapping work is included, and to avoid duplication with the Hub dashboard activities. JPIAMR participated in an AMR Global R&D Hub workshop regarding “Increasing Investments for AMR R&D” (Geneva, May).
- JPIAMR has also become an official stakeholder of the surveillance SEDRIC network and participated in a SEDRIC Surveillance Workshop in October in London.
- JPIAMR engaged with the European Environment Agency regarding new legislation related to antimicrobial resistance and urban wastewater treatment.
- JPIAMR participates in the “AMR Educational Activity – Joint Programming Committee” with CARBX, Wellcome Trust, Repair fund and GARDP who sponsor sessions in key international events and co-branded joint activities.
- Several contacts have been established with ICARS and discussions have been ongoing on how this initiative can interact with the JPIAMR-VRI. This new initiative, led by Denmark, focuses on interventions/implementation research in Low and Middle Income Countries (LMIC).

At the European level there have been several meetings with the GPC (high-level group on Joint Programming), Chairs of the other JPIs, and the European Commission DG Research and DG Santé. JPIAMR, with the European Commission, published an article in Trends in Microbiology “An overview of AMR science policy and funding¹” that gives an overview of AMR policy, and the projects and initiatives aiming to curb the rising trend of AMR. Discussions for the development of a One Health AMR Partnership in the Horizon Europe framework programme have been initiated.

¹ https://www.jpiamr.eu/wp-content/uploads/2019/01/JPIAMR-Article_Trends-in-Microbiology_January-2019.pdf

The EU Council Conclusions on AMR (14 June 2019) indicated that Member States (MS) should be supported in their efforts to combat AMR, but they also need to do more at national level. The Council agrees that the EC and MS should further support JPIAMR efforts.

JPIAMR has set a collaboration link with the DG Santé AMR Joint Action EU-JAMRAI and the EJP One Health in relation to the update of our SRIA. The JPIAMR has held meetings and exchanged of information with EDCTP and Glolid-R, and has supported the ECDC at the European Antibiotic Awareness Day. Several bilateral meetings have taken place with the EC and IMI and its Steering Group of Infectious Diseases regarding the coordination and complementarity of funding programmes. JPIAMR is a stakeholder of the European Clinical Trial Network (ECRAID) initiative and MicrobiomeSupport. JPIAMR has also collaborated with Value DX regarding the development of a catalogue survey.



Figure 1. Overview of JPIAMR strategic relations with organisations, funders and research initiatives.

The JPIAMR Strategic Research and Innovation Agenda

In its formative period, JPIAMR developed a Strategic Research Agenda (SRA), under the guidance of its Scientific Advisory Board (SAB) and international stakeholders. The SRA defined six strategic and scientific priorities required to reduce antimicrobial resistance, improving public health and wellbeing of populations and delivering economic and societal benefits.

The JPIAMR recognises that innovation is critically important in the field of AMR, as there is a strong need for new therapeutics, diagnostics, and innovative infection prevention and intervention measures. In 2018, the JPIAMR updated the SRA to take account of recent research findings and extend the JPIAMR SRA into a Strategic Research and Innovation Agenda (SRIA²). The updated SRIA was published in May 2019 (Figure 2). It is hoped that this extension will support the participation of the private sector in JPIAMR research projects, and aid in the monitoring and evaluation of innovation management in funded research projects.

² https://www.jpiamr.eu/wp-content/uploads/2019/05/JPIAMR_SRIA_final.pdf

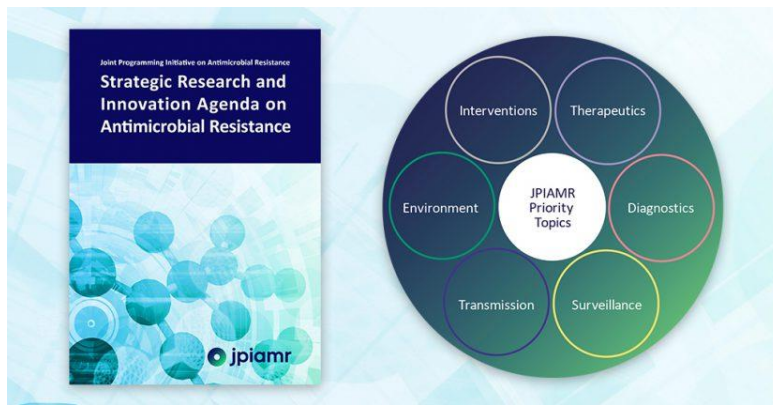


Figure 2. The updated Strategic Research and Innovation Agenda.

The updated priority topics of the SRIA are:

- **Therapeutics:** Discovery of new antibiotics and therapeutic alternatives, and the improvement of current antibiotics and treatment regimens.
- **Diagnostics:** Development and improvement of diagnostics to improve use of antibiotics and alternatives to antibiotics.
- **Surveillance:** Optimisation of surveillance systems to understand the drivers and burden of antimicrobial resistance in a One Health perspective.
- **Transmission:** Understanding and preventing the transmission of antimicrobial resistance.
- **Environment:** The role of the environment in the selection and spread of antimicrobial resistance.
- **Interventions:** Investigation and improvement of infection prevention and control measures in One Health settings.

JPIAMR Roadmap of Actions 2019-2024

The JPIAMR SRIA provides a framework for the JPIAMR Roadmap of Actions 2019-2024 (Figure 3) that will guide future joint transnational actions of the JPIAMR, as well as to serve as an information resource for other strategic initiatives to support coordination and synergistic actions. The roadmap defines future JPIAMR research calls, network calls, strategic workshops and JPIAMR-VRI activities.



Figure 3. The JPIAMR Roadmap of Actions 2019-2024.

JPIAMR-Virtual Research Institute

The JPIAMR-Virtual Research Institute (JPIAMR-VRI) is a virtual platform to connect research networks and research performing institutes/centres to implement Antimicrobial Resistance One Health collaborative research on the JPIAMR Strategic Research Agenda priority topics. The JPIAMR platform intends to provide an unprecedented level of knowledge exchange, research coordination, and sharing of resources, data, and research results, as well as increasing capacity. It fosters coordination, collaboration and alignment of national strategies and programmes in further developing AMR research.

In 2019, strategic progress in the development of the JPIAMR-VRI have occurred, including:

- Development of the JPIAMR-VRI Overview document
- Establishment of the Membership Policy
- Establishment of the JPIAMR-VRI Task Force and JPIAMR-VRI Terms of Reference
- JPIAMR-VRI Financial plan to support contribution agreement
- Development of the Digital Platform Concept Paper
- Continued interaction with JPIAMR-VRI funded Networks
- Organisation of Hacking AMR 2019 on Digital World in the fight against AMR (see more information in the workshop section)
- Development of the JPIAMR-VRI logo and graphic colour scheme (Figure 4)
- Development of the JPIAMR-VRI Communication Plan and communication material including the JPIAMR-VRI Brochure, one-pagers and two-pagers, various infographics and a generic slide deck
- Launch from the JPIAMR website of the JPIAMR-VRI landing webpage and Networks specific micro-pages



Figure 4. The new logo for JPIAMR-VRI highlights that it is an extension of JPIAMR.

AMR research funding dashboard

JPIAMR undertook a mapping exercise in 2017 to obtain a comprehensive picture of the AMR research landscape within JPIAMR member countries. This work was an extension of the mapping exercise performed by JPIAMR in 2014. The aim of the 2017 mapping was to obtain an overview of the grant investments, research capacity and scope among JPIAMR member countries for AMR research. Of the 27 JPIAMR member countries, 22 countries as well as the EU commission and Wellcome Trust provided information related to their investments for the 2017 JPIAMR mapping exercise. The information was used to show the AMR research landscape under the six-priority research areas assigned in the JPIAMR SRIA.

JPIAMR collected information related to AMR awards and resources (major projects or individual research project grants) that were live (active) or where funding had been committed on the 1st January 2017. The information was collected by different organisations in JPIAMR member countries. Research specifically relevant to AMR (bacterial, fungal and parasite resistance), as well as fundamental bacteriology and infectious disease research that may contribute to the overall AMR research effort in the long term, were included.

In early 2019, a report on the mapping³ and a dynamic dashboard⁴ with visual analytics of the dataset was made publicly available on JPIAMR webpage.

Update of national AMR research programmes/calls from the member countries

JPIAMR has collected an update of all the national activities and action plans on AMR that took place under the year 2018-2019 in member countries. National AMR activity one-pagers have been created and are available on the JPIAMR website (<https://www.jpiamr.eu/activities/alignment-actions/alignment-plan/>).

These documents will help with the exchange of information between members. Most JPIAMR member countries have a national action plan, policy or guidelines for AMR, or are in the process of developing one. Many of those countries currently developing their agendas take account of the JPIAMR Strategic Research and Innovation Agenda that provides a strong basis for relevant information. JPIAMR is continuing to collect updates of all such activities to align strategies for national AMR research programmes.

Strategic Workshops

[JPIAMR workshops](#) bring together experts from all relevant fields relating to a specific topic to map the research landscape and identify knowledge gaps. All workshops produce reports and recommendations to JPIAMR. In 2019, JPIAMR organised five strategic workshops, including three global regional workshops in Eastern Europe, South America and Asia. In addition, a start-up workshop for Networks funded under the JPIAMR seventh Call on Surveillance and the eighth Call on Building the Foundation of the JPIAMR-VRI, and a Hackathon on Finding Digital Solutions on AMR were held.

³ <https://www.jpiamr.eu/wp-content/uploads/2019/02/Mapping-of-AMR-research-funding-2017-report.pdf>

⁴ <https://www.jpiamr.eu/amr-research-funding-dashboard/>

Start-up Meeting for JPIAMR Funded Networks, Amsterdam, 19-20, February 2019

The JPIAMR launched two network calls in 2018, (1) Surveillance, and (2) Building the Foundation of the JPIAMR-Virtual Research Institute. Within the surveillance call, ten networks were funded. Within the JPIAMR-VRI call, eight networks were funded.



On February 19-20 2019, the funded Networks from both calls met for the start-up workshop (Figure 5). The meeting was held at the Hilton Hotel, Schiphol Airport, the Netherlands. The Networks discussed alignment and enhanced interactions. The JPIAMR-VRI Networks also worked on future incorporation into the JPIAMR-VRI, while the surveillance networks were introduced to the JPIAMR-VRI and considered whether further interaction within the JPIAMR-VRI could promote and enhance their activities. The workshop report⁵ was published in early 2019.

Figure 5. Participants at the Start-up workshop for JPIAMR Networks.

JPIAMR Regional Workshop: South America, Buenos Aires, 5-7 June 2019

On 5-7 June 2019, the regional JPIAMR workshop ‘Experiences and Areas of Interest for Strengthening Antimicrobial Resistance Networks’⁶ was held at the Science Cultural Centre in Buenos Aires, Argentina (Figure 6). The workshop had excellent results in terms of attendance, subjects covered and impact on national, regional and global AMR networks and groups. There were presentations on the AMR surveillance networks in



the Latin American region based on the One Health approach followed by an exchange of good practices and relevant experiences. The event also provided a space to generate exchanges between research groups, leading health institutions, regulators, industry food sector and consumers, among others. Brazil, Chile, Paraguay, Bolivia and Uruguay were represented.

Figure 6. Laura Marin, JPIAMR representative, together with Claudia Perandones, government-appointed manager of ANLIS, Luca Pierantoni, Head of Cooperation of the European Union Delegation in Argentina, Patricia Angeleri, leader of the Co.Na.Cra. and Alejandra Davidziuk, Coordinator of the Liaison Office Argentina – European Union.

⁵ <https://www.ipiamr.eu/wp-content/uploads/2019/04/Workshop-report-2018-JPIAMR-Transnational-Networks.pdf>

⁶ https://www.ipiamr.eu/wp-content/uploads/2019/08/20190815_EXEDRA-Workshop_Report_Latin_America_Argentina.pdf

JPIAMR Regional Workshop Asia, Suwon, 4-5 December 2019

The JPIAMR Regional Workshop Asia was hosted by Sungkyunkwan University School of Medicine in Suwon, Korea (Figure 7). The workshop was supported by JPIAMR, the National Research Foundation of Korea and AMED Japan. Participants came from 11 different countries, including eight Asian countries (China, Japan, Republic of Korea, Vietnam, Hong Kong, India, Pakistan and Qatar) and Australia, as well as JPIAMR representatives from the Secretariat (Laura Plant) and the SAB (Marc Lemonnier) (Figure 8). The workshop was attended by a mixture of scientists, representatives from funding agencies and ministries, policy advisors, industry representatives and hospital officials. The focus of the workshop was: Clinical Epidemiology, AMR Policy, Therapeutics and Diagnostics.



Figure 7. Promotional material for the regional workshop in Asia.



Figure 8. Participants at the Regional JPIAMR Workshop in Asia.

The workshop included a mixture of overview topics on the AMR situation in Asia, as well as more specific scientific talks on therapeutics and diagnostics. Two round-table discussions were held on One Health in Asia and Research Collaboration in Asia.

JPIAMR Regional Workshop Eastern Europe, Bucharest, 5-6 December 2019

Hosted by Cantacuzino Institute in Bucharest, Romania, the workshop was supported by JPIAMR and the Romanian Defence Ministry (Figure 9). The workshop was chaired by the Romanian Minister of Agriculture and attended by the Secretaries of State of Environment and Public Health, as well as high-level representatives from the ministries of Education, Research and Defence. Laura Marin and Patriq Fagerstedt represented JPIAMR. Other participants included experts from ECDC, JPIAMR member EU countries,

as well as representatives from Moldavia and Lithuania. The focus of the workshop was to increase AMR intergovernmental collaboration in a One Health approach, how to implement the JPIAMR SRIA, and the further development of the JPIAMR-Virtual Research Institute.



Figure 9. Promotion of the regional workshop in Bucharest, Romania.

JPIAMR-VRI Hackathon, Stockholm, 13-15 December 2019

The aim of the Hacking AMR 2019 hackathon was to bring together scientists, designers, patients, developers, innovators, students and entrepreneurs to collaborate, dream up and create solutions to real-world problems to improve human, animal and environmental health and wellbeing concerning Antimicrobial Resistance (Figure 10). During the hackathon, 40 participants formed seven different teams and worked on diverse digital solutions to AMR.

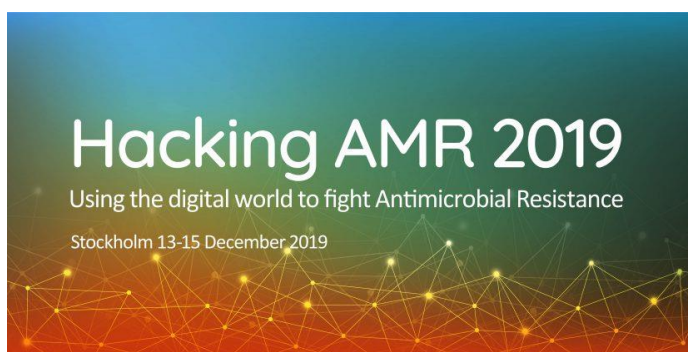


Figure 10. Promotion of, and participants of, the JPIAMR-VRI hackathon: Using the digital world to fight Antimicrobial Resistance: #HackingAMR2019.

Through a collaboration with the BEAM-Alliance and the voluntary participation of four of their members, JPIAMR awarded the Hacking AMR 2019 winning team, Mission Prescription, a post-event mentorship package to continue to develop their ideas.

International Events with JPIAMR Participation in 2019

JPIAMR has participated in many events in 2019. The following table (Table 1) outlines the international events in which JPIAMR has been represented, through either participation or attendance.

Table 1. International events with JPIAMR Representation 2019.

Event	Location	Date
Early drug accelerator meeting	London	28-29 January
Meeting of the European Network for Safer Healthcare “Patterns to tackle AMR: Designing effective HAI prevention and control programmes in Europe”, EU Parliament	Brussels	29 January
Bilateral meeting with Becton Dickinson /BD Foundation Brussels, 29 Jan 2019	Brussels	29 January
Glopid-R secretariats meeting	Paris	5 February
ICARS meeting	Washington	26 February
MICROBIOMESUPPORT Common Ground Workshop	Vienna	4-5 March
EU One Health Network meeting	Brussels	12 March
12th Berlin Conference on Life Sciences. Novel Antimicrobials and AMR Diagnostics 2019	Berlin	14 March
JPIAMR-ICARS meeting	Copenhagen	27 March
UN Water Microbiology Conference	Chapel Hill	13 May
ERA learn workshop	Brussels	15-16 May
Global Hub workshop	Geneva	28 May
Drug discovery workshop	Cape Town	4 June
Second Ministerial Conference on Antimicrobial Resistance - Accelerating Ambitions for Future Health	Noordwijk	19-20 June
8th Congress of European Microbiologists FEMS	Glasgow	7-11 July
IPC ThinkTank Meeting	Geneva	9-10 September
European R&I days	Brussels	25 September
Surveillance and Epidemiology of Drug Resistant Infections Consortium (SEDRIC) Global Meeting	London	9 October
Antibiotic Stewardship workshop	Salamanca	25 October
AMR 1st training course – a One Health Challenge	Annancy	8 November
Reversing a dystopian future: New strategies to discover antibacterial agents conference	Barcelona	12-14 November
European Antibiotic Awareness Day	Stockholm	18 November
Emerging Antimicrobials and Diagnostics in AMR	Amsterdam	19-20 December
The Economist Antimicrobial Resistance Summit	Singapore	5 December

JPIAMR is a regular participant at JPI Chairs meetings and Groupe de haut niveau pour la Programmation Conjointe (GPC) meetings. JPIAMR also participates in meetings from IMI, the EC, the Global R&D Hub and regional conferences in the AMR and AMR governance field.

Joint Research Calls

Core Call Steering Group

The JPIAMR Core Call Steering Group interacts to develop calls and guidelines to support the activities of Joint Call Steering Groups. Members are representatives from former and present call secretariats, and the UK. The Core Call Steering Group regularly holds teleconferences and in October 2019, the group held a technical workshop in Berlin on Management and Procedures of Joint Transnational Calls in relation to the JPIAMR Roadmap of Actions 2019-2024.

Joint Transnational Calls for Proposals

Since 2014, JPIAMR has held six joint transnational calls and three network calls funding 61 research projects (Figure 11) and 31 networks (Figure 12). The goal of the JPIAMR calls is to foster multinational translational research collaborations that can accomplish more than individual countries working independently, leading to improved control of bacterial infections.

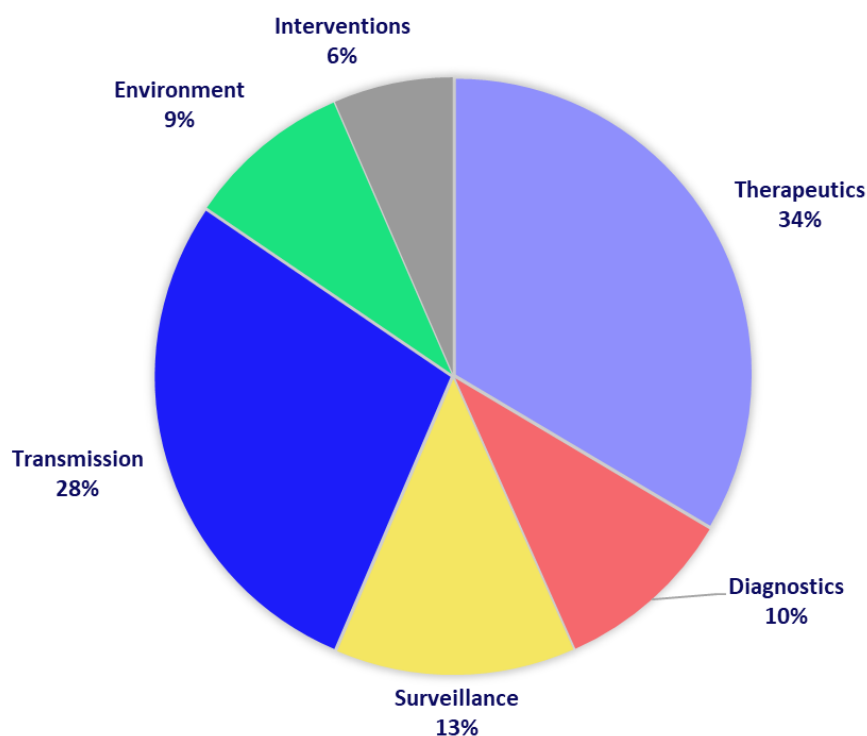


Figure 11. JPIAMR Research Projects funded by JPIAMR countries from 2014-2019, divided into JPIAMR priority area. To date, 61 research projects have been funded by JPIAMR.

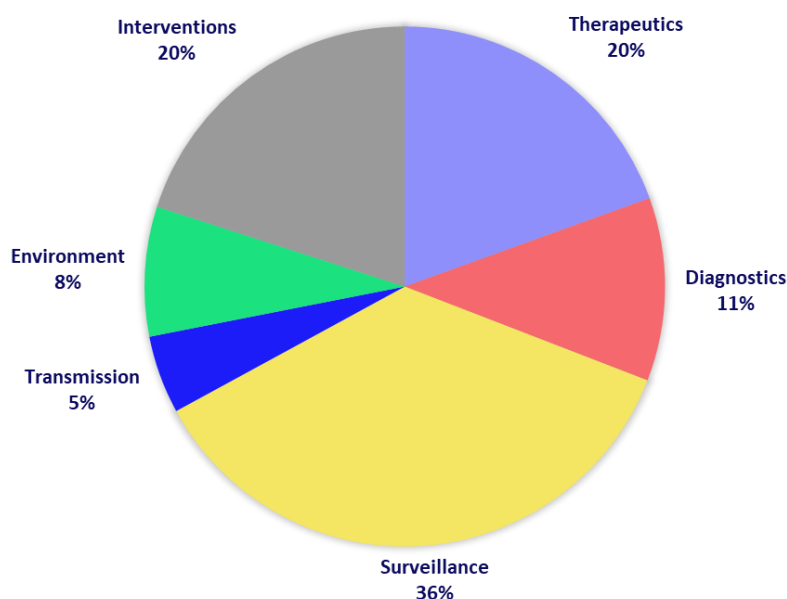


Figure 12. JPIAMR Networks funded by JPIAMR countries, divided according to JPIAMR priority area. To date, 31 AMR Networks and Working Groups have been funded through JPIAMR Network Calls. To date, the financial contribution to these calls is 1.7M €.

The German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) coordinated the JPIAMR 2019 Joint Transnational Call “Diagnostics and Surveillance of Antimicrobial Resistance: Development of tools, technologies and methods for global use”. The JPIAMR Joint Transnational Call 2019 has expanded the borders of the JPIAMR Member States through the participation of development agencies from Canada, Sweden and the Netherlands, broadening the fundable research base to include researchers from LMIC from South/South East Asia and Africa. Twelve projects were awarded funding with a total funding amount is 12.5M € involving 59 research groups from 27 countries. The call was launched within the framework of the ERA-NET cofund: JPI-EC-AMR.

Monitoring and evaluation of JPIAMR-funded projects and networks

In 2019, JPIAMR pursued both qualitative and quantitative analyses of outputs from supported projects and networks as per the [“Monitoring policy for JPIAMR funded projects and networks”](#). Mid-term reporting of the supported projects from the JPIAMR calls in 2015 and 2016, and final reporting (first ex-post) of the projects from the JPIAMR call in 2014 has been conducted. The following provides a summary of the monitoring of the projects supported under the first JPIAMR call in 2014.

The primary aim of the first joint call of JPIAMR “InnovaResistance” was to facilitate the generation and application of new approaches to overcome antibiotic resistance. In this call, seven consortia were funded including partners from 11 different countries, with a total funding of 8.1M €. Out of the seven consortia, reports from five projects were received. These five projects have together published a total of 45 publications (including original work and review), and have resulted in a mix of research resource outputs, for example, different microbial strains (75), assembly of antibiotic libraries, technology assays or reagents (7), and data analysis techniques (3). Three projects have

been very promising and developed new compounds or materials (4) of which a patent is pending for one of them. Three projects also received additional external funding for complementary activities related to the project related to academia-industry research partnership with CARB-X and TB-alliance (Figure 13). JPIAMR is following-up with qualitative assessment of these supported projects involving the SAB, who is assessing the scientific contributions with regards to novelty and innovation, methodological advances, interdisciplinarity, collaborative outcomes, as well as potential short- and long-term economic and societal impacts of the projects. This assessment will assist in the identification of the impact of the JPIAMR funded projects and provide advice on the adequacy of future JPIAMR research calls.

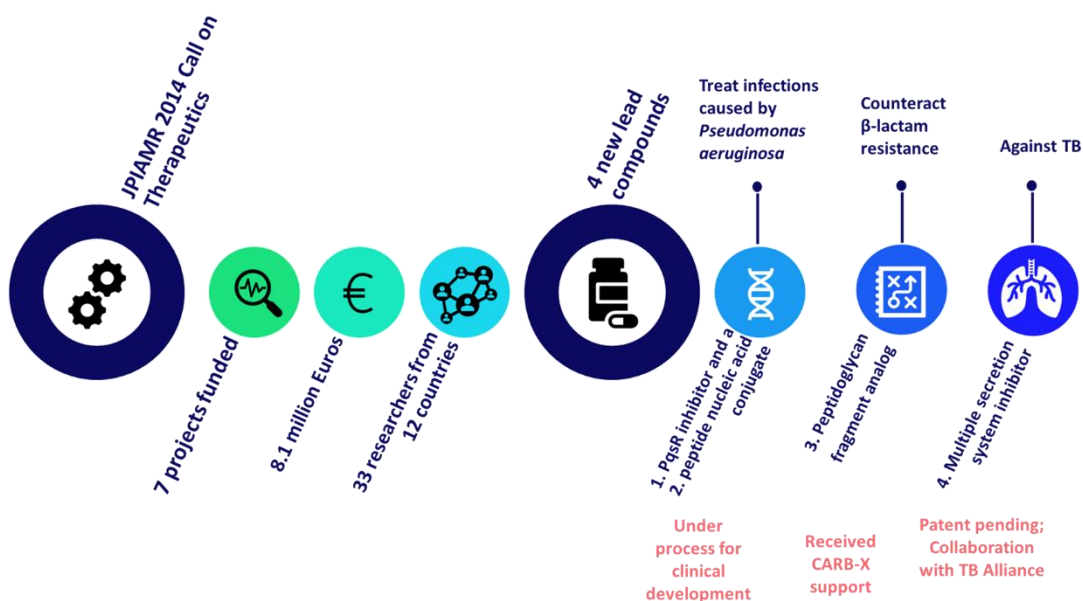


Figure 13. Overview of funded projects from the JPIAMR first call on therapeutics “InnovaResistance”.

JPIAMR is highlighting the potential of these projects and their impact on fighting antimicrobial resistance by reflecting the novelty of the funded research and the research outcomes of the projects. This has been pursued in the form of “One-pagers” or “brochures” using JPIAMR communication channels (social media, JPIAMR website, JPIAMR meetings and conferences) through both printed and digital materials (Figure 14).



Figure 14. The communication of results from funded projects in the first JPIAMR Joint Call.

Peer Review Database

JPIAMR has developed an expert database of researchers and potential peer reviewers with experience in the AMR field. The database contains an overview of the expertise areas of each expert, divided by the areas identified of the JPIAMR Strategic Research Agenda. The database is hosted by the Swedish Research Council and available for all members of JPIAMR.

JPIAMR Communication

In 2019, JPIAMR produced a communications plan and strategy that outlined the much of the communications for the year. The new JPIAMR design, brand guidelines and templates were implemented. Many additional activities were added throughout the year, such as several high-level workshops, expanded communications of call results and exploration of new communication tools. A re-design of the JPIAMR website was also performed (Figure 15), and design elements were added to the JPIAMR-VRI in the form of a logo (Figure 4). In addition, the JPIAMR-VRI now has its own section in the JPIAMR webpage and a communications plan specifically targeting the JPIAMR-VRI was developed.

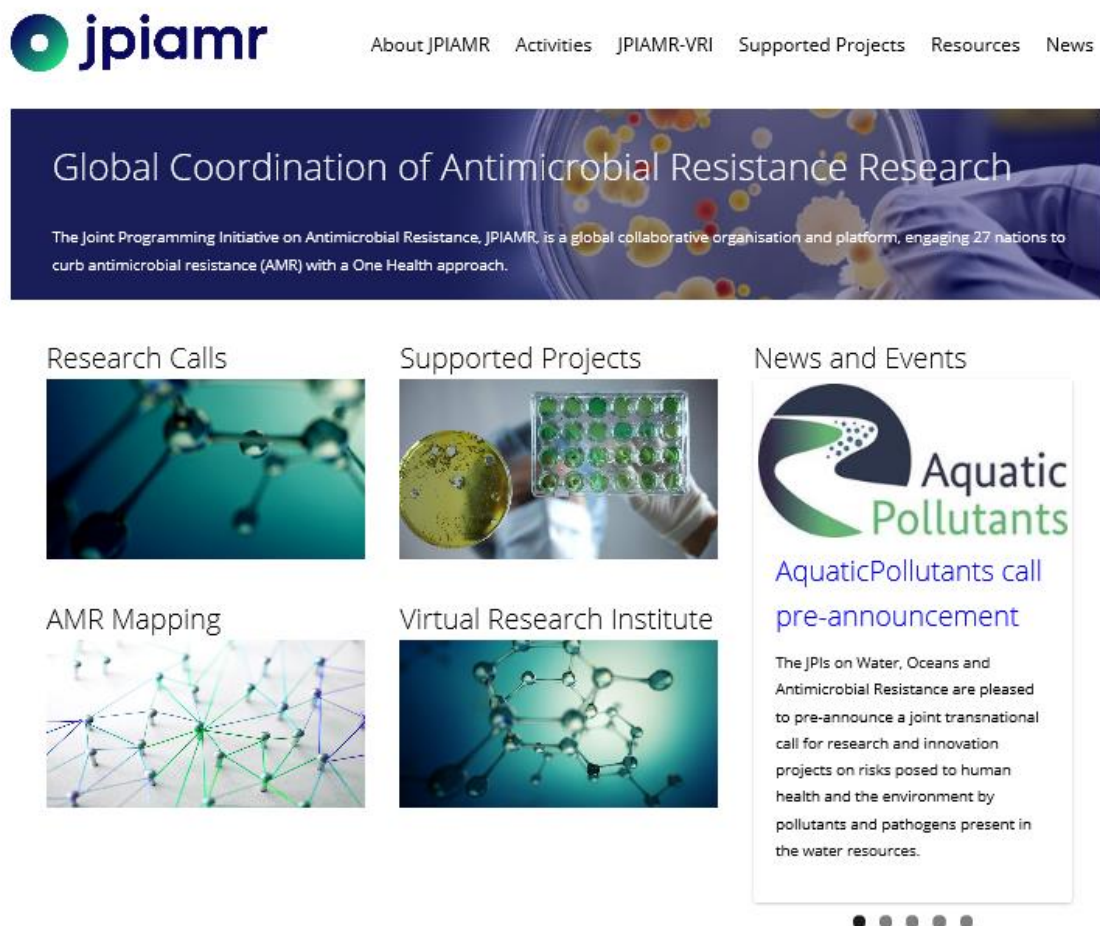


Figure 15. Updated design of the JPIAMR website. The new website has improved the visibility of key areas and news.

At the Start-up workshop for Networks funded under the Surveillance and JPIAMR-VRI Network calls videos with eight of the funded VRI-Networks were made to share the goals and aims of each project. The videos were shared with members, policymakers, within the scientific community and beyond (Figure 16).

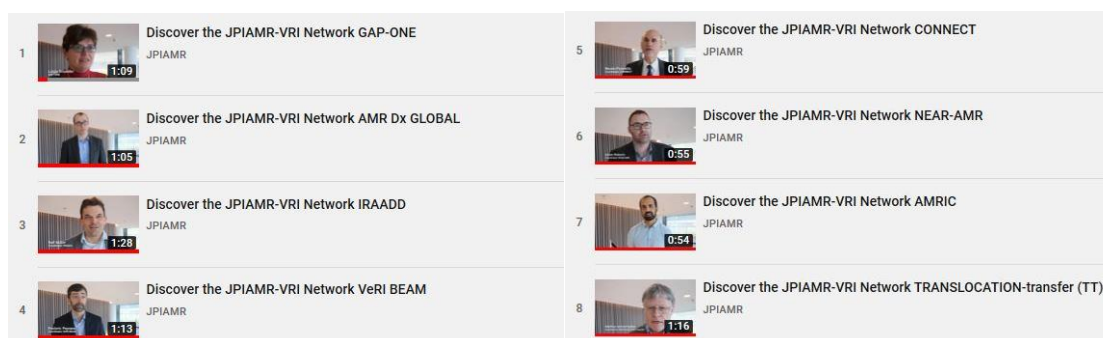


Figure 16. The eight Networks funded under the JPIAMR call “Building the foundation of the JPIAMR-VRI” presented in videos.

In addition to the Start-up workshop for JPIAMR Networks, JPIAMR communicated information four other workshops: Regional workshop in Latin America (Figure 17), Regional workshop in Asia, Regional workshop in Eastern Europe and the JPIAMR-VRI Hackathon: Hacking AMR 2019, in Stockholm, Sweden.

- **Regional Workshop in Latin America:** The workshop was communicated on site together with social media and newsletters in collaborating with local partners.
- **Regional workshop in Eastern Europe:** The workshop in Romania was communicated in social media by JPIAMR and with quite heavy media presence at the workshop itself. Romanian media reported about the JPIAMR-VRI and state of AMR.
- **Hacking AMR 2019:** There was a large focus on communication leading up to and during the hackathon. The Hackathon was communicated via social media by JPIAMR and collaborating partners. Joint press release(s) by the Swedish Research Council and Canadian Institutes of Health Research (CIHR) were prepared. A Facebook Live stream “broadcasted” the team pitches and the grand finale. T-shirts for participants were produced as part of the imagery. Some media reported about the hackathon and the winning project. The Facebook streams received over 400 views in the first couple of days after the hackathon concluded.

Other highlights from 2019 with regards to communication include:

- The Call on Diagnostics and Surveillance that was promoted with an extended online communications campaign to share the Call throughout Africa and Asia, together with participating JPIAMR member countries and national aid agencies in Sweden, Canada and The Netherlands.
- The updated Strategic Research and Innovation Agenda was launched and promoted with a printed overview and images made for communication purposes.
- The JPIAMR Roadmap of Actions 2019-2024 was published and communicated as a guide to future joint transnational actions of the JPIAMR.

- The AMR Research Funding Dashboard was communicated in social media, newsletters and presentations, etc.
- JPIAMR published research outputs and the impact of projects funded in the first JPIAMR Joint Call 2014: "Innovative approaches to address antibacterial resistance". A special folder and one pagers were created, displaying outcomes from three projects. These projects were further promoted in social media, newsletters, on the JPIAMR webpage and in presentations.

In line with EAAD 2019 and the World Antibiotic Awareness Week 2019, JPIAMR communicated the results of and the funded projects in the Call on Diagnostics and Surveillance. This year graphical images were paired with videos. We presented seven out of twelve funded projects in the Call on Diagnostics and Surveillance, communicated via “self-made” videos made through collaboration with the coordinators of the projects (Figure 17).

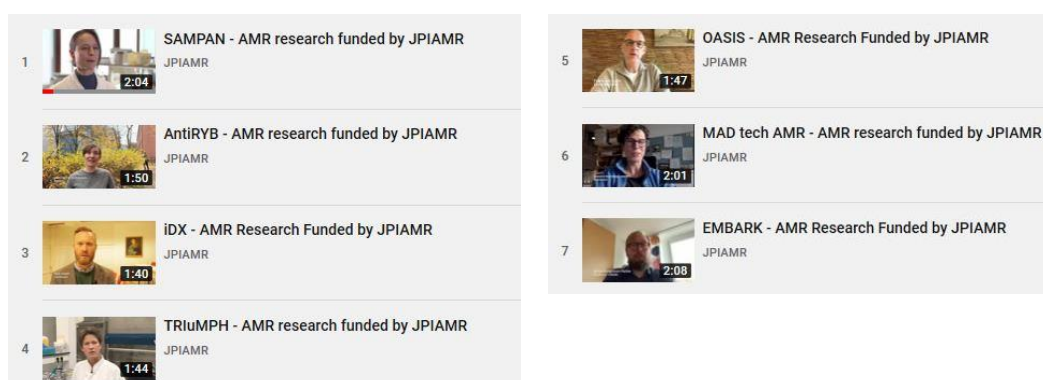


Figure 17. Videos communicating funded projects in the JPIAMR Joint Call on Diagnostics and Surveillance.

JPIAMR was highlighted and shown support throughout the year by several important organisations and in international policy shaping activities such as The UN Interagency Coordination Group on Antimicrobial Resistance, G20 Health Ministers, the EU Council Conclusions on AMR, the Global AMR R&D HUB, and at many other venues. This strengthened the international exposure and visibility of JPIAMR.

The activity on social media has increased substantially due to a higher volume of activities and an overall increased knowledge of JPIAMR in the international arena focused on AMR. Our main social media channels, in order of impact, are Twitter, Facebook and LinkedIn. The use of social media has led to more visibility, recognition and outreach for calls, results, activities and impact made by JPIAMR. In 2019 JPIAMR Twitter: (1) increased the number of followers by 45%, (2) increased the number of views per tweet by 42%, and (3) increased the number of engagements by 29%.

Self-assessment and evaluation of JPIAMR

JPIAMR undertook the exercise of self-evaluation through a survey to the SC, MB and SAB members to assess JPIAMR activities and actions over the last years. The previous JPIAMR self-evaluation exercise was conducted in 2015. In accordance to its own [framework for monitoring and evaluation](#), the JPIAMR was assessed based on three basic dimensions:

1. Governing research policy making;
2. Governing research performance and
3. Responsiveness to societal needs and innovation.

The dimensions were also aligned with the set of dimensions formulated by the taskforce of the 10 JPIs. Briefly, out of 87 respondents, only 21 answered to the survey yielding a 24% response rate. Out of the respondents 60% were MB members, 30% were SAB members and 10% were SC members. The overall performance of JPIAMR in different dimensions assessed by the respondents were very positive and successful in specific measures. However, there is always scope for improvement and the improvements suggested by the respondents are highlighted below:

- Improve interaction between the different governing entities of JPIAMR
- Highlight added value of JPIAMR's external relations and stakeholders
- Highlight strategic impact of partnership with other global initiatives
- Increase in national funding dedicated to AMR research and JPIAMR calls
- Need to devise long-term sustainability strategies
- Increase visibility of JPIAMR

The respondents also highlighted the following accomplishments that JPIAMR achieved over the last couple of years:

- Successfully addressed the societal challenge of AMR by influencing policy priorities through research and innovation.
- Stimulated high-quality international and interdisciplinary research in the One Health domains and priority areas.
- Engaged actively in extending relations and establishing partnerships with other global initiatives.
- Successfully implemented activities such as the SRIA, Roadmap of Actions 2019-2024, AMR mapping dashboard, JPIAMR calls and workshops.

JPIAMR Working Groups

In order to organise the portfolio of joint activities the JPIAMR Management Board has set up seven strategic Working Groups (WG). The mandate of the WGs is to serve as think-tanks/brainstorming of the WGs action plans, to provide leadership and to implement the activities. The following is a brief summary of JPIAMR WG activities for 2019.

Working Groups: Governance and Sustainability

The development of new JPI governance structures and sustainability plans has progressed at different pace within the JPIs in the shadow of the discussion on the future implementation of Horizon Europe (HE) and its effect on potential EU support of JPI activities. JPI Oceans formed an international non-profit association under Belgian law and JPND pursued plans to form an association under French law, which was however rejected by its members. Most JPIs, including JPIAMR, maintained an active discussion in their Management Board and Steering Committee settings but entered a holding pattern for the time being.

JPIAMR has developed a scenario analysis on sustainability, financial models and its relation to future governance models. For the coordination of strategy and interaction with the European Commission for the development of a future Cofunded Partnership on HE the JPIAMR has established a Task Force.

Working Group: Globalisation

In 2019, the JPIAMR Globalisation WG had a dialogue with several countries regarding membership. In addition, regional workshops were held, or planned, in different geographical regions (South America, Eastern Europe, and Asia).

As several new members have recently joined JPIAMR it is important to have an internal assessment mechanism on the best practice regarding how to inform and include new members into the JPIAMR consortium in the best way. A questionnaire was developed and implemented as an online survey to collect information from new members. A summary report will be prepared from the anonymised data and made public to all JPIAMR partners in 2020.

Working Group: Policy Alignment

In 2019, the working group for Policy Alignment has analysed the survey conducted in 2018 among JPIAMR and EU-JAMRAI representatives. The purpose of the survey was to simplify alignment of different countries' political positions by identifying national contact points and describing different national organisation models. The survey collected information on national policies, organisation models in AMR work, and which ministry/governmental agency has the main responsibility for the national AMR policy development, AMR research activities, and different AMR sub-areas. The survey also covered the national organisation for AMR-related activities, possible national organisation for JPI coordination and involvement in other international AMR organisations. A report, as well as compiled data from the survey, have been produced and will be published in 2020.

Working Group: Research Alignment

The major goal of the WG for Research Alignment for 2019 was to finalise the update of the JPIAMR Strategic Research and Innovation Agenda and develop a Roadmap of Actions 2019-2024. Following the workshop in December 2018, the SRIA was finalised and endorsed by every SAB member in January 2019. The JPIAMR SRIA was adopted by Management Board JPIAMR on 2nd April 2019.

A SRIA prioritisation work session towards the JPIAMR Roadmap for Joint Actions 2019-2023 was held at the Management Board meeting of 2nd April 2019. The JPIAMR management board members were consulted regarding the Roadmap of Actions 2019-2024 guiding future joint transnational actions of the JPIAMR.

In May 2019 the JPIAMR SRIA and the JPIAMR Roadmap of Actions 2019-2024 were published. Thereafter the SRIA and Roadmap were promoted on social media

After completion of the working group tasks, the working group was dismantled in 2019.

Working Group: Virtual Research Institute

JPIAMR has further embraced the development of the JPIAMR-Virtual Research Institute (JPIAMR-VRI) as one of its key activities. More information can be found in the section above on the JPIAMR-VRI.

As a follow up to the 8th Call which funded Networks to 'Build the Foundation of the JPIAMR-VRI', JPIAMR is currently developing the Network Plus call (10th Call) which will focus more on implementation activities, and will open early in 2020. This call will allow current JPIAMR Networks as well as new Networks to form and develop around related JPIAMR-VRI fundamental activities.

Working Group: Research Infrastructures

In 2019, the working group Research Infrastructures (WG RI) had changes in its composition, and continued its activities with the participation of Sweden, Canada, Italy, and the Netherlands (Chair). Collaboration was intensified with VALUE-Dx, the JPIAMR core call group and the JPIAMR Virtual Research Institute (VRI) Task Force.

The WG has discussed the options with the Core Call Steering Group for a procedure for Research Data Management (RDM) that make RDM feasible and beneficial for JPIAMR funded researchers. The WG builds on experience on how to deal with challenges in research practice, such as the large variety among member countries in their capacity and facilities for RDM. The WG will make use of the core requirements for data management, that were developed by Science Europe on behalf of the European Open Science Cloud (November 2018) and allow member states to align their DMP templates, guidance and procedures. The final RDM procedure will be ready in 2020 for implementation into future JPIAMR research calls.

The WG RI has been working with a 'Shared knowledge & best practices in biobanking & data sharing' guideline by conducting a survey on behalf of JPIAMR and VALUE-Dx, among a large target audience of both public and private organisations in JPIAMR and other AMR related networks. Useful input was obtained from 128 respondents, showing a large variety of collections of biological resources and associated databases, 'non sample' databases and research infrastructures providing services that are relevant for AMR research. In parallel to the survey, the WG looked into options to make the overview a 'living' (sustainable) service for future AMR research that will be kept up to date, and ready to take up new resources and services.

The WG RI worked with the WG JPIAMR-VRI to find options to link the overview with future digital platform. Moreover, a collaboration was set up with BBMRI to develop opportunities to integrate the overview in the BBMRI-ERIC directory (catalogue), and possibly a special AMR node. The overview of databases and biobanks will be ready to present on the webpage Research Infrastructures of JPIAMR, and later the digital platform of the VRI.

Working Group: Industry relations

Following up on work in 2018, the Industry Working Group looked at various ways to support industry engagement in JPIAMR calls. The group decided that the most

pragmatic method of support would be to use country-specific terms and conditions which would apply based on the location of the research being undertaken by the industry partner. The JPIAMR Guidelines for Applicants were updated accordingly and shared with the Core Call Working Group. Members of the Industry working group attended the Biocom Novel Antimicrobials and AMR Diagnostics meeting in Berlin (March 14-15 2019). The Industry Working Group Chair, Jonathan Pearce, participated in a panel discussion, while JPIAMR-funded research was presented in several sessions.

The Industry working group agreed to represent the JPIAMR within the Joint Programme Committee AMR Education Initiative. This group includes five organisations (CARB-X, GARDP, JPIAMR, Novo Holdings Repair Impact Fund, Wellcome Trust) providing educational support for the antimicrobial pipeline through workshops, bootcamps, webinars and online tools. For example, the group provided a pre-conference workshop on Resistance Testing prior to the aforementioned Biocom Novel Antimicrobials meeting in Berlin. Finally, the Industry Working Group is working with members of the SAB on a workshop to showcase JPIAMR-funded research and explore opportunities for research to test interventions to reduce microbial transmission.