Antimicrobial Resistance
A global economics perspective
By Hala Audi
What is the Review on AMR?

- Assessing the economic and human cost of AMR
- Recommending solutions to governments
- Alongside others, building an international political consensus for action

Jim O’Neill, Review Chair
Current cost of AMR

A lack of high quality global surveillance data means the exact impact of AMR is not as well understood as it should be.

However the information we do have from the US Centre for Disease Control, European Union, and others, paint a very worrying picture.
Financial and Human Cost

- 23,000 people die annually in the US already
- 700,000 people die worldwide
- Both of these are conservative estimates
- Estimated to cost the US health care system 20 billion USD a year
Projected future cost

Our projected cost of AMR is based on research that we commissioned from RAND and KPMG
Economic cost of resistance

Scenarios of increasing resistance until 2050 applied to six pathogens:
- Malaria
- HIV
- TB
- K Pneumonia
- Staph Aureus
- E. coli

KPMG scenario
- Bacterial resistance rates will rise to 40%
- Hospital acquired infection rates to double

RAND scenario
- Bacterial resistance rates rise to 100% in 10 years
How AMR compares to other causes of death based on these scenarios
Economic cost based on these scenarios
A 10 point plan to tackle AMR

Containing AMR is essential, achievable and affordable. Our ten actions all work towards three goals:
1. Reduce the demand for antimicrobials from animals and humans
2. Increase the supply of useful products by increasing private and public investment
3. Catalyse global political action
Ten point plan for global action

1. A massive global public awareness campaign
2. Improve handwashing and prevent the spread of infection
3. Reduce unnecessary antibiotic use in agriculture
4. Improve global surveillance of drug resistance in humans and animals
5. Use vaccines more, in humans and animals
6. Improve the numbers, pay and recognition of people working on AMR
7. Promote new, rapid diagnostics to cut unnecessary use of antibiotics
8. Promote private investment for new drugs and using older ones better
9. Establish a global innovation fund for early-stage and non-commercial research
10. Build a global coalition for real action – via the G20 and the UN
1. A massive global public awareness campaign

General public does not what ‘AMR’ or ‘antimicrobial resistance’.

Very few people understand virus vs bacteria or that resistance arises in microbes not in people.

Need bold but practical ideas – global ambition delivered locally like:

- Mass media at sports events
- India’s ‘Red Line’ Campaign idea
- Viral videos on social media
- Famous starts from bollywood, music, sports etc.

Role for civil society and companies as well as governments.
2. Improve handwashing and prevent the spread of infection

Case study estimated the impact on antibiotics consumptions of giving access to water and sanitation in India, Indonesia, Nigeria, and Brazil

60% potential decrease in the number of cases of water and sanitation-related diarrhoea being treated with antibiotics
3. Reduce unnecessary antibiotic use in agriculture

Animals in the USA consume more than twice as many medically important antibiotics as humans.
4. Improve global surveillance of drug resistance in humans and animals
5. Use vaccines more, in humans and animals

Increasing coverage of vaccines can reduce antibiotic use

Of the groups of organisms classified by the CDC as ‘urgent’ antibiotic resistant threats there are on 5 products in the pipeline.
6. Improve the numbers, pay and recognition of people working on AMR

In US hospitals:
- Infectious disease is lowest paid specialty
- Not enough students apply to fill existing vacancies
7. Promote new, rapid diagnostics to cut unnecessary use of antibiotics
8. Promote private investment for new drugs and using older ones better

Profit only achieved in year 23
9. Establish a global innovation fund for early-stage and non-commercial research

US National Institute of Health research spending 2010-2014

- **Cancer**: $26.5 billion
- **HIV/AIDS**: $14.5 billion
- **AMR**: $1.7 billion
- **Diabetes**: $5 billion

Total NIH Spending: $142,546m
10. Build a global coalition for real action

Global access to new technologies and economic development must be at the heart of any solution, alongside better stewardship of antimicrobials. Not an afterthought.

Key actors:

G20

UN system – UNGA, WHO, FAO + OIE

Private sector – small biotechs, big pharma, generic companies (industry “Davos Declaration” on AMR a great step forward)

International institutions like World Bank, OECD

Global health innovators – a source of good ideas and lessons to learn (GAVI, UNAIDS, UNITAID, Medicine Patents Pools, Product Development Partnerships, TB Drug Accelerator, GHIT in Japan etc.)
Next steps for Review

• Final report – May

• International action – WHA, G7, G20 and UN
If you are interested to know more please see our reports at AMR-Review.org

Or e-mail us on info@amr-review.org

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