## Catalyzing Policy Action to Address Antimicrobial Resistance: Next Steps for Global Governance

Anthony D. So, MD, MPA

**Distinguished Professor of the Practice** 

Director, Innovation+Design Enabling Access (IDEA) Initiative

Johns Hopkins Bloomberg School of Public Health

September 25, 2024

### Scale of Antimicrobial Resistance Challenge

- Bacterial drug-resistant infections claimed 1.27 M lives in 2019 (Lancet GRAM study, 2022)
  - More than HIV/AIDS, breast cancer or malaria
- Greatest AMR burden in Sub-Saharan Africa and South Asia
  - In Sub-Saharan Africa, more than half were children under 5.
  - Yet Sub-Saharan Africa has the lowest percentage of deaths attributable to AMR, BUT much higher rate of deaths from infectious diseases



Deaths attributable to bacterial AMR are greater than deaths attributable to HIV/AIDS or malaria.

## AMR Forecasts to 2050 *(Lancet,* 2024): What the Future Holds?

Between 2022 and 2050, global deaths attributable to AMR will climb by 70%.

## Gram-negative drug scenario (novel antibiotics)

- AMR burden caused by Gramnegative bacterial infections assumed to be reduced by 50%
- 11.1 million cumulative AMR deaths averted between 2025 and 2050

# Better care scenario (health care system)

- Improvements from health-care systems, including access to existing antibiotics
- 92 million cumulative deaths attributed or associated with AMR would be averted between 2025 and 2050

"The number of deaths averted between 2025 and 2050 under the better care scenario is five times greater than those saved by the Gram-negative drug scenario." ... But these are not mutually exclusive approaches.

### Measurable and Actionable Targets

#### Muscat Ministerial Manifesto on AMR (2022)

- Reducing total amount of antimicrobials used in agri-food system by at least 30-50% by 2030
- Zero use of medically important antimicrobials for human medicine in animals for nonveterinary medical purposes or in crop production
- Ensuring ACCESS group antibiotics comprise at least 60% of overall antibiotic consumption by 2030

#### 10-20-30 by 2030 (Lancet, 2024)

- 10% reduction in mortality from AMR
- 20% reduction in inappropriate human antibiotic use
- 30% reduction in inappropriate animal antibiotic use

Targets in Draft UNGA HLM AMR Political Declaration	
Lowering deaths from bacterial drug-resistant infections by 10 per cent by 2030	All countries to report quality surveillance data on AMR and antimicrobial use by 2030
Target that use of WHO Access group antibiotics by 2030 reach at least 70% overall human antibiotic use globally	At least 80 per cent of countries can test for resistance in bacterial and fungal GLASS pathogens by 2030
Target of achieving US \$100 million to catalyze at least 60% of countries having achieved funded plans by 2030	Ensure that 95 per cent of countries participate in annual Tracking Antimicrobial Resistance Country Self- Assessment Survey

### End-to-end Approach for Innovation and Access

Push (pay for inputs of R&D) vs. Pull (pay for outputs of R&D)

- Subscription programs (top-up as advance market commitments)
- Pooled procurement (SECURE Initiative)
- Local production (GARDP-Shiniogi-CHAI)



### Preventative Interventions→Better Care

**Intervention Packages** 

- Hospitals and clinics: Improved hand hygiene, stewardship, environmental hygiene
- Community actions: Delayed prescriptions, mass media campaigns, rapid diagnostic tests
- Mixed intervention package of the above

Investing just US\$2 per capita per year in a comprehensive package to tackle AMR would avert 47,000 deaths per year in OECD countries.

The public health package could pay for itself in under a year and save \$4.8 billion per year in OECD countries.

### AMR Containment: A Cost-Effective "Social Vaccine"

- Up to 24 million more people would be forced into extreme poverty by 2030 (World Bank, 2017)
- In high AMR-impact scenario, 3.8%
  loss of annual GDP by 2050, with annual shortfall of \$3.4 trillion by 2030
- \$9 billion annual investment in LMICs
  - Half into health system infrastructure
  - Half into AMR containment

Figure: Where global AMR containment benefits accrue



**Source**: World Bank, *Drug-Resistant Infections: A Threat to Our Economic Future*, March 2017.



South Centre Policy Briefing: Catalyzing Policy Action to Address Antimicrobial Resistance: Next Steps for Global Governance

#### https://tinyurl.com/CatalyzingAMRPolicy

Innovation+Design Enabling Access (IDEA) Initiative and Antibiotic Resistance Coalition at https://www.ignitetheidea.org/arc

> Anthony D. So, MD, MPA, Johns Hopkins Bloomberg School of Public Health (aso5@jhu.edu)