



INTERNATIONAL
CENTRE FOR
**ANTIMICROBIAL
RESISTANCE**
SOLUTIONS



**Partnering against
the next pandemic**

“AMR IS A MAJOR GLOBAL THREAT THAT CAN ONLY BE FACED BY A STRONG AND AMBITIOUS INTERNATIONAL PARTNERSHIP.”

- Robert Skov, Scientific Director

Antimicrobial resistance (AMR) is claiming hundreds of thousands of lives every year and is considered to be one of the greatest global health threats of today and of the future. At ICARS, we work with committed low- and middle-income countries (LMICs) to generate new AMR-mitigation solutions that are cost-effective and feasible to implement at a large scale, while relying on national and international partners to maximize our impact.

Following dialogue with the World Bank, ICARS was initiated by the Danish Government in late 2018. Since our inception, a growing number of LMICs have shown interest in partnering with us to advance the implementation of their AMR National Action Plans, and we are already engaged in project co-development with some of them. In order to reach our ambitions to support LMICs, we need countries and foundations to join in and support our efforts.

Therefore, we invite you to become part of ICARS as a member. Read on to learn more about our work, different types of membership and what they entail.

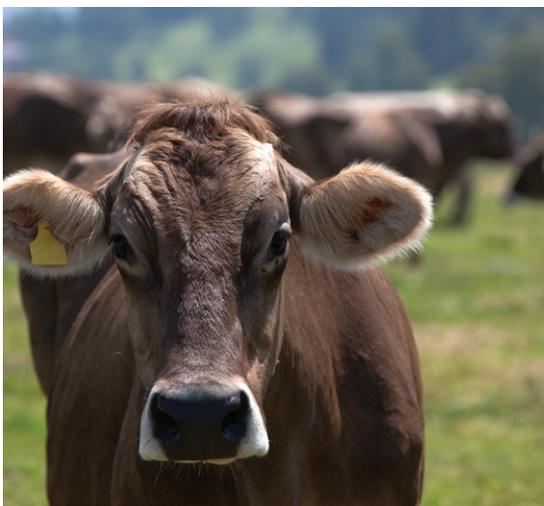
To find out more about ICARS, our mission, vision and activities, visit icars-global.org or get in touch with us at contact@icars-global.org.

Bringing evidence into action to reduce drug-resistant infections

Antimicrobial resistance (AMR) is one of the greatest threats to the health of humans, animals, crops and the environment. It is a One Health challenge that requires strong partnerships between government ministries and a range of national and regional stakeholders, including but not limited to research organizations, civil societies, and private and non-governmental sectors.

As of November 2020, 143 countries have developed National Action Plans (NAPs) for the mitigation of AMR (Tripartite global database for Antimicrobial Resistance Country Self-Assessment, 2019-2020). This is a very positive development that stems from an increase in global awareness of the threat of AMR and in policies aiming to mitigate it. However, as prominently highlighted in the April 2019 final report of the UN Inter-Agency Co-ordination Group (IACG) on AMR, implementation remains a challenge, particularly in low- and middle-income countries (LMICs).

At ICARS, our mission is to support low- and middle-income countries (LMICs) in their efforts to reduce drug-resistant infections. We do this by working closely with LMICs to co-create and co-develop AMR interventions that provide evidence for context-specific and cost-effective solutions for sustainable scale-up. ICARS provides funding as well as the expertise needed to support intervention and implementation research projects across the One Health spectrum, that build on the country's National Action Plan.



A One Health lens

ICARS takes a multidisciplinary approach and a broad definition of 'One Health'. This means that ICARS will develop projects in all sectors (human, animals, crops and the environment) and apply multidisciplinary approaches including but not limited to the biomedical, veterinary, agricultural, environmental disciplines. We further have a significant focus on social, behavioural and economic sciences. Projects and activities can have a monosectoral focus on AMR intervention research while recognizing the impact of and on other sectors.

A UNIQUE APPROACH

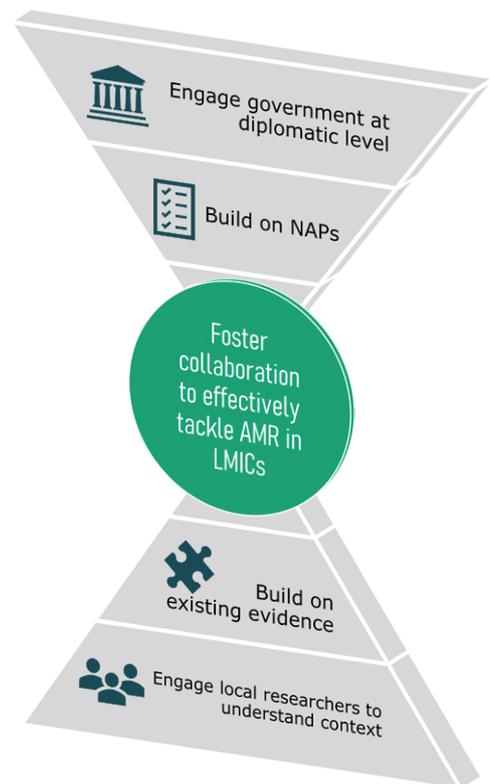
How ICARS works

It is the unique way of working, the “**how to?**”, that distinguishes ICARS from others in the AMR landscape.

ICARS provides a unique value proposition – a funded partnership, where we collaborate with LMICs to **co-develop evidence-based solutions** to combat AMR and advance NAP implementation.

But how?

Each country is different both in its approach to tackling AMR and in the type of issues that accelerate AMR at a local level. National commitment is crucial to ensure up-take and translation of interventions into large scale sustainable action including national policies, programmes and practices. By combining a **top-down and bottom-up** approach, ICARS secures commitment and ownership from the relevant government ministry (or ministries) while rooting the projects in scientific research conducted at local and national levels.



Context-specific

ICARS ensures that the projects are tailored to respond to each country's individual needs and challenges by working with ministries and local-level stakeholders to understand the context. Research activities are guided by the problems and knowledge gaps that countries have identified and are committed to solve.

Sustainable solutions

Perhaps most importantly, sustainable solutions require close attention to the enablers of behaviour change in the specific context. Only through behaviour change can solutions be maintained and have true impact. Implementation Research is an important tool for increasing the effectiveness of solutions in the long-term.

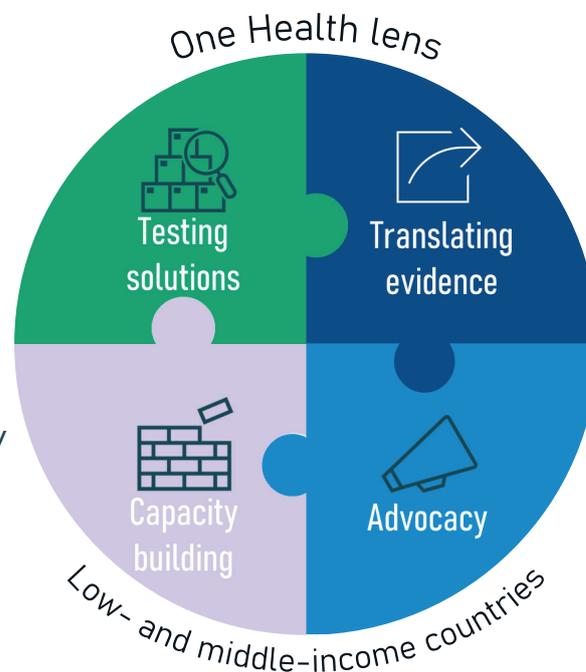
Cost-effective

Feasible solutions must be cost-effective, especially in an LMIC setting where resources are scarce, and they should provide an incentive for stakeholders to implement them in practice.

OUR STRATEGY

The ICARS strategy is based on four interconnected pillars:

- 1 Develop and test context-specific solutions for AMR mitigation
- 2 Translate existing evidence into action
- 3 Advocate for Intervention and Implementation Research as an important tool to tackle AMR
- 4 Support targeted capacity and capability building of AMR champions in LMICs



PILLAR 1

Develop and test context-specific solutions for AMR mitigation

The ICARS approach

ICARS partners with LMICs to develop and test solutions and associated implementation strategies to mitigate AMR and generate new evidence that can be implemented at a large scale. Countries applying to partner with ICARS must belong to the “DAC-list”. Upon discussions with LMIC ministries, ICARS initiates a stepwise process ensuring the co-development of high-quality Implementation Research projects with potential to mitigate AMR and generate new evidence that can be implemented at a large scale and have real impact.

The government ministries are responsible for the development and implementation of the research project, with support and advice from ICARS. At the same time, a wide range of stakeholders are involved

in the process from the beginning, be they practitioners, researchers or the private sector, to ensure buy-in and maximize the commitment for action from country partners. This results in a project plan that is co-developed with the country partners, and an effective implementation phase with efforts from all stakeholders.

The current operating model of ICARS includes co-developing and financing small scale ‘demonstration projects’ to test specific solutions over a **2-3-year period**. ICARS’ financial support for each project is typically approximately 0.5 million USD but can vary depending on the scope and size of the research project. We expect that the size and scope of projects will grow over the coming years.

Progress so far

As of February 2021, ICARS has entered Memorandums of Understanding with ministries in **Vietnam** and **Georgia** for four demonstration projects related to human and animal health, one of which has been approved and is ready for implementation. By the same date we have also initiated the development of projects in **seven other countries**. Examples include testing the usage of vaccines as an alternative to antibiotics in aqua-culture (Vietnam), banning colistin in pig production (Vietnam), as well as improving antibiotic stewardship in hospital settings (Georgia) and reducing the use of antibiotics in the poultry production (Georgia). Discussions are currently ongoing with a number of other countries.

Goals for the coming years

ICARS aims to develop a substantial portfolio of demonstration projects that support LMICs in delivering on their National Action Plans. The portfolio of projects will cover the entire One Health spectrum and all regions of the world. Initial contacts show a great interest from LMICs in partnering with ICARS and we plan for the portfolio of projects to increase progressively in the coming years, depending on funding.



DEMONSTRATION PROJECT IN VIETNAM

Reducing the use of antibiotics in aquaculture

Vietnam is the world's largest producer and exporter of Pangasius (catfish) and in 2017 sold 1.2 million tonnes valued at €1.8 billion. Bacterial pathogens are causing diseases in Pangasius, and although vaccines are available, they are not widely used. Farmers prepare their own medicated feed using high quantities of antimicrobials of varying quality, resulting in differences of antimicrobial content in the medicated feed. The project supported by ICARS engages major Pangasius producers, vaccine companies, government staff and relevant local research expertise. It is designed to build on already-established commercial partnerships between Pangasius farms and vaccine developers. The aim of the project is to provide **sustainable and cost-effective practices** that can reduce the use of antimicrobials in Pangasius production, the ultimate goal being that solutions be taken up in both policies and practices.



Antimicrobial resistance is a public health threat that requires immediate attention. A robust global action is needed. The consequence of our partnership with ICARS will be a strengthened antimicrobial stewardship in Georgia. (...) the outcome of this project will be beneficial and applicable beyond Georgia as well - for other countries of the region.

Giorgi Chakhunashvili MD., PhD.
Georgian National Center for Disease
Control and Public Health (NCDC)

PILLAR 2

Translate existing evidence into action

The ICARS approach

At ICARS, we support the translation of existing evidence into country policies, programmes and practice to close the knowledge gap between evidence-based interventions and solutions and their practical implementation in LMICs. We do this by analyzing and reviewing the existing evidence and where appropriate engaging with and facilitating dialogue between the research community and the relevant ministries to identify barriers and enablers for the implementation of such solutions.

Progress so far

Building on Vietnam's success in addressing COVID-19, we are currently initiating discussions between several stakeholders in Vietnam to develop a strong case for hospital screening for carbapenem-resistant Enterobacterales upon admission to be considered by the Vietnam Ministry of Health.

Goals for the coming years

Currently, we are undertaking an exercise of mapping existing evidence of AMR interventions in LMICs that will support our work to engage with specific countries on implementation based on existing evidence. This mapping exercise will generate a repository of interventions that can be translated into action using context-specific implementation strategies. We aim to develop this area of work and engage with multiple countries, depending on funding, in the coming years.

PILLAR 3

Advocate for Intervention and Implementation Research as an important tool to tackle AMR

The ICARS approach

ICARS engages with national and international partners to raise awareness and promote the need for Implementation Research in AMR as a means to deliver on National Action Plans, as well as advocate for more investment in this area of research.

Progress so far

ICARS has entered into a collaboration agreement with the WHO aimed at strengthening One Health intervention research in LMICs. This involves two-year support (including a secondee from ICARS) to WHO to develop a One Health global Implementation Research agenda for AMR. ICARS has also signed collaborative agreements with CGIAR and ReAct and is signing an agreement with ILRI on projects and informational/advocacy activities to tackle AMR in LMICs.

In addition, we are initiating collaboration with a range of stakeholders to identify relevant opportunities to advocate for the need of Implementation Research in combatting AMR. These include high level round tables with different ministries and governments, dedicated ICARS-convened Implementation Research sessions at national and international conferences and workshops, opinion pieces in academic, mainstream and social media as well as communication material tailored to policymakers.

Goals for the coming years

We aim to influence more funders to prioritise this area of research and increase their investment. In addition, we also strive to become the 'go to' partner for AMR Implementation Research and intervention development in LMICs.



What is Implementation Research?

ICARS defines Implementation Research as research that facilitates the uptake of evidence-based interventions and research findings and addresses implementation bottlenecks using optimal approaches for a particular setting. It is conducted in real world settings in real time using methods that are fit for purpose, focusing on processes and outcomes. Implementation Research is relevant, context-specific, demand driven, multidisciplinary, and involves multiple stakeholders.

PILLAR 4

Support targeted capacity and capability building of AMR champions in LMICs

The ICARS approach

ICARS provides policy leaders and professionals in LMICs with relevant training to support the implementation of targeted activities to tackle AMR. As part of the training, ICARS works with partners to expand the implementation of existing successful capacity building tools for the benefit of professionals in partner LMICs. Through its work, ICARS contributes to the creation and nurturing of a critical mass of researchers and local 'AMR champions' with the knowledge and skills to conduct and advocate for Implementation Research.

Progress so far

Through collaboration with ILRI, ICARS supports the creation of an Antimicrobial Susceptibility Testing Centre for Excellence at ILRI to increase microbiology capacity in LMICs. ICARS has also initiated discussions with ReAct to collaborate on the implementation of their toolbox which will provide a wealth of resource and training to LMICs researchers, professionals and policymakers.

ICARS is entering into collaboration with the Joint Programming Initiative on AMR (JPIAMR) to support LMIC researchers to partner with international researchers in Europe and Canada and develop collaborative proposals in Intervention and Implementation Research. The partnership will provide capacity-building opportunities to LMIC researchers, as well encourage engagement with relevant LMIC ministries.

Goals for the coming years

ICARS aims to increase capacity in each of its partner countries, facilitating dialogue between science and policy and developing a cadre of local AMR champions and future leaders in AMR Implementation Research.



Establishing a global reference centre on Antimicrobial Susceptibility Testing (AST) for LMICs

There is an urgent need for a more targeted use of antimicrobials (antibiotic stewardship) to decrease antibiotic use globally. A targeted use of antibiotics depends on laboratories offering timely and accurate determination of the antibiotic susceptibility in both in human and veterinary medicine. Accurate susceptibility testing (AST) tells us which antibiotics a bacterium might be sensitive to and is thus of great importance for appropriate treatment of the individual patient as well as for local, national and global surveillance.

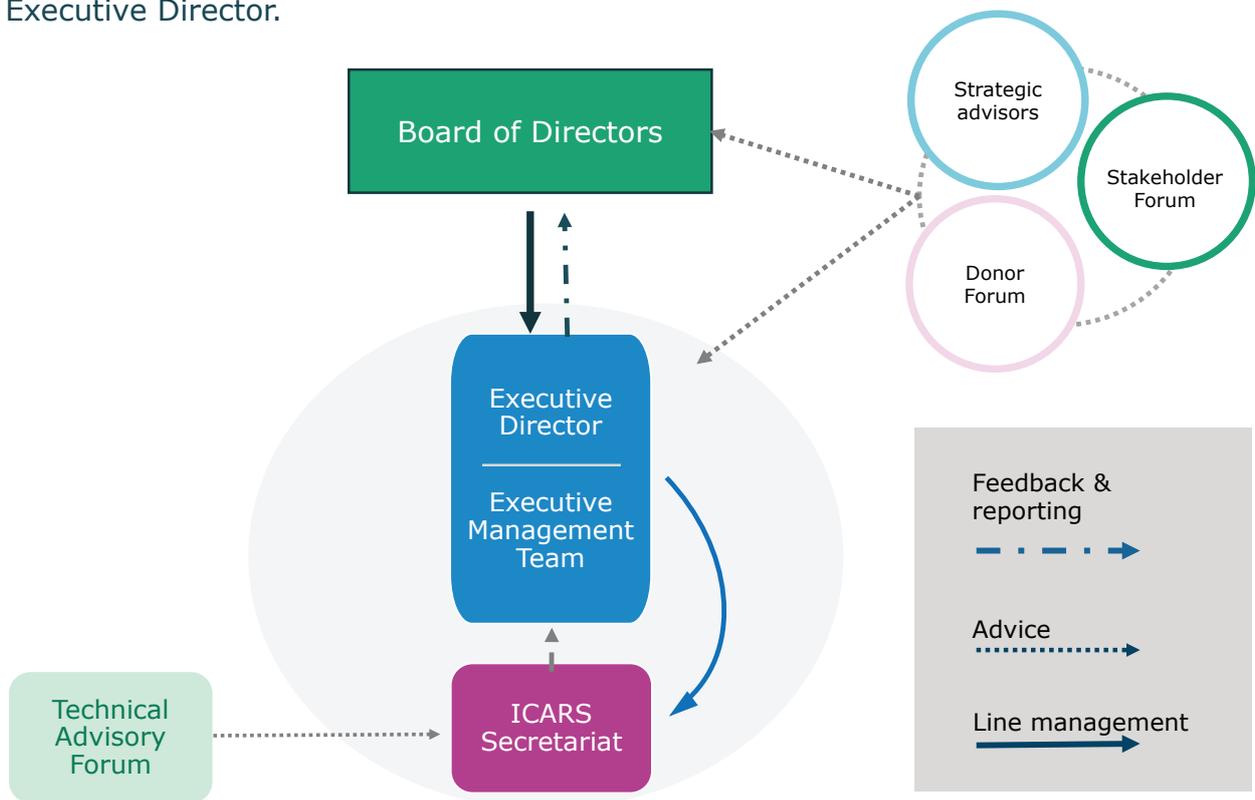
ICARS is assisting the establishment of an AST Lab, which will be based at the International Livestock Research Institute in Kenya. The project is building a global reference laboratory infrastructure and AST services that will offer consultancy, training and technical advice to scientists across the CGIAR and partner organizations. This is done in collaboration with the European Committee on Antimicrobial Susceptibility Testing (EUCAST) Development Laboratory (EDL).

GOVERNANCE

ICARS' organisational goal is to become an international organisation. In order to reach this goal, ICARS' governance will evolve over 2-4 years: from being embedded in the Danish Ministry of Health (2020), to a transition-phase as an independent institution with an international Board of Directors (from 2021), and finally into an international organisation (2023-2024).

Governance structure from spring 2021

From spring 2021, ICARS is becoming an independent institution with its own legal identity in accordance with Danish law governed by an international Board of Directors. The Danish government will appoint a small initial board of 4-5 members who will lead ICARS during its inception phase from 2021-22. The Board of Directors is anticipated to grow during the inception phase as other countries and foundations join ICARS as Founding Members and are offered a seat at the Board in that capacity. One of the important tasks for the initial Board of Directors in 2021 will be to select ICARS first Executive Director.



Progress so far

As of spring 2021, ICARS staff consists of an international team of 17 dedicated and skilled employees, including a Scientific Director and a Director of Operations, working either at ICARS headquarters in Copenhagen or remotely across the globe as independent consultants. Depending on funding, ICARS will continue to grow within the next couple of years as the project portfolio expands and as ICARS becomes increasingly present in the global AMR landscape.

GOVERNANCE

Join ICARS

ICARS is inviting countries and foundations that are committed to changing the course for AMR to join ICARS as a **Founding Member** or **Supporting Member**. This is a rare opportunity to join an international organisation in its early days.

Founding Member

Countries or foundations who are ready to fully engage and take joint responsibility of our ambitious mission and goals are invited to join ICARS as Founding Members. In return for that commitment, Founding Members are offered a seat on the initial Board of Directors (with the possibility of reappointment after 2022) and hence the possibility to influence ICARS at an exciting time when we evolve our strategy and organisation and expand our partnerships and activities with LMICs. After 2023, Founding Members will be invited to nominate members when seats become available on ICARS Board of Directors. Founding Members are asked to provide substantial multiyear financial contribution to ICARS.

Supporting Member

All contributions, core funding, earmarked funding to specific projects or in-kind contributions are most welcome and valuable to our cause. Thus, we also welcome countries and foundations interested in joining ICARS as Supporting Members. A country or a foundation can become a Supporting Member of ICARS by providing a financial or in-kind contribution of any type. Supporting Members will be invited to advise on the strategic development, as well as other important aspects of ICARS. In the near future, we will establish formal structures to ensure the advisory role of Supporting Members.

Membership	Substantial contribution	Offers strategic advice	Seat on Board of Directors
Founding Member	Mandatory	Yes, directly	Yes
Supporting Member	Optional (any contribution is welcome)	Yes, indirectly	No

We want to hear from you!

If your country or foundation is interested in joining ICARS to support our efforts in mitigating AMR, please do not hesitate to contact us. We are currently expanding our donor portfolio and we are always happy to discuss a possible membership.

If you have any questions about our work or partnership opportunities, please write to us at contact@icars-global.org.

Visit icars-global.org to find out more.

You can also find us on social media:



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