



JOINT PROGRAMMING
INITIATIVE
ON ANTIMICROBIAL
RESISTANCE

ACTIVITY REPORT 2017

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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 *now* a global health security challenge. When bacteria become resistant to commonly used drugs, society needs to respond with concerted actions. Only together can we divert from a trajectory leading to up to 10 million human lives being extinguished yearly because of antibiotic resistant bacteria, this by 2050 if projections become reality.

The JPIAMR – The key to turn the tide of AMR

The Joint Programming Initiative on Antimicrobial Resistance, JPIAMR, is a unique international collaborative platform that coordinates national research funding and supports collaborative action for filling knowledge gaps on antimicrobial resistance with a One Health perspective. By mobilizing new and existing resources, the JPIAMR creates a greater critical mass and attracts new researchers into the AMR field. Our shared Strategic Research Agenda outlines the key areas to address and provides guidance for countries to align their AMR research agendas nationally and internationally.

JPIAMR also interacts with stakeholders such as World Health Organization (WHO), Association of South East Asian Nations (ASEAN), the Global Hub, the Group of Twenty and the Group of Seven (G7), 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), 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 2017

- New strategic plan 2018- 2020 and 2020-2025
- Four new JPIAMR members: Ireland, South Africa, India, Egypt
- Increase efforts in international coordination of AMR R&D funders and among AMR key global stakeholders (mentions in G7 and G20 statements)
- Launch of 7 Strategic Working Groups
- Develop a communication plan and a new social media strategy
- Organise three scientific workshops: Early Discovery of New Antibiotics (Paris, France), Environmental Dimensions of AMR (Gothenburg, Sweden) and Setting the scene for a JPIAMR Virtual Research Institute (Berlin, Germany).
- Launch 1 call: Fifth Joint JPIAMR Call: Comparison of Prevention, Control and Intervention Strategies for AMR Infections through Multidisciplinary Studies, including One Health.
- Start the development of a Virtual Research Institute
- Start the process of the SRiA update
- Start the research funding mapping exercise
- Enlarge the secretariat with 3 new team members
- Start a new EC CSA with a new 2.1 M euro budget

The JPIAMR boards activities

The governance and management structure of the 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 Management Board

The [JPIAMR Management Board](#) (MB) is the main decision making body of JPIAMR. Each of the 26 member countries has two representatives on the MB with a governmental mandate. The European Commission is a non-voting member. The MB meets formally twice per year in 2017 in Québec City, Canada (March 2017) and in Stockholm, Sweden (October 2017). In 2017, the JPIAMR has engaged four new members: Ireland, South Africa, India and Egypt.

JPIAMR Steering Committee

The [JPIAMR Steering Committee](#) (SC) provides steering direction of the JPIAMR and strategic input to undertake the JPIAMR mission. It is composed of Carlos Segovia (MB Chair, Spain), Jan-Ingvar Jönsson (MB Vice-Chair, Sweden), Andreas Aeschlimann (Switzerland), Antoine Andremont (France), and Marc Ouellette (Canada). The SC has a 2-year mandate and a new election will take place in January 2018. The SC meets regularly to discuss strategic issues, develop proposals for the MB and follow the implementation of activity of the Secretariat by teleconference (nine in 2017) and physical meetings (four in 2017: Brussels (February), Quebec (March), Brussels (June) and Berlin (November)).

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 task of the SAB in 2017 has been the SRA update and to provide advice to the MB regarding scientific priorities, workshops, the Virtual Research Institute and Calls. The SAB meet regularly and the most recent meetings have been in Brussels (February), Amsterdam (June), and Amsterdam (December). The SAB secretariat is The Netherlands Organisation for Health Research and Development (ZonMw), who serves as a link between the SAB and the MB. The current composition of the SAB is:

- Laura Piddock, University of Birmingham, United Kingdom (Chair)
- Teresa M Coque, Instituto Ramón y Cajal de Investigación (IRYCIS), Spain (Vice-Chair, 2017)
- Jean-Yves Madec, ANSES, France (Vice-Chair from 2018)
- Jocelyn Arquembourg, Sorbonne Université Paris, France
- Eric Brown, McMaster University, Canada
- Ana Maria de Roda Husman, RIVM Netherlands, The Netherlands
- Gunnar Skov Simonsen, University of Tromsø, Norway
- Richard Smith, London School of Hygiene and Tropical Medicine, United Kingdom
- Eva Tacconelli, University of Tübingen, Germany
- Petra Gastmeier, Institute for Hygiene and Environmental Medicine, Berlin, Germany
- Bruno Gonzales-Zorn, Complutense University, Madrid, Spain
- Jesús Rodríguez Baño, Hospital Universitario Virgen Macarena, Spain

- Mark Sobsey, University of North Carolina, USA
- Athanassios Tsakris, University of Athens, Greece
- Christina Greko, National Veterinary Institute, Sweden

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 Secretariat is hosted by the Swedish Research Council and at the end of 2017 employs ten part-time staff (5 FTEs): a Head of Secretariat (Laura Marin), three Senior Research Officers, a Senior Analyst, a Communications Officer, a Web Administrator, an Administrative Officer and a Financial Officer.

Coordination and Support Action: EXEDRA

The central staff of 5 FTEs 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 European Commission support in the form of a Coordination and Support Action (CSA) until 2020. This new CSA (EXEDRA) started in 2017 and has six work packages that mirror and support the activities of the JPIAMR Working Groups. The JPIAMR Secretariat is the coordinator of the CSA and it manages a budget of 2.1 M€ (2017-2020).

Update on JPIAMR activities

Evaluation and mapping activities

JPIAMR previously conducted a mapping exercise on scientific research from 2007-2013 in the area of antimicrobial resistance. In 2017, JPIAMR initiated a similar but more extensive mapping exercise on AMR related to projects and funding, research centres/units, research infrastructures, and industry alliances. The aim of this mapping is to enable researchers, funders and industries to (1) determine what has already been funded across the different areas of AMR research, (2) avoid duplication and identify potential partnering opportunities, and (3) determine what is still required in order to set strategic priorities.

JPIAMR is utilising the organised dataset on research landscape and infrastructure from the mapping exercise to develop a searchable database with tools allowing visual analysis of the dataset collected. It will serve as a resource tool for the scientific community, funders and other interested parties to gain insight into the scale and scope of publicly funded AMR research in member countries of JPIAMR.

JPIAMR Communication

In 2017, JPIAMR produced a communications plan and strategy, and planned the establishment of a Communications Network. Specific communications activities conducted in 2017 included:

- Reactivation of the digital toolbox, extended to include a JPIAMR YouTube channel and the Facebook page.
- Publication of online articles on www.jpiamr.eu/.

- Production of video interviews with key environmental AMR researchers from the Environmental workshop in Gothenburg (Figure 1) to highlight Environmental Dimension of AMR.



Figure 1. Video interviews with environmental AMR specialists Professor Ana Maria de Roda Husman and Professor Ramanan Laxminarayan.



- Increased the use of Twitter as a tool for JPIAMRs communication.
- Produced campaign materials (Figure 2) for the sixth call pre-announcement using a communications agency made available via the Swedish Research Council.

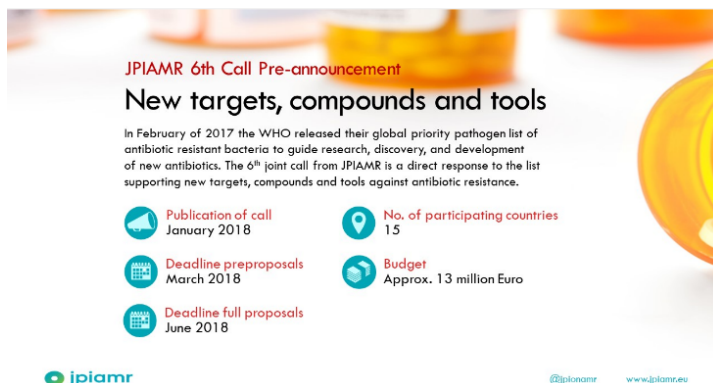


Figure 2. Pre-announcement material produced for the announcement of the sixth JPIAMR call on New Targets, compounds and tools.

- Published press releases and statements to communicate clear messages and initiatives linked to activities by the G20 and G7 meetings, as well as the Call to Action event held by Wellcome Trust and United Nation Foundation in Berlin.
- Featured in publications by international bodies such as G20, G7, WHO and other key organisations, highlighting JPIAMRs unique role and capabilities as a global coordinating platform of AMR research.

JPIAMR Stakeholder Relations

JPIAMR through its Steering Committee and Secretariat continues work in building strong ties with other AMR international initiatives or stakeholders.

At European level has been several meeting with the GPC (high-level group on Joint Programming), the other JPIs Chairs and the European Commission DG Research and DG Sante. An outcome of these conversations is the highlight of JPIAMR in the new “EU AMR Action Plan” where the EC states its commitment to support the JPIAMR Virtual Research Institute. We also have set a collaboration link with the DG Santé AMR Joint Action.

At global level JPIAMR has continue to strengthen the existing collaborations with: UN (invited to several of their meetings and survey on their coordination AMR group IACG); WHO (in providing input in the antibiotic pipeline analyses or in the stewardship framework among others); Transatlantic Task Force on AMR (TATFAR) exchanging information with the US; started discussions with the new AMR Global Hub; the November G7 Ministerial Meeting on Health supported JPIAMR; G20 Health Ministers May meeting pointed out JPIAMR as a key initiative; and ECDC in developing the European Antibiotic Awareness Day.

To develop an international AMR Funder’s forum with the key funding agencies, Wellcome hosted in December the first meeting of the AMR International Funders (JPIAMR, WHO, European Commission, Wellcome, AMR Global Fund, DNDi, IMI, CARBx, BARDA, Pew Trust, Gates, ECDC, CDC, EMA, FDA. In the meeting was about sharing background information and future strategies between initiatives will provided the foundation for strategic partnerships in funding AMR research. In 2018, JPIAMR will host the next meeting.

Strategic Workshops

JPIAMR identifies future joint actions through the organisation of [JPIAMR workshops](#). By bringing together experts from all relevant fields relating to a specific topic, the JPIAMR workshops map the research landscape and identify knowledge gaps. Using funding mechanisms and collaborative actions, JPIAMR sets in motion activities to fill these knowledge gaps. All workshops produce reports and recommendations to JPIAMR. The workshops that have been organised by JPIAMR in 2017 are:

Early Discovery of New Antibiotics, 12/13 January 2017, Paris France

JPIAMR host member: France (ANR), UK (MRC)

This workshop brought together over 20 projects on new targets and compounds funded by the two calls of JPIAMR and a Network call as well as by EC and IMI. The aim of the workshop was to share ideas on antibiotic development by bringing together the PIs in projects areas of antibiotic early discovery and those in clinical development in order to identify potential candidates and increase awareness of entry requirements, exchange experiences, approaches and lessons learnt so far.

Environmental Dimensions of AMR, 27/28 September 2017, Gothenburg Sweden

JPIAMR host member: Sweden (SRC)

Although far from clear, there is a growing knowledge on how selective agents and resistant bacteria reach the external environment. Better quantification of such pathways can help populate models and stratifying risks, noting that the risks for human health also depend on processes in the environment and the probability for resistant bacteria in the environment to reach humans. At this workshop, around 20 scientists discussed potential steps for addressing environmental AMR issues in a roadmap for the JPIAMR environment pillar.

Setting the scene for a JPIAMR Virtual Research Institute, 8/9 November 2017, Berlin Germany

JPIAMR host member: Canada (CIHR), Germany (DLR)

One of the current major goals of JPIAMR is to form a Virtual Research Institute (VRI) engaging the research community, and others, to address the issue of AMR jointly using a digital platform. The workshop in Berlin, jointly organised by CIHR Canada and DLR Germany, brought together

approximately 50 participants from research, policy, stakeholder organisations, research funding organisations, and other organisations in the AMR landscape, to discuss the formation of the JPIAMR-VRI.

International Events with JPIAMR Participation in 2017

- April 19 Paris MIUF Research Infrastructures meeting
- April 22-25 Vienna ECCMID
- June 6 London HIRO meeting
- June 21,22 London COVET workshop
- June 21,23 Braunschweig Gram-negative translocation workshop
- July 4,5 London UK AMR conference
- July 6,7 Brussels AMR vaccines meeting
- September 5,6 Brussels DRIVE-AB conference
- September 7,8 Santander Antimicrobial stewardship workshop
- September 13 Paris Joint Action on AMR and HCAI
- September 26,27 Vienna ERA-LEARN Training Course on Foresight on P2P
- October 12,13 Berlin UN AMR “Call to Action”
- October 16-17 Bangkok SEAEUNET
- October 24 Santiago de Chile Workshop AMR and Latin America
- November 6 Stockholm ESCAIDE
- November 7 Brussels JPIs and GP session on FP9 missions
- November 7,8 Brussels ERA-LEARN conference
- November 15 Brussels European Antibiotic Awareness Day
- December 1 London AMR R&D funders workshop

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, and regional conferences in the AMR and AMR governance field.

Calls

Core Call Steering Group

The JPIAMR Core Call steering group interacts regularly to develop calls and guidelines to support the activities of Joint Call Steering Groups. Members are representatives from former, present call secretariats, and the UK. The Core Call Steering Group regularly holds teleconferences and in 2017, the group focused on the development of common procedures for calls as well as guidelines to applicants to streamline and harmonise the JPIAMR calls.

Joint Transnational Calls for Proposals

Since 2014, JPIAMR has launched five joint transnational calls and one network/working group call funding 39 research projects (Figure 3) and 13 working groups (Figure 4). The goal of the JPIAMR calls is to foster multi-national translational research collaborations that can accomplish more than individual countries working independently, leading to improved control of bacterial infections.

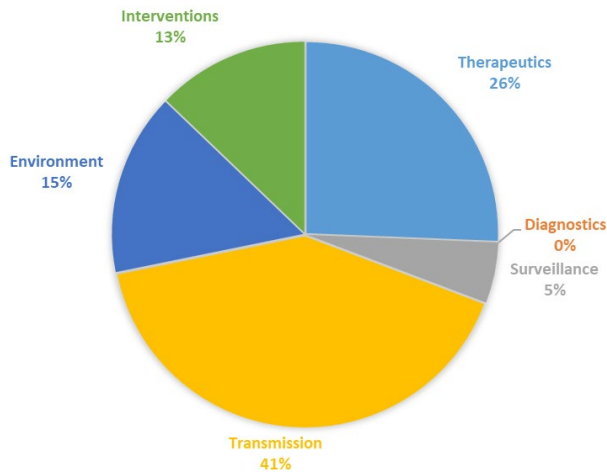
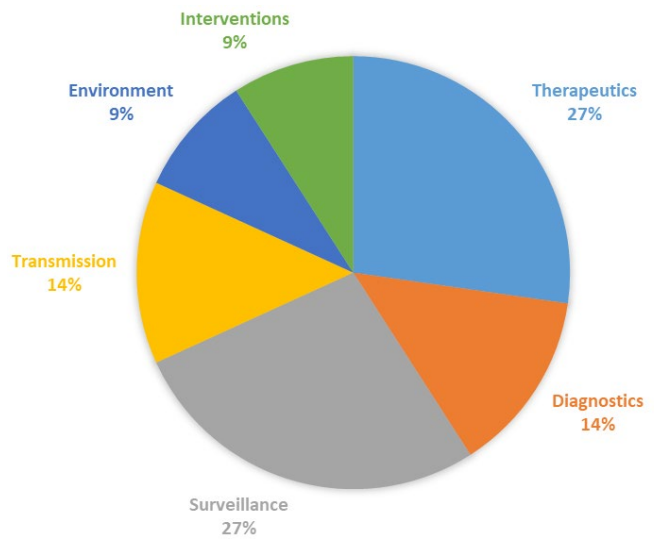


Figure 3. Research Projects funded by JPIAMR from 2014-2017, divided according to JPIAMR priority area. To date, 39 research projects have been funded by JPIAMR, contributing approx 52.5M € to AMR research.

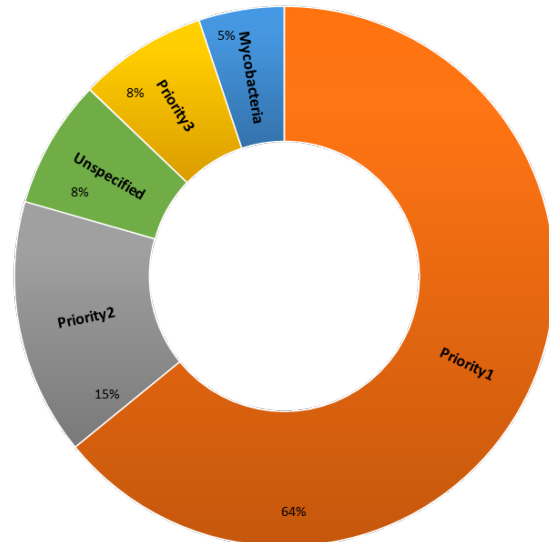
Figure 4. Network/Working Groups funded by JPIAMR, , divided according to JPIAMR priority area.. To date, 13 AMR networks/working groups have been funded by JPIAMR. The financial contribution to these calls is 0.65M €.



In 2017, JPIAMR launched its fifth joint call in Interventions (Comparison of prevention, control and intervention strategies for AMR infections through multidisciplinary studies, including One Health approaches) in the framework of the ERA-NET cofund: JPI-EC-AMR. The National Science Centre in Poland coordinated the Call Steering Group. The [results](#) from the fifth call were announced on Antibiotic Awareness Day 2017. Within this funding opportunity over EUR 11.5 million Euro were awarded to 10 projects involving 47 funded research groups from 11 countries (Canada, Germany, Ireland, Israel, Latvia, the Netherlands, Norway, Poland, Romania, Sweden and Switzerland), and an additional 6 international partners (Czech Republic, Israel, Romania and the USA). Projects funded in this call have covered topics including One Health interventions for infection control in humans and livestock, transmission to the food chain, and antimicrobial stewardship.

In 2018, the JPIAMR will launch the sixth joint call: Innovations against antibiotic-resistant bacteria: new targets, compounds and tools, as well as two Research Networks calls (Surveillance and VRI). The 2018 research project call focuses on the WHO Priority Pathogens¹. An analysis of the currently funded JPIAMR projects shows that the JPIAMR has already focused on funding pathogens belonging to the Priority 1, 2 and 3 classifications, as well as Mycobacteria (Figure 5). Projects where the pathogens are unspecified may also include WHO priority pathogens, although this is unclear from the applications.

Figure 5. JPIAMR supported research projects addressing pathogens categorised by WHO as priority pathogens.



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 approve the activities.

Working Group: Governance (Chair: Spain)

The Governance WG attended the JPI HDHL Workshop “Towards a self-sustainable JPI” in Brussels November 6th, 2017. At this workshop, the governance structures and plans for long-term sustainability of JPis HDHL, Water, Urban Europe, and Oceans were presented. JPis have a similar governance structure with cost associated with central secretariats covered by a combination of membership fees, EC support and in kind contributions. Oceans have decided to become a legal entity under Belgian law.

The WG also contributed to the development of the JPIAMR strategic documents [JPIAMR Strategy 2018-2020](#) and the [JPIAMR Future Strategy 2020-2025](#).

Working Group: Globalisation (Chair: Germany)

In 2017, the globalisation WG has developed promotional materials and a Welcome Package for new members. Four new members (Ireland, South Africa, India and Egypt) joined the JPIAMR consortium in 2017, and the WG held a breakout session to discuss the enlargement strategy of JPIAMR at the Management Board meeting in October. The WG is in the process of preparing an updated Membership Policy document. The WG held international awareness meetings in Chile and Thailand. A workshop in Latin America that will be held in autumn 2018 is currently being planned.

Working Group: Policy Alignment (Chair: Sweden)

¹ http://www.who.int/medicines/areas/rational_use/PPLreport_2017_09_19.pdf

Within 2017, the WG for policy alignment conducted a half-day meeting in Stockholm (October, 2017). The WG focused on the development of communication channels and strategies to reach policy makers and ways to bring forward knowledge and AMR awareness, such as increasing and broadening visibility towards politicians and/or governmental offices and towards international policy organisations by organised channels (mirror groups etc). The WG highlighted the need to speak with one voice to strengthen the message, by aligning positions in government and in international organisations, international representatives and JPIAMR members. The WG is in the process of developing a draft Action Plan.

[Working Group: Research Alignment](#) (Chair: The Netherlands)

The major goal of this WG for 2017 was to develop the process for updating the JPIAMR Strategic Research Agenda to a Strategic Research and Innovation Agenda. ZonMw hired a Project Manager to coordinate the SRA update and the WG has installed an Editorial Board (the working group 5.1). Together with the SAB, the WG is reviewing the SRA to identify gaps and sections requiring updating.

[Working Group: Virtual institute](#) (Chair: Canada)

One of the most interesting developments of the JPIAMR right now is the JPIAMR-VRI; the Virtual Research Institute on AMR. The 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 by increasing knowledge, diversity, collaborations and capability. In a two-day workshop in Berlin (November 8th and 9th) representatives from research organisations (WHO, Wellcome Trust, Pew Charitable Trusts, GardP, IMI, Tatfar, the European Commission, The Global AMR R&D Hub, and CARB-X, and others) developed the scope, aims and model of the JPIAMR-VRI. The JPIAMR-VRI workshop report and the JPIAMR-VRI network call are under preparation and will be completed and launched in 2018.

[Working Group: Research Infrastructures](#) (Chair: The Netherlands)

In 2017, the Research Infrastructures (RI) WG produced a landscape sketch of stakeholders, initiatives, policies, background documents, earlier reports from CSA1, and developed an action plan for realising the planned milestone and deliverables. The inventory includes information about two main topics: (1) AMR specific policies & initiatives and (2) open science policies, research data management and research infrastructure services. The RI and VRI WGs have explored options for collaborating since RI will be part of the VRI. Members of the RI WG joined the JPIAMR-VRI workshop in Berlin in November 2017. A collaboration with the CORBEL Catalogue of Services (COS) has been set up.

[Working Group: Industry relations](#) (Chair: UK)

This group is developing an action plan to strengthen alignment with industry and IMI by mapping and presenting existing initiatives, creating and maintaining a dialogue with key industrial partners. There are also developing a plan on how to engage with industrial partners and national innovation agencies, and the participation of SMEs in JPIAMR calls. In 2017, they have focus on the relations with IMI attending two meetings of their Infection Diseases Strategic Group, also attending meetings with the Vaccine industry, as well as with CARBX and BARDA. This group has also provide input in the elaboration of the WHO antibiotic pipeline analysis.