The impact of diagnostics in Antimicrobial Resistance

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FIND at a glance

- 190+ people working toward a world where diagnosis guides the way to health for everyone
- Headquartered in Geneva, Switzerland
- Country offices in key LMICs
- Partnerships with industry, research/academia, government agencies and NGOs

Our mission:
Turning complex diagnostic challenges into simple solutions to overcome diseases of poverty and transform lives
We bridge science with patients to transform lives

SCIENCE

PRODUCTS

SOLUTIONS

PATIENTS

Catalyse development
- Dynamic needs definition
- S4S: Support programme for manufacturers

Guide use & policy
- Clinical trials
- WHO evidence & guideline development

Accelerate access
- National policy
- Roll-out planning
- Gap analysis and solutions
- QA tools and strategies

Shape the agenda
- Impact of diagnostics
- Diagnostic ecosystem changes
- Emerging diagnostics topics

Tuberculosis

Emerging Threats

Neglected Tropical Diseases

Hepatitis C & HIV

Malaria & Fever

E-Diagnostics
FIND’s AMR strategy: geared to save patient lives and strengthen health systems

Optimizing use of antimicrobials

Point-of-care tests will enable the selection of optimal therapies for common non-bacterial infections* and reduce overuse of existing antibiotics

Preserving new drugs

Diagnostic tools to accompany new treatments will shield them from rapid overuse and early emergence of resistance

Empowering surveillance efforts

Connected surveillance tools will track and map the emergence of resistance and enable control measures and improved treatment strategies

Country-based evidence to guide policy changes

The Diagnostics Use Accelerator is an in-country demonstration study platform to stimulate research and speed up data generation to guide policy changes and drive behaviour change in healthcare workers and patients
In-country platform to evaluate currently available diagnostics coupled with electronic clinical decision aid tools and behavior change initiatives to guide policy decisions for implementation.

First Wave: 2019-2020

- Children and adolescents presenting to outpatient clinics with undifferentiated febrile illness
- Competitive selection process → 15 applicants → 5 countries being evaluated
  - 3 from Africa region
  - 2 for South East Asia
  - India

Outcomes: does the combination of diagnostics + eCDAs + behaviour change lead to an improvement in antibiotic use by reducing their overuse in patients with non-bacterial infections?
Stewardship of new antibiotics through diagnostics

- Syndromic patient management will lead to overtreatment of patients with new antibiotics

- Preserving new (and current) antibiotics requires the introduction of a diagnostic-based clinical algorithm

WHO AWaRe: Access, Watch, Reserve approach to antibiotic use
Substandard and falsified (SF) antibiotics erode patient care and contribute to the emergence of resistance by exposing pathogens to ineffective doses of medications.

Performance evaluation and in-country testing will provide insight into 3 different diagnostic technologies with the aim to establishing how these tools can be used to find and remove SF antibiotics from the supply chain.

- Cell phone based apps
- Raman Spectroscopy handheld devices
- Near Infrared scanning devices
Surveillance relies on different data from different sectors

Global and regional surveillance programmes

In-country AMR surveillance programme

Human health

Animal health

Agriculture and food

Images courtesy: Integrated Surveillance Of Antimicrobial Resistance In Foodborne Bacteria, World Health Organization, 2017
Leveraging technological solutions to facilitate surveillance

In-country AMR surveillance programme

1. Interoperability toolkit
2. Clinics
3. Labs
4. Field level entities such as hatcheries
5. Labs
6. Field level entities in retail food sector
7. Labs testing retail food isolates

Human health

Animal health

Agriculture and food

1. Interoperability toolkit
2. Smartphone RDT-reading app
3. Mobile device-based clinical decision support (CDS)
Tailored in-country pilots

1. Interoperability toolkit
2. Smartphone RDT-reading app
3. Clinical decision support (CDS)

CURRENT STATUS

• **First pilot** planned with the Zambia National Public Health Institute, secretariat for the National AMR multi-sectoral steering committee and Regional Coordinating Centre for Africa CDC
• The **requirements gathering process** for the software has started and the **formal collaboration agreement is under discussion** with ZNPHI

• The **target product profile** for the app has been circulated and will be finalized by March
• The FIND team is in conversations with country partners (Institute Pasteur Dakar, etc.) and potential app developers for pilot projects

• FIND is in conversation with Terre des hommes for a pilot in Burkina Faso
• **Target product profile** for electronic clinical decision aids is being co-developed with WHO and will be finalized by March

PLAN FOR 2019

• Implement in-country pilots for all the 3 workstreams
• Disseminate lessons learnt on how countries can strengthen AMR/ OneHealth surveillance using technology
The Gonorrhea Dx project is supported by the UK Global Antimicrobial Research Innovation Fund (GAMRIF) and is in partnership with the WHO and GARDP.

The Substandard and Falsified Medicines project is supported by GAMRIF and The Fleming Fund.

The AMR Connectivity Project is supported by GAMRIF.

The AMR Diagnostics Use Accelerator is supported by the UK Department for International Development (UKAid/DFiD) and the Swiss Agency for Development and Cooperation (SDC).