**Arab Republic of Egypt**
**Ministry of Health and Population**
**Preventive Sector**

# Anti-Microbial Resistance (AMR) Update and Control Strategy in Egypt

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- **According to WHO recommendation (2015) ,The Preventive sector - Egyptian Ministry of Health(MOH)** established  AMR Task Force for updating the AMR national action Plan to be in line with WHO Global Action Plan.


- AMR  National Action plan   details specific steps and milestones for achieving the AMR Strategic goals and objectives with proper indicators  for measuring progress

# National AMR Plan Objectives (2016 – 2020)

1. Increasing Public **awareness** towards AMR.

2. Control  Spread of Resistant pathogens and Slow the Emergence of new Resistant patterns.

3. Strengthen National **One-Health Surveillance** Efforts to Combat Resistance that can arise in humans, animals, and the environment.

4. Implementation of evidence-based **infection control** practices that can prevent the spread of resistant pathogens.

5. Improve  national & international **Collaboration** and Capacities for AMR  Prevention, Surveillance, Control, and Antibiotic **Research and Development.**

# Stages of AMR-National surveillance system (2016 – 2020)

**Stage I: surveillance of  AMR Hospital Acquired infection (HAI) (Jan - 2016):** lab based sentinel Surveillance System  was implemented in 14 governmental hospitals for detection of Catheter associated Urinary tract infection, Pneumonia &  VAP, Blood stream infection  & Catheter associated blood stream infection and surgical site infection.

**Stage II:  Detection of AMR community aquired Infection (CAI) ( Jan-2017)**

- Implementation of AMR Detection in community acquired bacterial infections causing   Pneumonia, Meningitis and Enteric fever in the sentinel surveillance sites.

**Stage III: Implementation of AMR Lab-based surveillance in veterinary and environmental sectors( ongoing)**

- Creation of AMR Steering committee including focal points from all involved sectors

**WHONET**

- Integration of WHONET software in HAI sentinel sites aiming for Creation of a national laboratory electronic network( at least one microbiology lab from each sector / Governorate)

**Global Antimicrobial Surveillance system**

- Modify the national surveillance and monitoring projects to align with the Global Antimicrobial Resistance Surveillance System **(GLASS)**

**Sentinel surveillance system**

- Conducting National AMR-HAI & AMR- CAI sentinel surveillance system

**Training**

- Holing Educational and Training sessions on AMR ( technical and Awareness) In sentinel sites and other MOH hospitals about the urgent need sustainable use of antibiotics and AMR detection and managements

**Infection prevention and control**

- Promotion of **infection prevention** and control measures ,Breaking chain of infection in early stages and Strengthen outbreak response capacity against AMR

**Bacterial fingerprinting**

- **Genotyping** (PFGE) of AMR bacteria causing HAI outbreaks for detecting source of infection

## National One-Health Surveillance

Strengthen **National One-Health Surveillance** Efforts in AMR And AMU surveillances through Promotion of laboratory capabilities **,Creation of a national laboratories electronic network**

## Raising public health awareness

Improving public health awareness about AMR and the proper use of antibiotics

## International Collaboration

Strengthened **international Collaboration** through Standardisation of AMR protocol and dissemination of needed AMR Information ( **GLASS-IT platform**)

## Antibiotic use surveillance

Monitoring the trend of antibiotic use and management practices in healthcare settings , environmental sectors and food production chain through antibiotic use surveillance **.**

**Antibiotic Policy & Stewardship**

**AMR researches**

**Molecular detection of resistant gens**

Strengthening and implementation of **antibiotic policy & stewardship** to Control Spread of Resistant pathogens and slow the Emergence of new resistant patterns

Identification and prioritisation of **AMR researches** needs to identify alternative treatments as well as new or improved rapid AMR diagnostic tests

•Molecular detection of antimicrobial resistance genes **(PCR).**

Since 2014 **AMR awareness** sessions were included in CPHL microbiology lab training schedules

Identifying the **selection criteria** needed for assessment of microbiology labs according to the international guidelines ( including human resources and infrastructures)

Setting up a **communication system** between the Lab teams, clinicians , clinical pharmacists and IC team inside each hospital.

**Training microbiology** labs on a Standardized lab protocol and SOPs for identification pathogenic bacterial , performing AST , phenotypic detection with annual guidelines updating.

Continuous monitoring and evaluation of microbiology labs performance With Establishment of **EQAS** for all received bacterial isolates

**Analysis of AMR data** obtained from all sentinel sites
Laboratory detection of AMR bacterial outbreak with **genotypic analysis**

Application of **WHONET software in AMR- HAI surveillance sentinel labs and integrating AMR data file in NEDDS** for AMR – CAI surveillance

Participation in **Emergency task force** for Establishing a rapid response system and reporting techniques for early interventions and prevention of spread of outbreaks

Collaboration with WHO for International standardization of the AMR lab detection **protocols** for detection of **WHO recommended pathogens** and development of harmonized, laboratory-based AMR surveillance in human, animal and foodborne pathogens.

- **Building up capacities** with Technical support.

- **Setting up an Electronic  communication system (WHONET)  in each country** ,connecting the districts labs with central lab to  national epidemiology department , that is finally connected to the RCC.

- Supporting North African countries in **outbreaks** investigations by rapid Response emergency team.

# Challenges

➢ **Segmented** surveillance system (human, animal, environment and pharmaceutical)

➢ Time needed for **Changing behavior** of community and health care workers (against using antimicrobials ) and continuous Raising their awareness against AMR

➢ Lack of national **legislations** for antibiotics Dissemination and prescriptions

➢ Involvement of **private sector and University hospitals**

➢ **Manufactural pressure** on Health care workers for marketing expensive broad spectrum antibiotics

➢ Insufficient **resources**