What is AMR?
Why is it increasing?
What is the scale of the problem?
What is the impact?
What regions will be most affected?

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AMR is a natural phenomenon accelerated by use of antimicrobial medicines. Resistant strains survive & aggregate.

Medicines for treating infections lose effect because the microbes change;
   1. mutate
   2. acquire genetic information from other microbes to develop resistance

Types of AMR

1. Antibacterial resistance (e.g. to antibiotics)
2. Antiviral resistance (e.g. to anti-HIV medicines)
3. Antiparasitic resistance (e.g. to anti-malaria medicines)
4. Antifungal resistance (e.g. to medicines for *Candidiasis*)
Benefits of antimicrobial medicines have been enormous

Penicillin increased survival from 10% to 90% among patients with pneumonia & bacteria in their blood.
But resistance was foreseen early

“The time may come when penicillin can be bought by anyone in the shops. Then there is the danger that the ignorant man may easily under dose himself and by exposing his microbes to non-lethal quantities of the drug make them resistant”

– Alexander Fleming, Nobel Lecture, December 1945
AMR  Decades of concern

• **1959** WHO scientific group on antibiotics research recommends *studies* on resistance (The Work of WHO, 1959, Official Records of WHO no. 98)
• **1981** WHO Scientific Working Group on Antimicrobial Resistance 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)
• **2011** World Health Day “Antimicrobial resistance: no action today, no cure tomorrow” policy package
• **2012** The evolving threat of antimicrobial resistance Options for action
• **2015** Adoption by WHA of Global Action Plan for AMR
• **2016** AMR resolution at the UN General Assembly
Now a political issue ...

All countries to have prepared a national action plan in line with the GAP by WHA 2017 FAO and OIE

- Sept 2016 UN General Assembly
- All countries have a NAP
From a scientific problem to a political issue

• Increasingly a global threat to public health
  – New evidence and information
    • Untreatable infections; multiple-drug resistance
    • 25,000 deaths/year across EU
  – Desperation over "dry pipeline"

• Economic impact estimated*
  – By 2050, lead to 10 million deaths every year
  – Reduction of 2 to 3.5 percent in GDP
  – Costing the world up to $100 trillion

• Growing awareness and commitment
  – Political, professional, public
  – Global health communities and global solutions

*Ref: J O’Neil report
Available National Data* on Resistance for Nine Selected Bacteria/Antibacterial Drug Combinations, 2013
But things are getting worse
AMR – Why is it increasing?
A Global Health Threat

- Resistant infections currently claim at least 50,000 lives each year across Europe and the US alone.
- AMR is a problem that should concern every country irrespective of its level of income.

Impact will be greatest in developing countries

Deaths attributable to AMR every year by 2050

Treatment costs go up when first line antimicrobials can't be used.

Figure 1.1 Escalating costs as recommendations for treatment change

Source: Reproduced from 12 with permission.
Implications: Health & economies

• Infections more difficult to treat
  – More deaths, more chronic infection
  – Longer hospital stays
  – Higher costs

• Increasing risk for other conditions
  – Surgery, injuries ...
  – Chronic conditions like cancer (therapy), diabetes, malnourishment...

• Decreased productivity
Antimicrobial resistance: the global action plan

Why a global action plan
Objectives
Principles
Implementation
UN General Assembly

Dr Liz Tayler
AMR Secretariat
WHO
AMR Global Action Plan

• Adopted by World Health Assembly in May 2015

• Supported by resolutions in FAO and OIE May 2015

• Technical blueprint on **what to do**
  – Consolidates global scientific consensus & draws upon countries, FAO, OIE, civil society & others

• Reflects **stepwise approach** recognizing countries have different starting points, priorities

• Clear roles for WHO, member states, and other actors
GAP reinforces Good public health

• **Specific**
  - Awareness campaigns on use of antibiotics
  - Monitoring system of antibiotic use, and prevalence of resistance
  - Development of diagnostic capacity

• **Sensitive**

1. Preventing infection in animals and humans
   - Immunisation
   - Environmental sanitation
   - WASH in health facilities

2. Strengthening human resource around diagnosis, prescription and IPC
   - Training
   - Tools / job aids

3. Regulation and Drug control
   - Quality control / reducing fake and substandard
   - Ensuring adequate supply first line drugs
   - Regulation of over the counter sales
Five strategic objectives:

1. Improve awareness and understanding (WAAW)
2. Strengthen knowledge through surveillance & research
3. Reduce the incidence of infection (IPC\Sanitation)
4. Optimize the use of antimicrobial medicines
5. Ensure sustainable investment (R&D)

• National Action Plans
Implementation GAP: Guiding Principles

1. Realistic & achievable objectives
2. Take into account different capacities of Member States
3. Involve FAO and OIE, where appropriate
4. All-inclusive approach (HIV, TB and malaria)
5. Joint ownership between HQ and Regions
6. Communication!
Whole of society engagement
Implementation GAP: 10 work streams

1. Global communications campaign
2. Support National Action Plans of MS
3. Global Antimicrobial Resistance Surv System
4. Support measures to improve IPC
5. Monitor use & enhance stewardship of antibiotic use
6. Encourage R and D and explore new business models
7. Improve Point of Care diagnostics
8. Address the Environmental Drivers
9. Vaccines to prevent AMR
10. One Health Liaison

Additional HTM NTD STI Maternal Health Workforce.
Further political support is needed

1. In 2016, high level meeting on AMR will occur at United National General Assembly

2. Enormous opportunity because UNGA normally does not address health issues

3. Outcome (resolution, declaration ...) can significantly intensify national & intersectoral engagement, commitment & action