

# The Global Momentum for AMR – Moving from Knowledge to Action

**Combating Antimicrobial Resistance: A One Health Approach**

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# Since 20th century to now

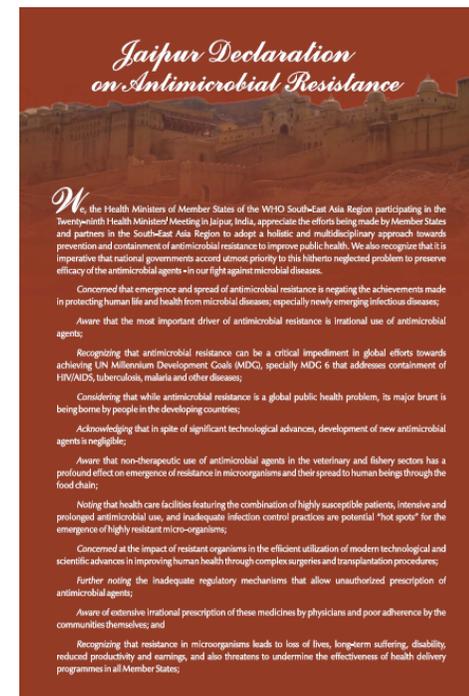
- Intense scientific discovery
  - 1928 – Penicillin discovered
  - 1937 – sulfonamides introduced
  - Mid 1950's – transferable resistance identified
  - Estimated 200,000 published articles since 1950's\*
- 1950s – 1970s: “golden period” of drug development

\*Julian Davies and Dorothy Davies. Origins and evolution of antibiotic resistance. Microbiol Mol Biol Rev 2010; 74 (3):417-433



# Extensive international & national efforts ...

- **1959** WHO scientific group recommends **studies** on resistance  
(The Work of WHO, 1959, Official Records of WHO no. 98)
- **1981** WHO Scientific Working Group report includes **guidelines** for the appropriate use of antibiotics (WHO/BVI/PHA/ANT/82.1)
- **2001** WHO Global **Strategy** for containment of antimicrobial resistance (WHO/CDS/CSR/DRS/2001.2)
- **2009** Transatlantic Taskforce on Anitmicorobial Resistance (TATFAR)
- **2011** World Health Day “Antimicrobial resistance: no action today, no cure tomorrow” **policy package**
- **2011** European Action Plan
- **2011** Jaipur Declaration



# Many standards & guidelines available from OIE, FAO, WHO

## Preserving the efficacy of antimicrobials



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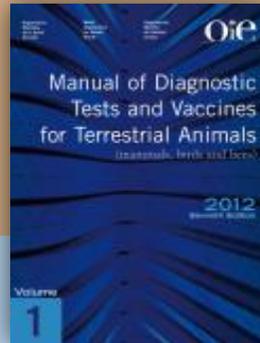
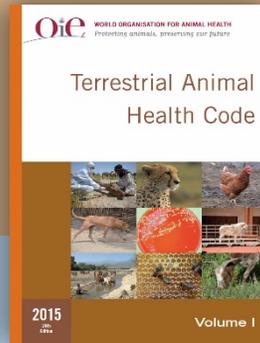
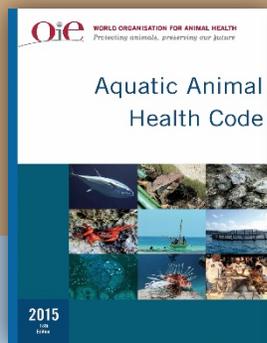
**Prescription and administration under veterinary supervision**



**Monitoring of quantities used in animals, antibiotic resistance surveillance**



**Oversight by Veterinary Statutory Bodies**



**OIE intergovernmental standards**



**Use and surveillance of antimicrobials**



**Veterinary legislation**



**Quality of Veterinary Services**

**OIE List of antimicrobial agents of veterinary importance**

OIE web portal on AMR

[www.oie.int/antimicrobial-resistance](http://www.oie.int/antimicrobial-resistance)

# 1998 World Health Assembly resolution WHA51.17

## Emerging and other communicable diseases: antimicrobial resistance

-  
Concerned about the **rapid emergence and spread** of human pathogens resistant to available antibiotics;

- Aware that antimicrobial resistance is increasingly **hampering treatment** of infectious diseases as a result either of totally ineffective currently available antibiotics or of the **high cost of “new generation”** agents;

- Concerned about the **extensive use of antibiotics in food production**, which may further accelerate the development of such resistance,....



# Benefits & consequences

- Major gains in scientific knowledge, concepts & professional guidance
- Positioning
  - Complex phenomenon of primarily medical relevance (more recent incorporation of one health)
  - Expectation of endless antibiotic drug supply
- Real world trends
  - Loss of companies interested in antibiotics
  - Continued increase in levels worldwide



# 2014 WHO report

## “Antimicrobial resistance: global report on surveillance”

- 114 countries in all WHO regions
- Selected (hospital & community) infections & resistance patterns
- High AMR in all regions
  - E coli, K pneumoniae, S aureus, S pneumoniae, N gonorrhoea ....
  - 3<sup>rd</sup> generation cephalosporins, fluoroquinolones, methicillin .....
- Under reporting of key concerns like MDR TB
- Significant gaps in surveillance & information



# Need for strategic change

- Current approaches essential but not enough
- Actively broadened engagement beyond health & science
  - Partnering (FAO, OIE, WHO) around one health concept
  - Active reach out to political, economic, security, business sectors
  - Cooperation & communication among like-minded champions
- Significant results
  - Greater attention beyond health & scientific sector
  - Global Action Plan (2015)
  - G20 & UN High Level Meeting (2016)



# UN High-Level Meeting on AMR

- Milestone
- Increased legitimacy
- Formalized engagement & commitment
- Mandated Interagency Coordinating Group on AMR
- *But all such gains time-limited unless built upon*
- *Will it result in cooperation among non-health ministries, departments, agencies?*
- *Will it catalyse private sector actions?*



# How do we consolidate gains & move from knowledge to actions?



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# High-level aims remain unchanged

- Lowest possible sustained levels of AMR
- Reliable development & production of essential technologies, including antimicrobial medicines
- Affordable & equitable access



# At this time, need emphasis on 3 foundational elements

1. Further “socialization” of AMR
2. Closure of specific knowledge gaps hindering policy & behavior
3. Visible leadership & action by lead groups



# Socialization is the fundamental driver

- Some issues too large to be addressed as technical
  - Tobacco control, climate change, cancer, HIV, **AMR** .....
  - Popular concern & support enabled new policies, initiatives, funding
- AMR moving in right direction, but not yet felt by average person as ...
  - Familiar & personally relevant
  - Critically important & urgent
  - Issue where voicing concern makes a difference

# Challenge to move from abstract, technical & distant to human, personal, now

## Need multiple voices to recraft AMR

- About people -- faces & stories
- Personal --- everyone, everyday health
- Urgent -- untreatable infections here now
- Reversible --- if governments, companies, individuals act

# Pace of change will require closing certain knowledge gaps

- Observation
  - Evidence sometimes drives action
  - Insufficient evidence **always** cited as justification for slowness
- Key gaps
  - Holistic picture: AMR epidemiology & etiology
    - Health, agriculture & environment
    - Relative importance & pathways to human infections
  - Most (cost) effective interventions
  - How to move into post-growth promotion agriculture world- wide



# Key groups must be visibly active

## UN IACG

- Actively convene & engineer cooperation & coordination among sectors

## Governments

- Leadership
- Broaden involvement of non-health agencies
- Legislation & financing

## WHO, FAO, OIE & other international organizations

- Keep AMR in front of governments
- Provide strategic advice in addition to technical guidance
- Exemplify one health partnering



# Key groups must be visibly active

## National health & agriculture

- Make knowledge of AMR & best practices normative
- Separate profit from provision of antibiotics
- Find ways to phase out antibiotics as growth promoters

## Civil society

- Scrutiny
- Organize efforts around food

## Industry

- Return to making new antimicrobial drugs
- Internalize access as normative

## Funders & academia

- Use funding to drive multidisciplinary, impact based research so big questions & issues will be addressed faster



# Hong Kong – an example

- Highly evolved environment (professional, scientific, business)
- Professionals ready to engage but uncertainty over directions
- Population attentive to health but low awareness about “AMR”
- Right combination of focus, network building, trust, coordination, communication & funding can create engine for change



*Thank you*

