Antimicrobial Resistance

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LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

@AnthroAMR

ANTIMICROBIAL RESISTANCE CENTRE

Inspiring innovation in AMR research through interdisciplinary and international engagements

Outline

The problem of antibiotic use

Approaches to stewardship – and their challenges

- Awareness
- Education
- Champions

Ways forward for stewardship

The problem of antibiotic use

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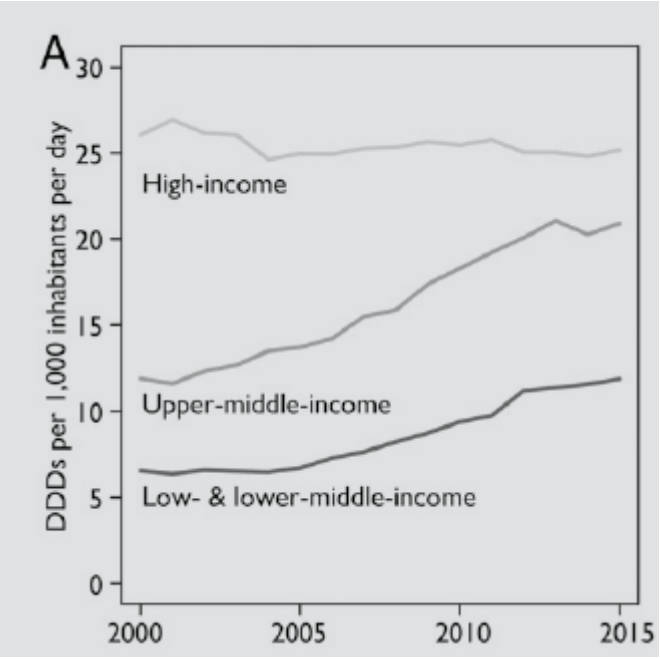
Antibiotic use is rising globally



Klein et al 2018 – consumption data

Antibiotics have become infrastructural

Antimicrobial resistance is an **inversion** moment – provokes us to consider what is at stake in the *absence* of antimicrobials

A moment when infrastructure becomes apparent:

> "Infrastructural inversion means recognizing the depths of interdependence of technical networks and standards, on the one hand, and the real work of politics and knowledge production on the other." (Bowker & Star 2000, p34)

Infrastructures are 'good usable systems' that 'disappear almost by definition. The easier they are to use, the harder they are to see.' They are the technologies and arrangements that 'by design and by habit, tend to fade into the woodwork'.

> Infrastructure defines what is possible. Inversion of infrastructure allows these possibilities to be reopened.

Antibiotics have become part of systems – of architecture, production, hygiene, relations. **Antibiotics have become infrastructural**

Chandler 2019 Palgrave comms. Current accounts of AMR

Stewardship solutions
… and their challenges

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How are we currently addressing antibiotic use?

Stewardship, primarily through:

- Awareness
- Education
- Champions
- Technologies

But, so far, the evidence base on how best to achieve stewardship is mixed or missing.

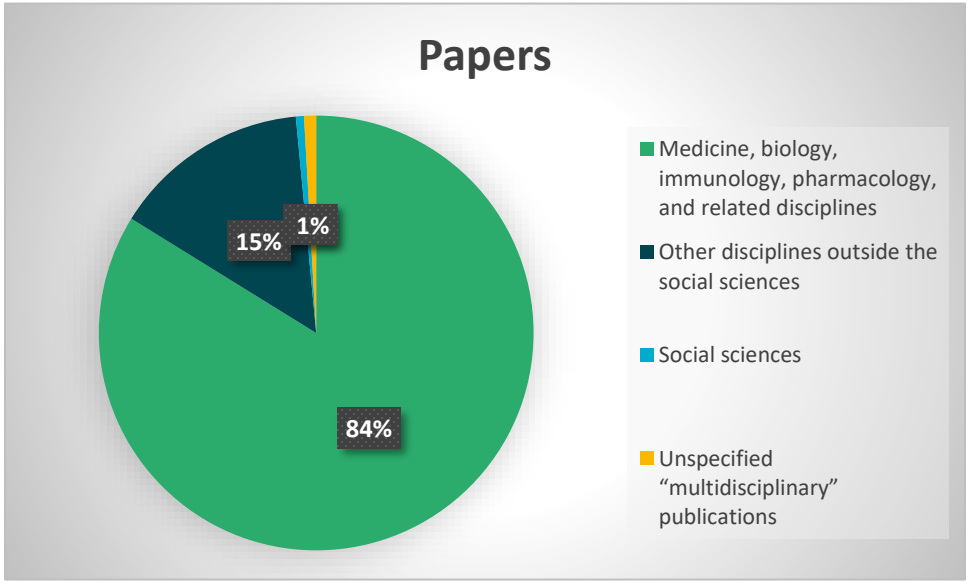
Social science has been called for to address the behavioural problems indicated in this challenge

Minssen et al 2020. Bull WHO. Preparing for antimicrobial resistance

AMR Social Science research – still limited

There were 345,410 AMR-related publications until 2019.

- Medicine, biology, immunology, pharmacology, and related disciplines: 83.9%;
- other disciplines outside the social sciences: 14.7%;
- social sciences: 0.6%;
- unspecified "multidisciplinary" publications: 0.9%.



Run by Haenssgen et al (2019) on 30 August 2018, based on the Scopus database search query: TITLE-ABS-KEY ["antibiotic resistance" OR "drug resistance" OR "antimicrobial resistance" OR "AMR"]

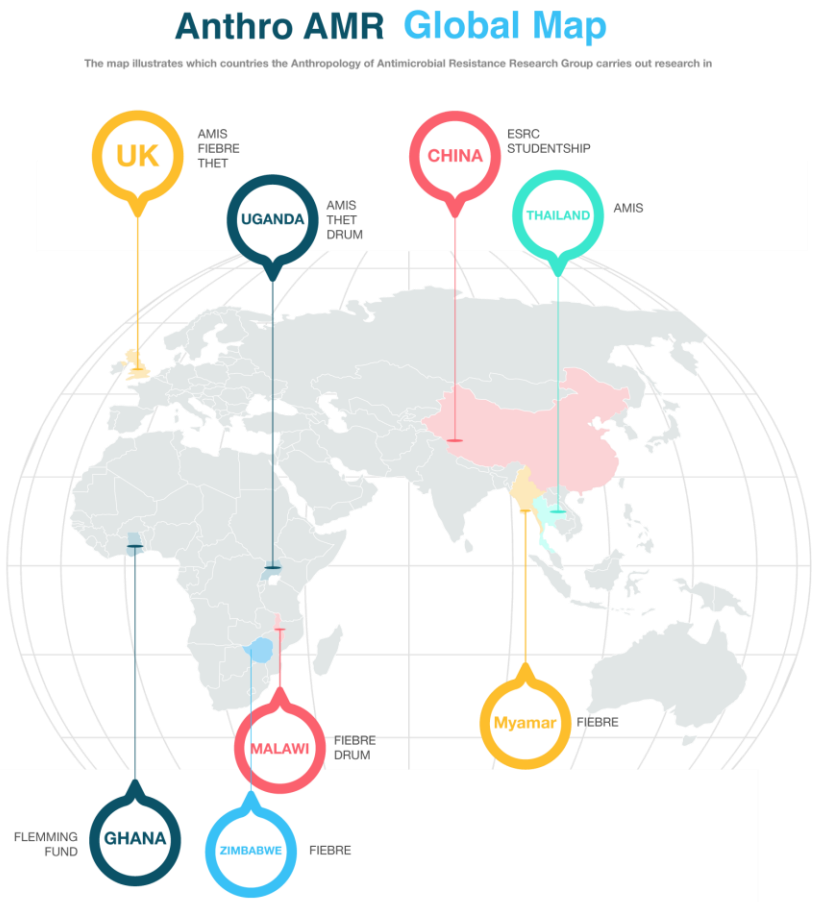
Anthropology of AMR

Ethnographic
- Immersive observation
- Tracing stories; interviews

Documentary analysis
- Archival
- Media
- Policy, programmes

Surveys
- Residents - Drug bag
- Health facilities
- Prescriber

Interventions



Chandler, Hutchison & Hutchinson (2016) Applying Social Theory to AMR. LSHTM Research Online

https://www.lshtm.ac.uk/research/centres-projects-groups/anthropology-antimicrobial-resistance -

Antibiotic Resistance Awareness survey

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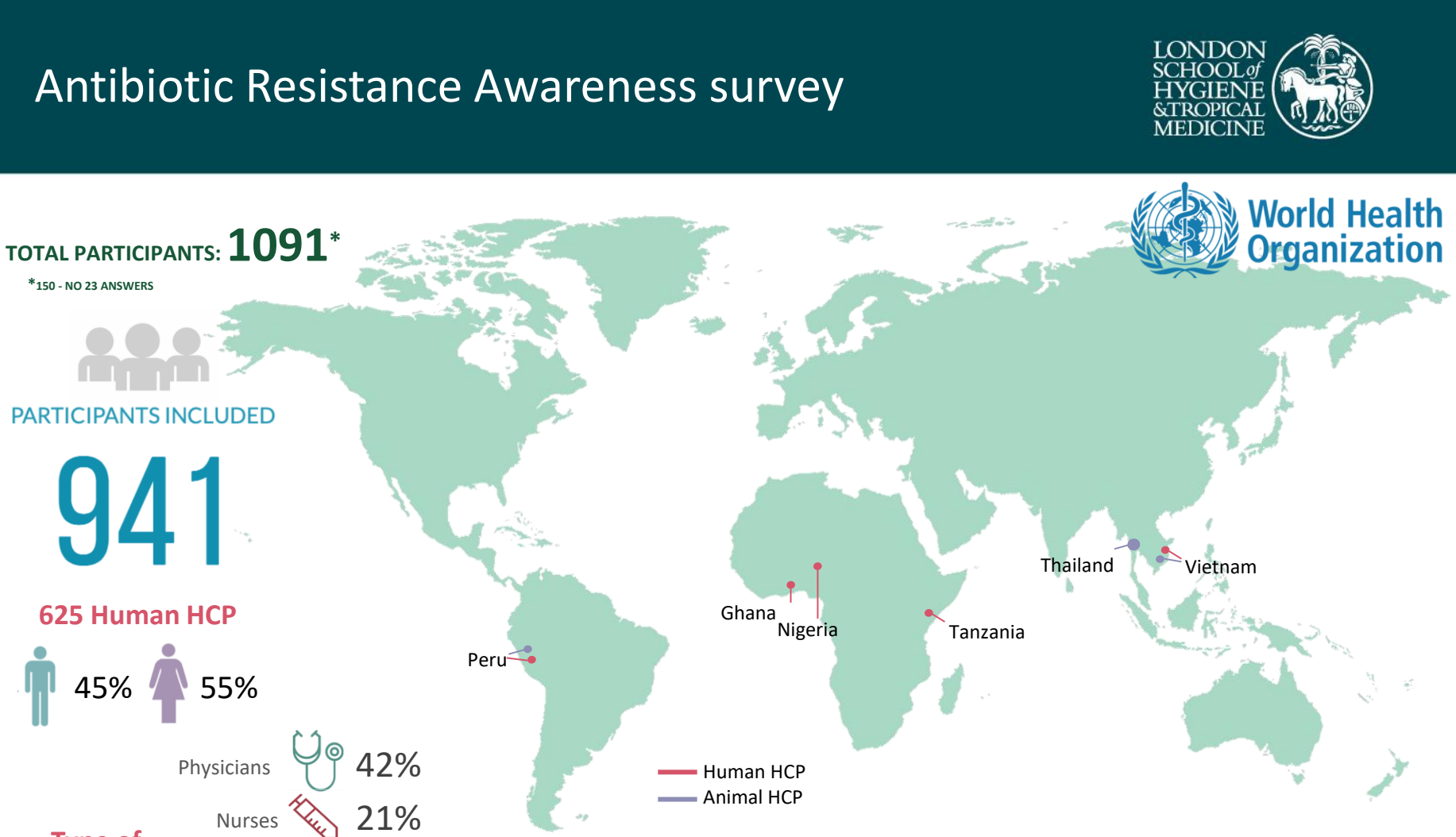
World Health Organization

TOTAL PARTICIPANTS: 1091*

*150 - NO 23 ANSWERS

PARTICIPANTS INCLUDED

941



625 Human HCP

45% 55%

Type of Human HCP

Physicians	42%
Nurses	21%
Pharmacists	18%
Physician Assistant	9%
Dentists	8%
Medical/Clinical officers	2%

316 Animal HCP

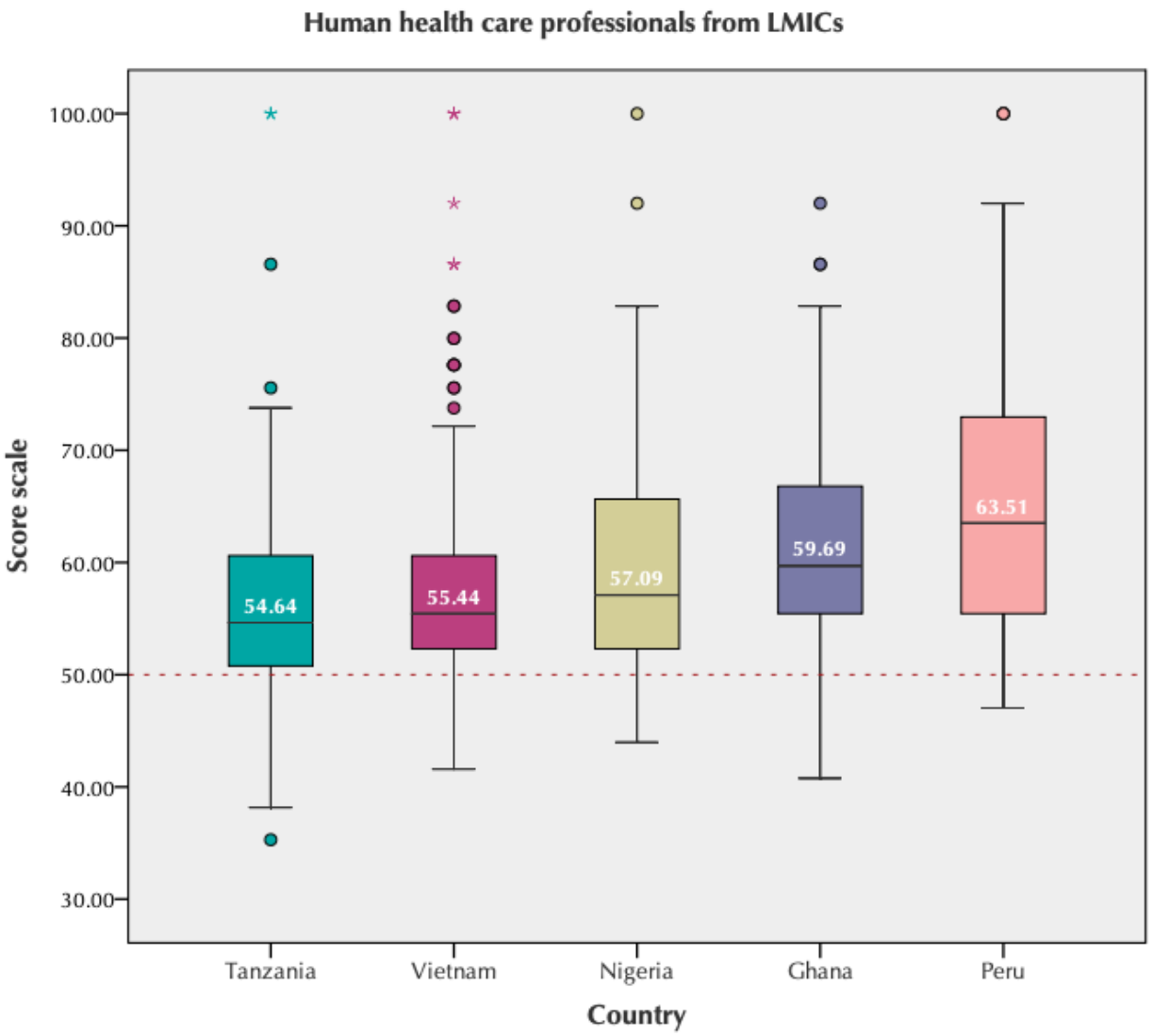
63% 36%

*1% (4/365) No answer

Type of animal HCP

Veterinarians	74%
Vet Drug sellers	20%
Both	6%

ABR Awareness Scores – Human HCPs

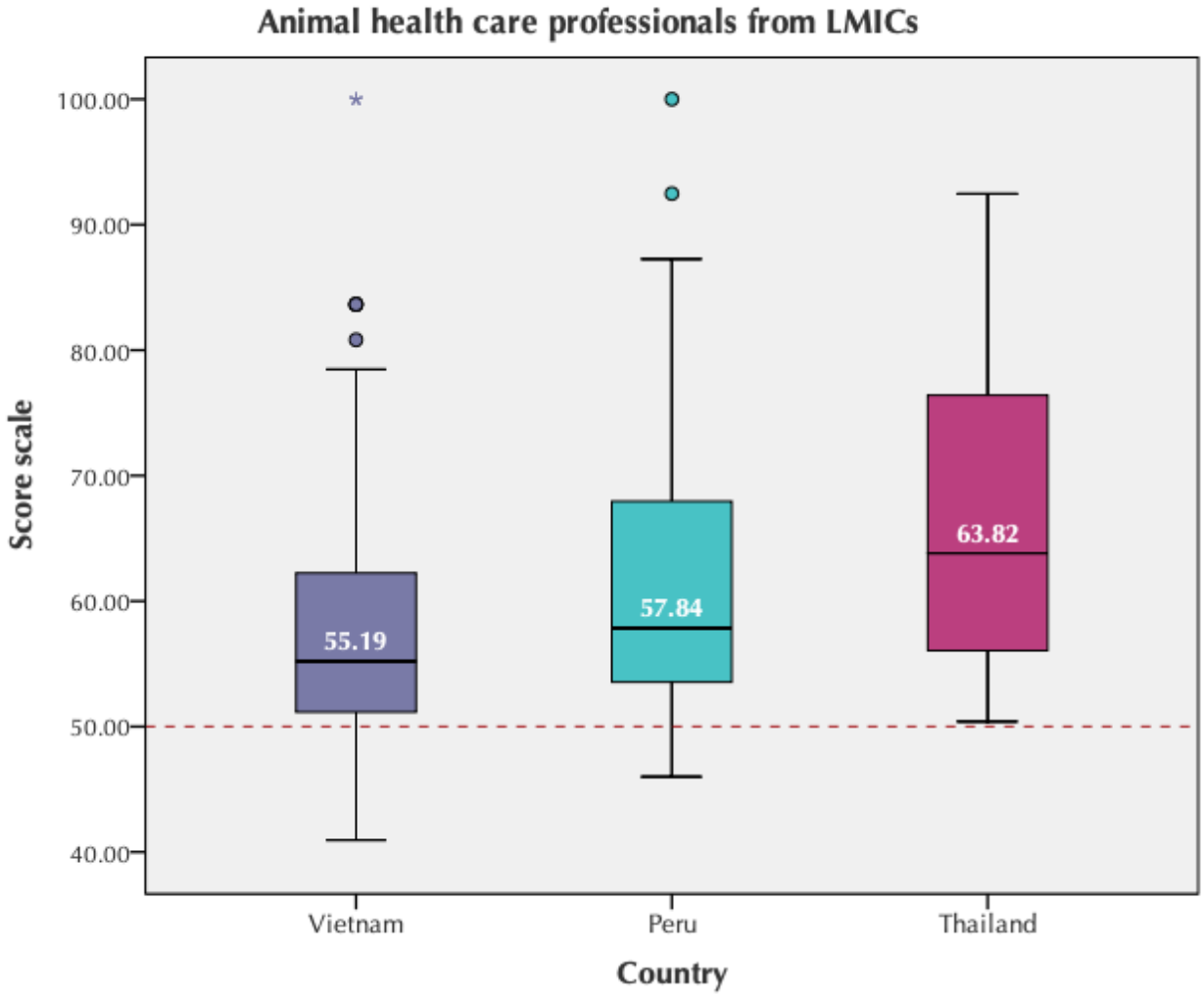


NUMBER OF PARTICIPANTS

625

126 Tanzania
226 Vietnam
85 Nigeria
104 Ghana
84 Peru

ABR Awareness Scores – Human HCPs



NUMBER OF PARTICIPANTS

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156 Vietnam

119 Peru

41 Thailand

Raising awareness

Many health workers are already aware of AMR

Awareness of AMR ≠ Reduced prescribing

Awareness of AMR can increase impetus to prescribe next-line treatment

Other factors are driving the decision to prescribe antibiotics – risk assessment of the prescriber in their setting:

“Cover the patient”

Pearson et al 2017
http://www.who.int/antimicrobial-resistance/LSHTM-Antibiotic-Prescribing-LMIC-Prescribing-and-Dispensing-2017.pdf

Dixon et al 2020 Social Science & Medicine. Antibiotics, Rational Drug Use and Architecture of Global Health in Zimbabwe

Raising awareness

Education

Top-ups to prescriber knowledge

- There is demand for information, but this is more about which antibiotics *will* work
- Guidelines conflict with realities of their role in systems that make them necessary – they have been 'designed-in' eg into algorithms
- Antibiotics as a quick fix for:
  - Care
  - Hygiene
  - Productivity
  - Inequality

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Denyer Willis & Chandler 2019. BMJ GH. Reframing the entrenched problem of antibiotic use

Can we educate people out of this scenario?

Champions

Increase in emphasis on champions

- Perhaps due to need to scale-up stewardship
- Recognition that dynamic people get it done
- Relies on those people

Guardians / Stewards

- Asks people to pledge
- Inexpensive commitment
- Guarding the medicines
- Shift from Rational Drug Use, designed to guard patients and the public purse in resource limited settings

Ways forward for stewardship

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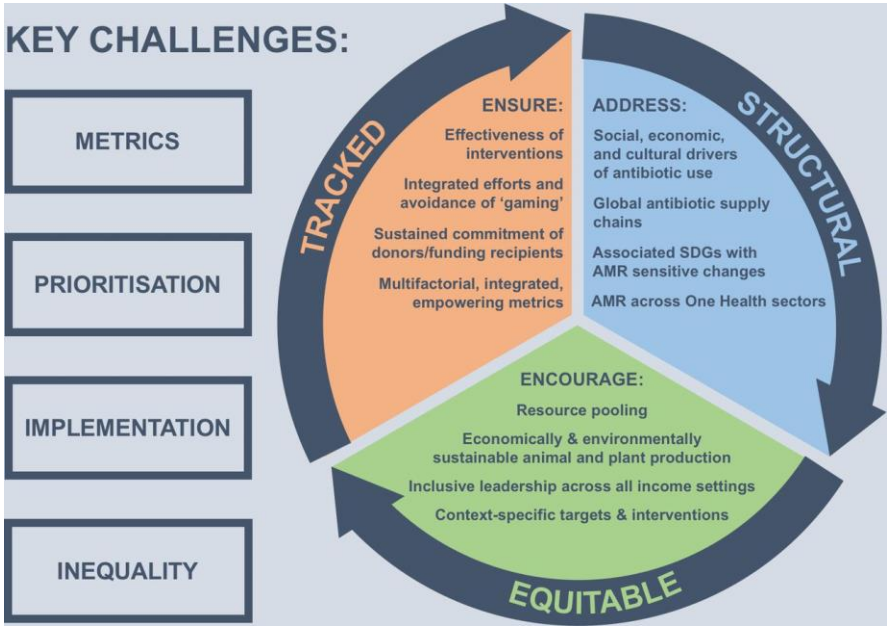
Designing out antibiotics

Reducing reliance on antibiotics – beyond immediate curative/preventive care – requires fixing some of the issues that these medicines currently prop up:

- Care systems
- Sick leave systems
- Economic systems of productivity and standardisation (animals, humans, crops)
- Causes of inequality



Kirchhelle et al 2020 BMJ GH Multidisciplinary Hallmarks for antibiotic policy

Systems as stewards

Stewarding antibiotics within our systems – if we understand antibiotic use as the product of a system rather than a product of individual deviance

- Shift from seeing it as a problem of behaviour– this foregrounds individuals and obscures the fabric of the system that creates, maintains, requires, constrains antibiotic usage
- Mundane and often overlooked artefacts, points of connection and disconnection including forms, algorithms, supply chains etc can become the focus for intervention

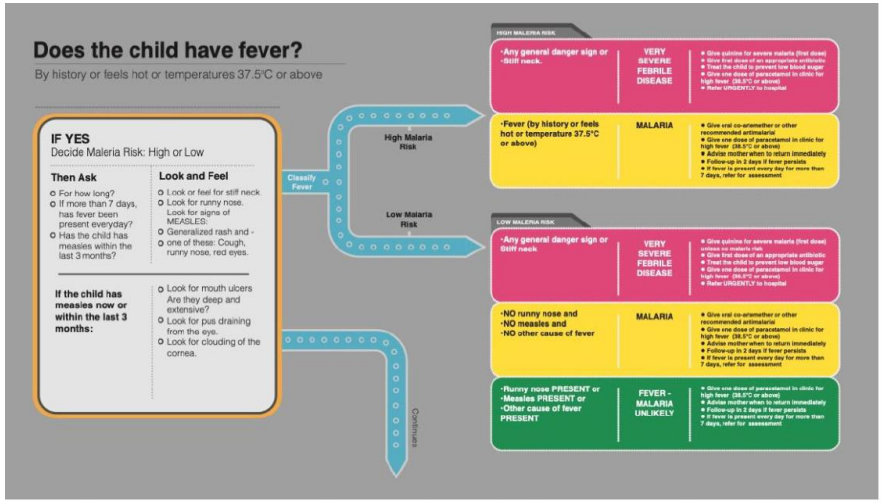


Figure 2. Fever algorithm from the 2008 IMCI chart booklet.. Reprinted from *Integrated Management of Childhood Illness Chart Booklet*, 2nd ed., WHO and UNICEF, page 4, copyright 2008. Accessed 1 October 2018. https://apps.who.int/iris/bitstream/handle/10665/43993/9789241597289_eng.pdf.

Dixon & Chandler 2019 Medicine Anthropology Theory. Algorithms as Blueprints for Global Health

Acknowledgements

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

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Department of Health & Social Care

wellcome

The Fleming Fund

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FRESH APPROACHES to the STUDY of ANTIMICROBIALS in SOCIETY

www.antimicrobialsinsociety.org

Thank you

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