# IVI's Antimicrobial Resistance (AMR) Initiative

**DCVMN AGM**

**Bali Indonesia**

**October 2025**

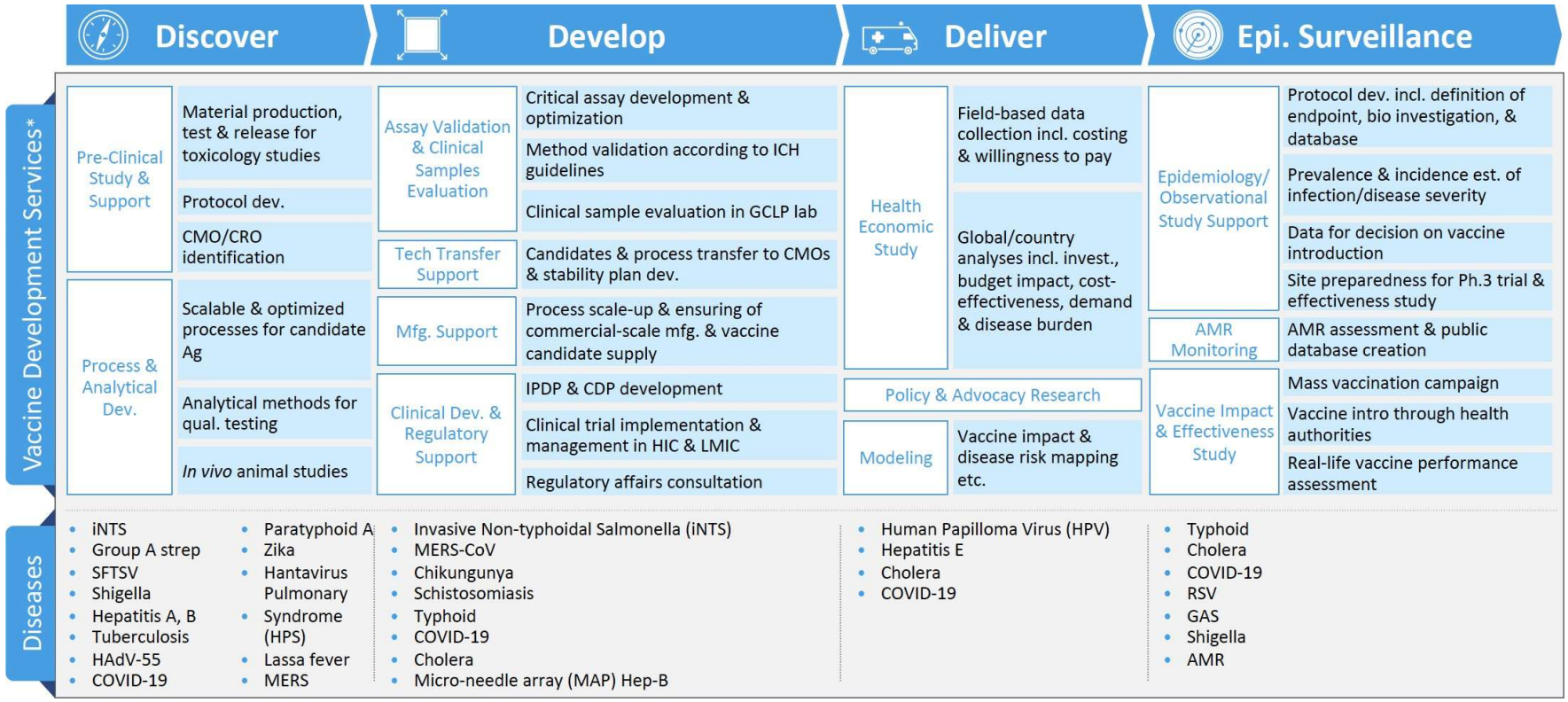
International Vaccine Institute

# IVI: Who we are -- where we work -- what we do

**IVI is an UN-chartered international organization dedicated to accelerating vaccine R&D for global health**

**Our mission:** Discover, develop, and deliver safe, effective, and affordable vaccines—empowering vaccine equity, impact, and sustainability globally

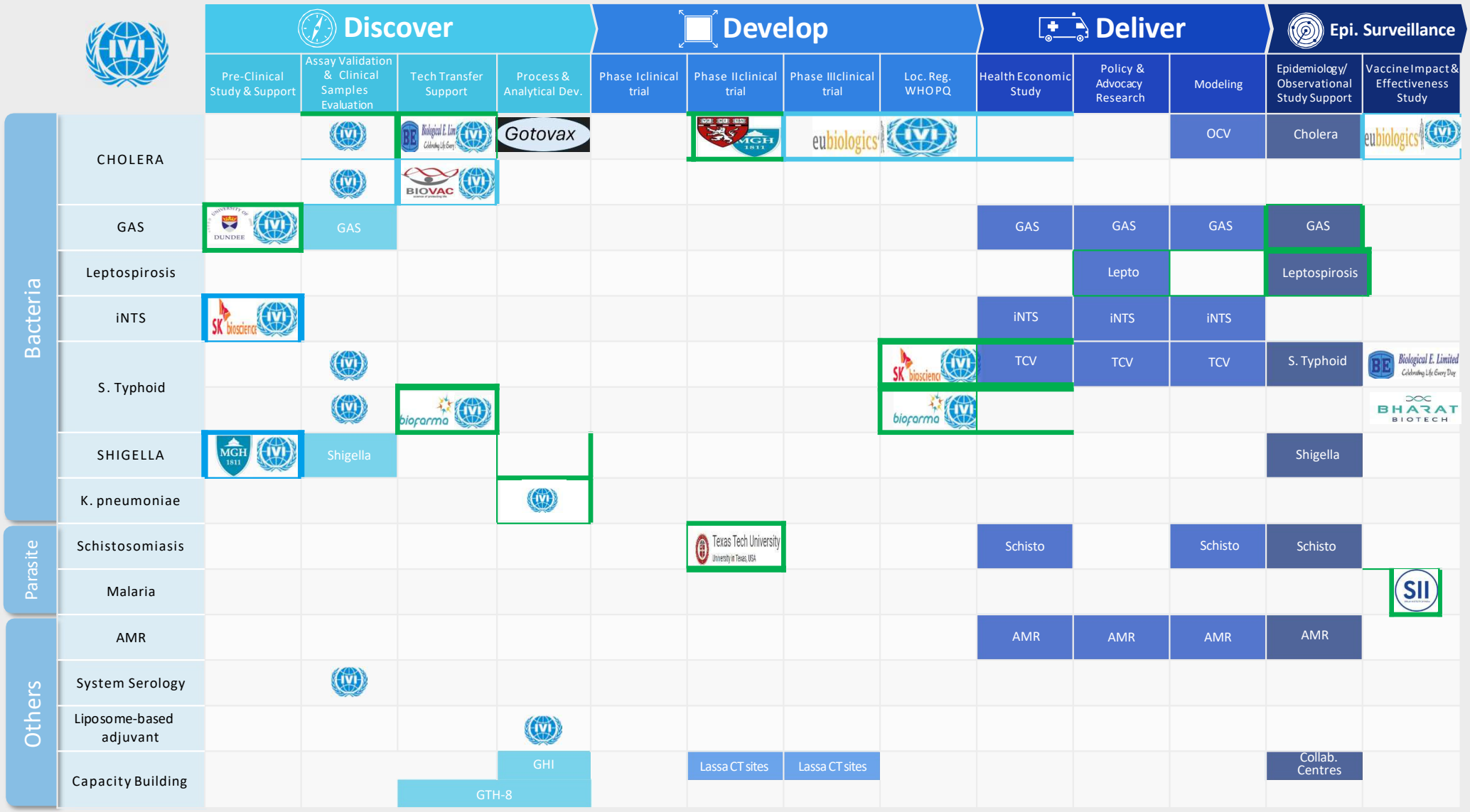
**Our vision:** A healthier world made possible by vaccination, available to everyone, everywhere

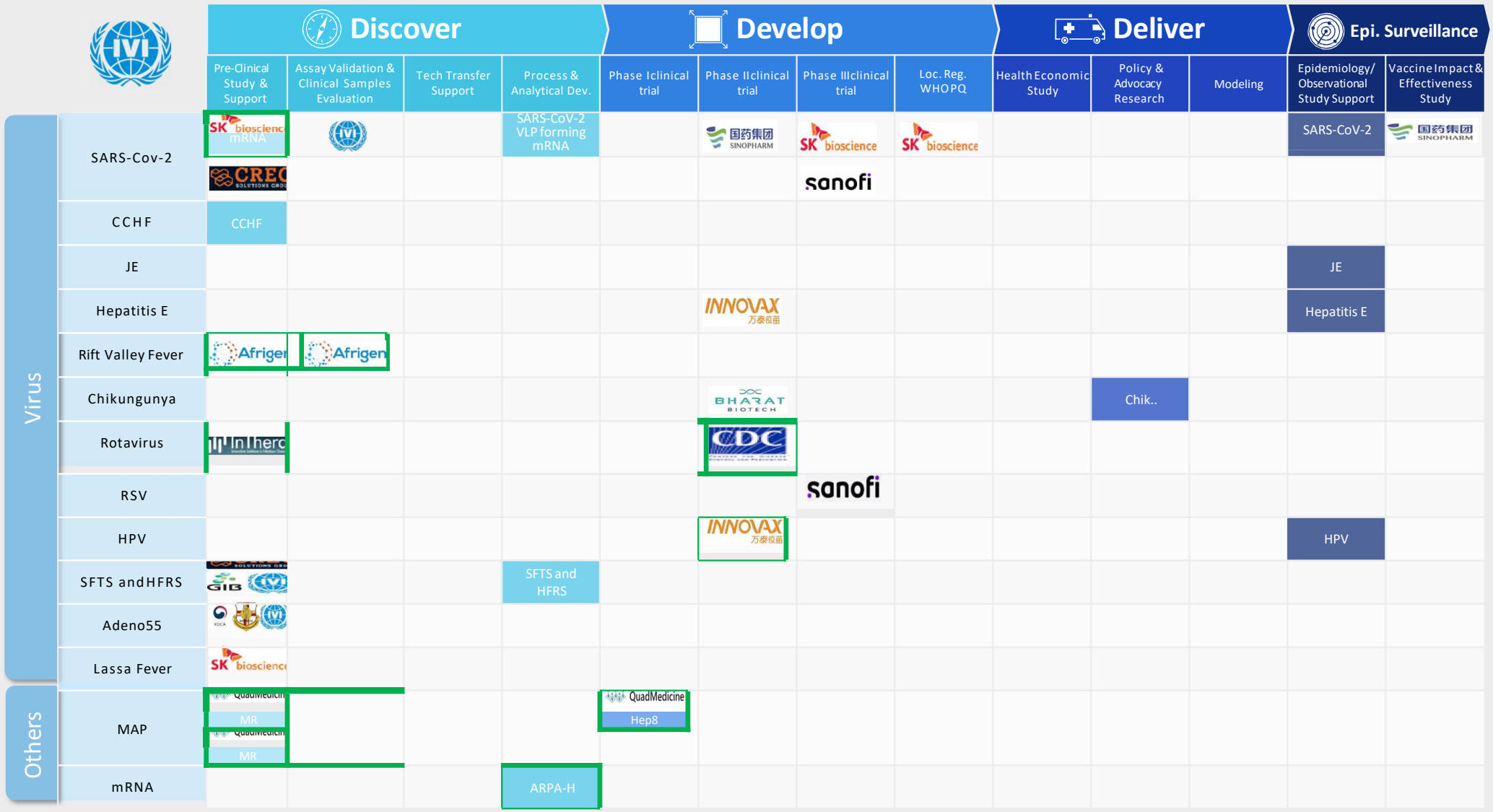


# IVI: Who we are -- where we work -- what we do



42 countries and WHO as state parties and signatories
13 countries pending final submission to UN


Discover
Develop
Deliver
Epi. Surveillance
Pre-Clinical Study & Support
Assay Validation & Clinical Samples Evaluation
Tech Transfer Support
Process & Analytical Dev.
Phase Iclinical trial
Phase IIclinical trial
Phase IIIclinical trial
Loc. Reg. WHO PQ
Health Economic Study
Policy & Advocacy Research
Modeling
Epidemiology/ Observational Study Support
VaccineImpact& Effectiveness Study
Bacteria
Parasite
Others
CHOLERA
GAS
Leptospirosis
iNTS
S. Typhoid
SHIGELLA
K. pneumoniae
Schistosomiasis
Malaria
AMR
System Serology
Liposome-based adjuvant
Capacity Building
Gotovax
BIOVAC
eubiologics
Texas Tech University
OCV
Cholera
Lepto
Leptospirosis
Shigella
Schisto
GHI
Lassa CT sites
Collab. Centres
GTH-8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JE
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Hepatitis E
Hepatitis E
Rift Valley Fever
Chikungunya
Chik..
Rotavirus
RSV
HPV
HPV
SFTS andHFRS
SFTS and HFRS
Adeno55
Lassa Fever
MAP
MR
MR
Hep8
mRNA
ARPA-H

# Six Years of AMR at IVI *Reflections on Our Journey*

## FROM Policy/Advocacy/System Strengthening/Data Sharing TO Impact Assessment of Vaccine on AMR

**2019** → **2025**

CAPTURA · RADAAR Regional AMR Data Analysis for Advocacy, Response, and Policy · EQASIA Fleming Fund

CAPTURA 2 · RADAAR 2 Regional AMR Data Analysis for Advocacy, Response, and Policy · EQASIA 2 Fleming Fund

TADEU ASIA Technical Assistance for Data and Evidence Use · TACE ASIA Technical Assistance for Clinical Engagement

**Impact of Vaccine on AMR in Madagascar and DRC**

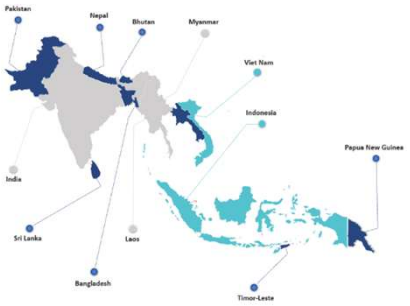
**AMR Burden Landscape Analysis in WHO-SEAR**

### Contributing to AMR containment effort

- Capacity building & Surveillance systems strengthening
- Generate evidence & provide technical expertise
- Use of data for policy development and advocacy
- Knowledge and research hub
- Partnership and collaborations

### IVI recognized globally as an important organization contributing towards AMR containment

- Continued support for capacity building, system strengthening and case management.
- Strengthen capacities to translate AMR data into effective policies.
- Utilize high-quality lab data for better clinical case management.
- Reviews and research on the disease and economic burden on AMR.
- Assess the impact of vaccination on AMR reduction.






# Ongoing AMR Projects at IVI: 2023-2025

## Fleming Fund Supported projects (HQ)

### CAPTURA-2

Consortium with U Heidelberg, Swipe Rx, Harvard, Uni of Melbourne

- **Support for generation and use of quality AMR data**
  - mapping activity, stakeholder engagement, capacity building
  - Support national AMR action plans

### EQAsia-2

Consortium with DTU Food, Chulalongkorn University

- **Improving the Quality of Bacteriology Diagnostics for AMR**
  - Strengthen External Quality Assurance for AMR

### RADAAR-2

Consortium with WHO, Harvard, DetaLeads, React Africa

- **Improving data analysis and sharing**
  - Regional bodies are supported for data sharing and policy-relevant analysis

### Technical Assistance for Data & Evidence Use – Asia

Consortium with eSHIFT

- **AMR/U/C data use for AMR containment and policymaking**
  - Use of quality data for policymaking
  - Conduct Political Economic Analysis (PEA) of AMR at national and regional level

### TA for Clinical Engagement Asia

Consortium with University of Oxford, St George's Uni of London

- **Use of quality laboratory data for clinical case management**
  - Estimate burden of AMR
  - Engage clinical partitioner on use of quality laboratory for case management
  - Advocacy for data use in clinical practice
  - Promote infection control practices and antimicrobial stewardship

## IVI Supported projects (HQ)

### Impact of Vaccine on AMR in Madagascar and DRC

Partner with MRVI

- Assessment of impact of Vaccination following TCV/Malaria vaccination
  - Assessment of human microbiome in vaccinated vs unvaccinated individuals
  - AMU following mass TCV vaccination

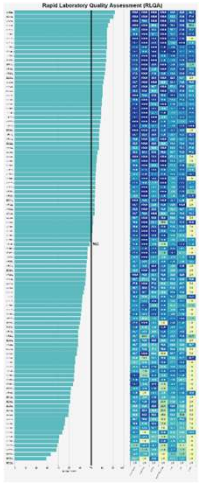
## IVI Supported projects (IERO)

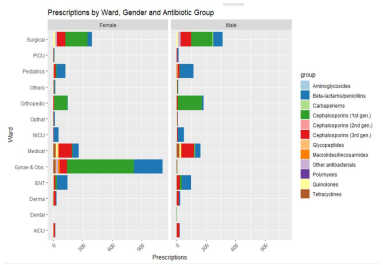
### Mind the Gap

IVI

- **Mapping, advocacy and collaboration**
  - Mapping and analysis of publicly available funding data on vaccines against bacterial pathogens
  - Participate in conference and meetings; collaborate with ICARS

# Key Learnings and Insight






**CAPTURA I:**

No of Labs

**852**

No of labs sharing data

**72** Lab

Collated records

**2.3M** Records


- Manual data collection
- Inadequate equipment's and human resources (HR)

**Infrastructure**

- Huge amount of data not being shared
- Varying data standards across region
- Concerns regarding representative, reliable, appropriate quality data

**Data Quality**

- Trust issues in data sharing
- No specific legislation for secure data sharing

**Data Privacy/ Security**

**Addressing the Challenges: FAST Approach**

**F** **Frameworks and Protocols:** Implement standardized frameworks and protocols to enhance data confidence and reliability.

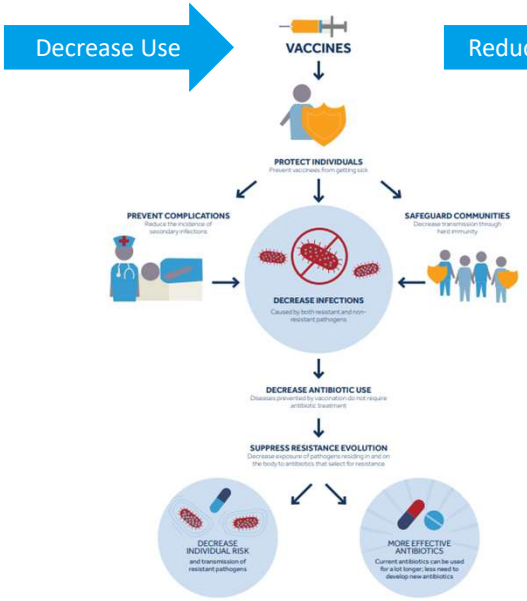
**A** **Advanced Technology Integration:** Invest in technologically advanced data collection tools and infrastructure for sustainable data generation.

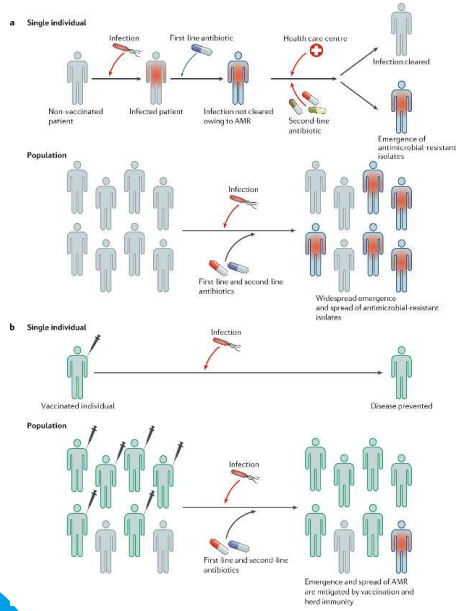
**S** **Skills and Training:** Provide training on data security, safety, and management to enhance capacity and trust among data handlers.

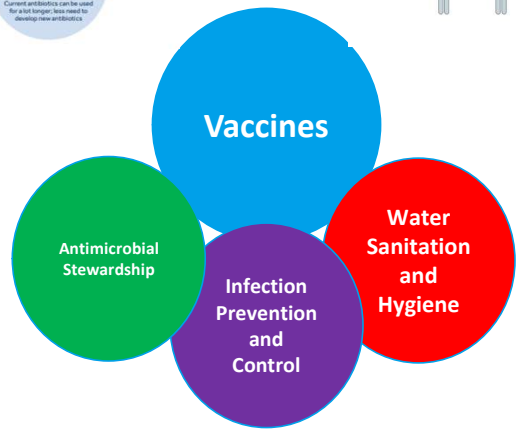
**T** **Trust Building and Coordination:** Establish a neutral coordinating center and secure data-sharing agreements to foster international collaboration and build trust.

# Treatment and Prevention: Shifting Focus for AMR Control

**Antibacterial agents in the clinical pipeline combined with those approved in the last six years are still insufficient to tackle the ever-growing threat of the emergence and spread of drug-resistant infections**

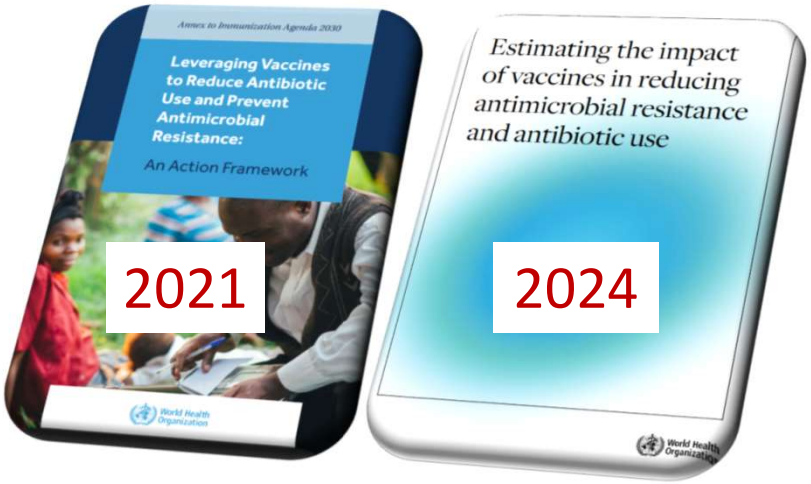



# AMR Aligns with IVI's Mission:

*"Addressing antimicrobial resistance starts with preventing infections, and **vaccines are among the most powerful tools** for doing that,"*
*Dr Tedros Adhanom Ghebreyesus, WHO Director-General*




| | Existing Vaccines | Late-stage Clinical Development | Early Clinical Development |
|---|---|---|---|
| Death Averted | 106,000 | 135,000 | 408,000 |
| Hospital Cost | 861 million | 1.2 billion | 30 billion |
| DALYs | 9.1 million | 5.0 million | 23 million |

**More investment in vaccines could avert deaths due to antimicrobial resistance, reduce antibiotic use and save money treating resistant infections**

## Recommendations

- Include vaccines as interventions to reduce AMR
- Inclusion of AMR component in all vaccine studies
- Monitor impact of existing vaccine to inform policy decisions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Review Article | Published: 04 February 2021

**The role of vaccines in combatting antimicrobial resistance**

Francesca Micoli, Fabio Bagnoli, Rino Rappuoli & Da

Clinical Infectious Diseases
SUPPLEMENT ARTICLE

IDSA Infectious Diseases Society of America · hivma hiv medicine association · OXFORD

Vaccination to Reduce Antimicrobial Resistance Burden—Data Gaps and Future Research

Birkneh Tilahun Tadesse, Karen H. Keddy, Natasha Y. Rickett, Aidai Zhusupbekova, Nimesh Poudyal, Trevor Lawley, Majdi Osman, Gordon Dougan, Jerome H. Kim, Jung-Seok Lee, Hyon Jin Jeon and Florian Marks

Downlo

# AMR and Vaccines

Vaccines against **23 pathogens:** Reduce the number of antibiotics needed by 22% or 2.5 billion defined daily doses globally every year (WHO Oct 2024)

| Vaccine with estimated and potential impact on AMR | IVI portfolio |
|---|---|
| *M. tuberculosis* | ✓ |
| *S.* Typhi | ✓ |
| Malaria Vaccine | ✓ |
| RSV | ✓ |
| ***K. pneumoniae*** | ✓ |
| **GAS** | ✓ |
| **Shigella** | ✓ |
| **iNTS** | ✓ |
| ***H. pylori*** | ✓ |
| **Rota** | ✓ |

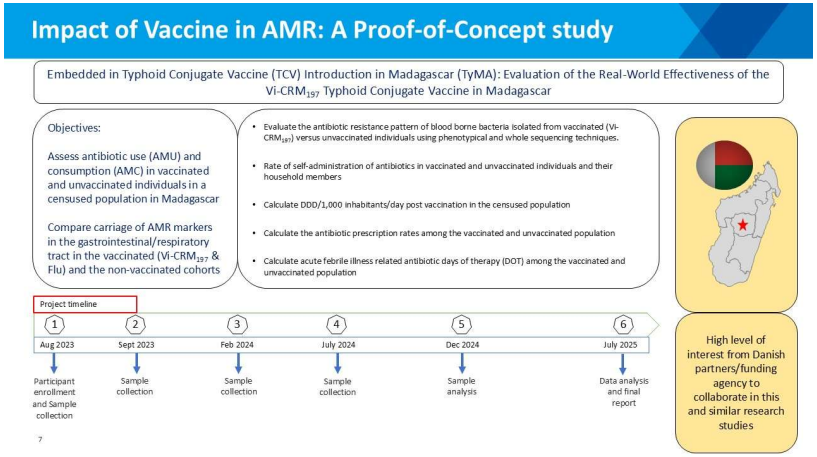
Only global institute working on developing and promoting use of multiple vaccines to combat AMR



Advocating and Promoting AMR and Vaccine Agenda Globally

RADAAR 2 | EQASIA 2 | CAPTURA 2

AMR Burden Landscape Analysis in WHO-SEAR | TADEU ASIA Technical Assistance for Data and Evidence Use | TACE ASIA Technical Assistance for Clinical Engagement | Impact of Vaccine on AMR in Madagascar




Leading Research for Generating Real-World Evidence on “Burden of AMR” and “Impact of Vaccines on AMR”

# Conclusion and Future Directions

Regional data sharing is crucial in building the capacity for early and effective responses to AMR threats, enabling timely detection, coordinated action, and resource sharing across borders to contain outbreaks swiftly and protect public health.

There is a critical need to establish regional **Centers of Excellence and Knowledge Hubs for AMR in Asia and Africa**, dedicated to providing **TECHNICAL SUPPORT**, enhancing **CAPACITY BUILDING**, coordinating **REGIONAL DATA SHARING** efforts and **VACCINE RESEARCH** to drive effective AMR prevention, management and policy development.

**IVI well-positioned to lead such efforts given its strategic objectives, capacity, and extensive experience in vaccine research, system strengthening, surveillance, and public health interventions.**

**Regional established networks in Asia and Africa can support implementation of impactful AMR solutions.**

# In Brief: BRIGHT fund

**BRIGHT fund**

(**B**ridging **R**esearch **I**nvestment in **G**lobal **H**ealth **T**echnology **F**und)

**Global South–led multi-donor global platform**
**to accelerate vaccine, drug, diagnostic, and digital health innovation; Anchored by economies with manufacturing capacity**

IARO

GAC

IERO

SPQR

**Mission & Vision:**

- Provide **leadership** to **accelerate vaccine, diagnostic, drug, and digital health innovation**
- To localize R&D to **support local production**.
- **Ensure access** to critical technologies
- To provide **diversified, leveraged financing**.
- To **strengthen health sovereignty** in Low- and Middle-Income Countries (LMICs).

| Year 1. Engagement & Announcement | Year 2. Foundation Building | Year 3. Global Launch & Pilot Projects |
|---|---|---|
| - Secure commitments from major donor nations (Brazil, India, S. Africa, Indonesia, Nigeria, Egypt, UAE) and smaller nations (Latin America, Asia, Africa)<br>- Announcement at major global event | - Formation of Establishment Committee and ad hoc Board of Directors<br>- Identification of HQ<br>- Establishment of administrative structure & operating procedures leveraging experience of RIGHT and GHIT | - Officially launch the BRIGHT Fund<br>- Call for proposals<br>- Initiate funding for projects<br>- Early demonstrations of impact |