Reworking "Fever" in Global Health: Algorithms and Classification Work in an Era of Antimicrobial Resistance

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Background

- Antimicrobial resistance (AMR) is bringing to the fore many aspects of the infrastructure of global health that relate to the use of medicines.
- Includes algorithms like the Integrated Management of Childhood Illness (IMCI) and Integrated management of Adolescent and Adult Illness (IMAI).
- Categories such as 'fever' being (re)worked to move towards a logic of rationalising and rationing medicines from one of blanket, presumptive coverage
- Using 'classification work' as analytic frame and 'fever' as a case study, we ask:
  – what imperatives are created through the work of classification in the era of AMR?
  – what are the legacies of classifications past and how do they shape what is possible in the present?
  – how do people contend with formal classification systems to provide and access care?

Treating Fever: Antimalarial / Antibiotic Imperatives
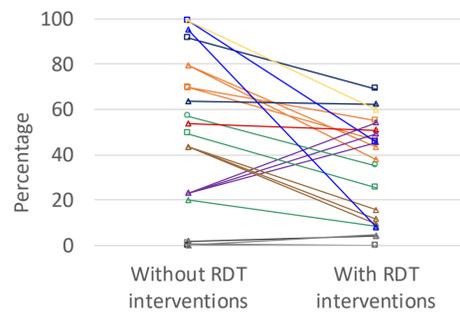
Patients prescribed an ACT of all patients across 18 scenarios, 10 studies in 6 counties without and with RDT interventions.[2]
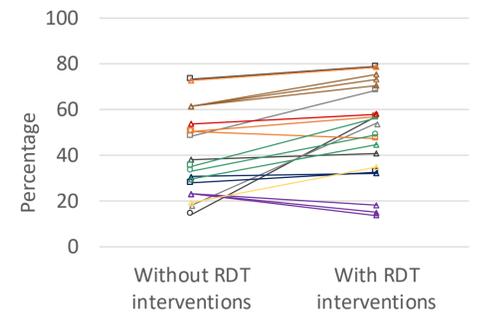
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Algorithms as Blueprints for Global Health

- IMCI and IMAI are are not just guidelines for health workers; they are blueprints for global health – the backbones upon which frontline healthcare is built.
- Upon them are layered training programs, local adaptations, procurement systems, reporting mechanisms, funding streams.
- Classification systems are socio-technical artefacts, but as they get embedded as infrastructure, they become naturalised and slip out of view.[1]
- With the prescribing decision placed at the heart of the algorithms, these blueprints subtly build the imperative to ration medicines into the infrastructure of frontline care
- Always under (re)construction, but never built de novo – new classifications are built upon and must contend with those of the past.

A Classificatory History of 'Fever' through the IMCI

Before malaria RDTs (Before 2010):

Table 1: Adapted from the IMCI fever algorithm (2008)

- *In high-risk areas, fever = antimalarials and/or antibiotics.*
- *Reflects an engrained culture of malarial medicine into which a generation of healthcare workers were socialised.*
- *IMCI integral to the making of malaria as global health concern.*

After malaria RDTs (After 2010):

Table 2: Adapted from the IMCI fever algorithm (2014)

- *Such is the apparent certainty generated by the RDT that low and high risk areas are treated alike (cf. Chandler et al. 2012).*
- *Yet a new classificatory outcome has emerged: "fever – no malaria".*
- *"Give appropriate antibiotic treatment for any identified bacterial cause of fever" – yet the script of how to perform this remains unwritten.*

The Increasing Visibility of 'Non-Malarial Fever'

- Malaria RDTs have unearthed a world of pathogenic and non-pathogenic fevers that are both being increasingly treated with antibiotics.
- While non-malarial fever (NMF) is visualised as a benign green, the threat of AMR suggests that is becoming more befitting of a 'yellow' or 'red'.
- The increasing visibility of NMF has resulted in a number of actions:
  – novel diagnostics (e.g. multiplexed test)
  – aetiology studies
  – The refinement of clinical algorithms (e.g. IMCI and IMAI).
- Yet these interventions appear to be less about opening the fever category up than trying to close down medicines options and restrict their use.

Imperatives and Inequalities

- Will the process of algorithmic refinement finally 'complete' the fever category, securing the 'rational' use of medicines?
- Or will the outcome be more grooves that close off possibilities as they open them and create inequalities as much as they solve them?
- We suggest that a number of processes are obscured:
  – Medicines have become the tail wagging the dog: they decide which illnesses are visible in the algorithms and which are left out or relegated to 'other' categories
  – Continued and reinvigorated pharmaceuticalisation – an increasingly high-tech but 'empty' form of care
  – Flattening of experience and clinical acumen.
  – And on the ground there are more uncertainties and less medicines than ever.
- We are currently exploring how people are enacting and contesting the fever 'script' as part of ongoing fieldwork in Zimbabwe, Malawi and Myanmar.
- Our focus on classification work is one way into the 'excess-access' debate. Just as a spotlight is being cast on 'misuse' and 'overuse' of antimicrobials, our aim is draw attention to the fact that 'behaviour' plays out upon layers of classification work, past and present, that enable or shut down possibilities for providing and accessing care.

FIEBRE
Febrile Illness Evaluation in a Broad Range of Endemicities

BRTI
Biomedical Research and Training Institute

MLW
Malawi-Liverpool-Wellcome Clinical Research Programme

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References
1. Bowker, G.C. and Star, S.L. (2000). *Sorting Things Out: Classification and its Consequences*. Cambridge MA: MIT Press
2. Hopkins et al. (2017). Impact of Introduction of Rapid Diagnostic Tests for Malaria on Antibiotic Prescribing: Analysis of Observational and Randomised Studies in Public and Private Healthcare Settings. *BMJ* 356: j1054
3. Chandler, C. et al. (2012) As a Clinician, You are Not Managing Lab Results, You are Managing the Patient. *Social Science and Medicine* 74(10): 1528-1535.