

DHSC/UKRI Global Effort on COVID-19 (GECO)
Health Research

CARE: COVID-19 and Antimicrobial
Resistance in East-Africa – impact and
response

Coproduced AMR/antibiotic use awareness posters for rural Uganda

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(with support from Dr Kathryn Fredricks & Dr Mike Kesby)²

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Background - Related research and Consortia

The coproduced posters presented below emerge from ongoing research on the socio-microbiological drivers of antibiotic resistance (ABR) in Uganda (Tanzania and Kenya)¹ and the impacts of the COVID-19 pandemic on those drivers². They develop participatory methods utilised in parallel projects that shared the consortia's research findings with the public and invited citizens to codesign public health information about antibiotic use and antibiotic resistance³. The posters presented here were produced as part of a piece of work ('CARE-uplift' grant) funded by the UK Medical Research Council (MRC) which was designed to increase the impact (the utility beyond academia) of the work of the CARE consortium.

Research by the HATUA and CARE consortia focused on exploring the drivers of antibiotic resistance in Urinary Tract Infection (UTI) which is a common ailment in Uganda (Kenya and Tanzania)⁴. Our findings demonstrates that rates of multidrug resistant bacteria in UTI+ responds were very high (47-60% depending on species) suggesting the ABR burden is high and a serious problem in the region⁵. There are many likely drivers of this, but our research notes that inappropriate use of antibiotics (ABs) (use without prescription and or failure to complete recommended minimum courses) is common in East Africa⁶, and the public's understanding of bacterial disease, AB use and ABR is generally limited.

1. The HATUA consortium [Holistic Approach to Unravel Antibacterial resistance in East Africa](#) – Holden et al 2018-22 – Sponsor: UK Medical Research Council

2. The CARE consortium (COVID-19 and Antimicrobial Resistance in East-Africa - impact and response) – Holden et al 2020-22 – Sponsor: UK Medical Research Council.

3. Grassroots 'hatua' to promote better Antibiotic stewardship in East Africa – Kesby 2018-19 – Sponsor: Scottish Funding Council (Global Challenges Research Fund)

4. Asimwe B, et al (2021) Protocol for an interdisciplinary cross-sectional study investigating the social, biological and community-level drivers of antimicrobial resistance (AMR) *BMJ Open* 2021;11:e041418. doi:10.1136/bmjopen-2020-041418

5. Maldonado-Barragán (forthcoming) Predominance of multidrug-resistant (MDR) bacteria causing urinary tract infections (UTIs) among symptomatic patients in East Africa: a call for action

6. Ndiki et al (2022) Non-prescribed antibiotic dispensing practices for symptoms of urinary tract infection in community pharmacies and accredited drug dispensing outlets in Tanzania: a simulated client approach. *BMC Prim. Care* 23, 287 (2022). <https://doi.org/10.1186/s12875-022-01905-6>

The aim of the posters and their co-production

While there is growing awareness of the ABR problem internationally and nationally, and while there are an increasing number of interventions and public information campaigns, many of these are rather 'top down', medicalised and generic. The materials presented below attempt to address these limitations. They are coproduced with local stakeholders to ensure that local perspectives, motivations, narratives and imagery are incorporated into public health information in ways that will appeal and make sense to their intended audience. Participants and researchers used trusted figures, local settings, common language, clear but provocative statements, bold images and humour to help carry the message and draw viewers into engaging with the materials. They attempted to match the public health messages with motivations that would prompt action and with the target audience for the desired behaviour change.

The posters were distributed locally in the Mbarara region in the local language, RuNyankore (below versions are also provided in English to assist international audiences).

The posters below are intended to be useful both in and of themselves but also as exemplars of the potential of participatory approaches to the codesign of accessible public health information.

Methods in outline⁷

In October 2022, international partners provided refresher training on PAR approaches using a manual developed during training conducted in Tanzania in June 2022. This manual guided the CARE-uplift fieldwork in both Uganda and Tanzania in October. Training was also provided in the technical areas of audio-video capture and editing, image manipulation and poster production (using PowerPoint software).

After the training, the research team travelled to Mbarara (one of the HATUA study sites) to engage in the first stage of the UG team's CARE-up lift activities. The community participants (that included key stakeholders in the local health provision infrastructure) were recruited, briefed and consented and trained in PAR methodology, before undertaking the task of designing the outputs shown below. The ethical procedures included detailed briefing and multi-stage consent to ensure that all who appear in the images were happy to do so. Detailed edits and final production of the posters was conducted by the research team but approved by participants before their distribution in the communities and health centres around Mbarara. Work is ongoing to assess the impact and reach of these public health materials.

Members of the team:

Community participants: Duncan Taremwa, Grace Atuheire, Serina Atukwase, Fridah Nankunda, Fredrick Kamugisha, Jovanice, Bamweyitire, Joseph Arinaitwe, Aisha Tibalira, Alex Niwamanya, Racheal Kirabo, Bonny Nalubiri & Julius Nooha

Research Assistants; George Sendegye, Sheila Mwebaze, Joanita Bananuka & Benjamin Sunday

Social Science Lead: Prof. Stella Neema

International partners and training team: Dr Kathryn Fredricks & Dr Mike Kesby

7. Further detail on the methods used will appear in forthcoming publications based on this and related work.

Brief explanation of poster 1: *“Sharing is Caring” - BUT Sharing Antibiotics is dangerous to your health.*

Poster 1 addresses one of the common types of Antibiotic misuse in Uganda which is sharing ABs with family or friends who have similar symptoms. Whether the ABs concerned were obtained via a prescription or via self-medication that bypassed prescription (e.g., were dispensed by a drug seller without a prescription), the result is that patients will fail to complete the minimum course recommended in national treatment guidelines.

Sharing can occur as a consequence of limited resources, or for reasons of convenience (e.g., health centres or drug shops are distant), or because symptom alleviation after a few doses can make the rest of a course seem surplus to requirements and/or because familial obligations and responsibilities actively encourage the sharing of resources.

The poster seeks to challenge this common practice and the economic and cultural logic that rationalise it - encouraging people to learn more about the safe use of ABs.

It attempts to mobilise the powerful motivation of care for family and friends, and to prompt the realisation that actions intended as care may in fact cause harm.



Tunga okuhaburwa
kuruga aha mushaho
w'ebyamagara
otendekirwe.

Guma omire dozi
yemibazi yawe ya
Antibiotics ogimare
no'buwakuhurira
watanдика kubagye

Okugabana emibazi ya
Antibiotics nka
Amokisirini, Fulagyairo
nabandi bantu nikibasa
kuretera oburweire
kweyongyera hamwe
n'okwongyera amaani
obukooko kujooaga egyo
mibazi okaremwa kukira.

**“Okugabana n’akabonero karukundo” - KWONKA
OKUGABANA EMIBAZI NE’KYYAKABI**

Shomesa omwe shomesa boona – Kakyitandike neive-Obwire nibwobu



Seek advice from a trained healthcare professional. Always take the full dose of Antibiotics even when you feel better. Sharing Antibiotics like Amoxicillin and Flaygl with friends and relatives can worsen the disease and increase drug resistance.

“Sharing is Caring” - BUT

SHARING ANTIBIOTICS IS DANGEROUS TO YOUR HEALTH.

Teach one teach all. It begins with you. The time is now.

Brief explanation of poster 2: *Sharing Antibiotics is like “washing clothes and drying them in the soil”*

Poster 2 addresses a similar theme to that addressed in poster 1. It deploys a common phrase used to express folly, to provide a memorable allegory for AB misuse.

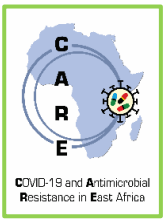
In addition to reworking the motivation of care for others, the poster also mobilises the desire to avoid being thought of as foolish.

The poster also introduces the idea of peer-to-peer advice (addressing the issue of who can act as a messenger of health messages). This encourages viewers to not only learn more about safe antibiotic use themselves, but also to share their new understanding with their peers.



MUTA

GABANA EMIBAZI



OKUGABANA EMIBAZI NINKA

“OKWOZYA EMYENDA OKAGYANIKA OMWITAKA”

Okugabana emibazi ya Antibiotics nikibasa kuretera oburweire kujooga omubazi okaremwa kukira. Guma omire dozi yemibazi yawe ogimare no'buwakuhurira watandika kubagye

SHOMESA OMWE SHOMESA BOONA- KAKYITANDIKE NEIWE OBWIRE NIBWOBU

Ne'bya: Duncan Taremwa, Grace Atuheire, Serina Atukwase, Fridah Nankunda, Fredrick Kamugisha, Jovanice, Bamweyitire, Joseph Arinaitwe, Aisha Tibalira, Alex Niwamanya, Racheal Kirabo, Bonny Nalubiri, Julius Nooha,

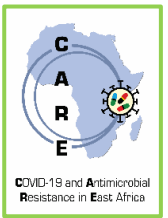


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DO NOT SHARE ANTIBIOTICS



**SHARING ANTIBIOTICS IS LIKE
“WASHING CLOTHES AND DRYING
THEM IN THE SOIL”**

Sharing Antibiotics can worsen the disease and increase drug resistance. Always complete the full dose even if you feel better.

**TEACH ONE TEACH ALL. IT BEGINS WITH
YOU. THE TIME IS NOW.**

Ne'bya: Duncan Taremwa, Grace Atuheire, Serina Atukwase, Fridah Nankunda, Fredrick Kamugisha, Jovanice, Bamweyitire, Joseph Arinaitwe, Aisha Tibalira, Alex Niwamanya, Racheal Kirabo, Bonny Nalubiri, Julius Nooha,



Brief explanation of poster 3: *Taking a half dose of antibiotics “is like digging your own grave”*

Poster 3 takes a more hard-hitting and foreboding approach to messaging and allegory. It bluntly addresses the motivation that individuals wish to protect their health and to avoid illness and premature death⁸. Such approaches and images have been controversial in the sphere of health information (not least those related to sexual health and HIV). Nevertheless, participants favoured this approach/image because they were concerned that people in the community do not appreciate the potential negative consequences of antibiotic misuse for themselves or for society more broadly.

The image used for this particular poster also allowed those creating it to remain visually anonymous (which was their preference).

8. In Tanzania participants reworked the local saying ‘your health is your capital’ to similar effect).

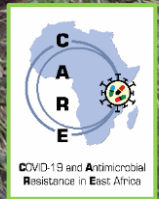


Okumira hafu dozi yemibaza ya Antibiotics

KIRI NKO'KWETIMBIRA EKIINA KYO'KUKUZIKAMU

Hafu dozi
yemibazi ya
Antibiotics
nebasa:

- Kuretera obukooko kwongyera kujooga omubazi
- kwongyera oburweire kutabuka
- Okukozesa sente nyingi om'ukugura emibazi
- N'ikibasa kukuretera waffa



ABASHAHO BASHEMEREIRE KUSHOBORERA ABANTU ABI
BAKUJANJABA OMUGASHO GW'OKUMIRA DOZI YEMIBAZI YA
ANTIBIOTICS EYZIWIRE.

OKUKURATIRA OBUHABUZI BWABO HAMWE NO'KUMARA DOZI

Ne'bya: Duncan Taremwa, Grace Atuheire, Serina Atukwase, Fridah Nankunda, Fredrick Kamugisha, Jovanice, Bamweyitire, Joseph Arinaitwe, Aisha Tibalira, Alex Niwamanya, Racheal Kirabo, Bonny Nalubiri, Julius Nooha



Taking half a dose of Antibiotics **IS LIKE DIGGING YOUR OWN GRAVE**

A half dose of Antibiotics:

- Can increase antimicrobial resistance
- Can worsen the disease
- Will make you spend more money buying medicine
- And can lead to death



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NHS
National Institute for Health Research



**GOOD HEALTH WORKERS WILL EXPLAIN THE IMPORTANCE OF TAKING A FULL DOZE OF ANTIBIOTICS..
FOLLOW THEIR ADVICE AND ALWAYS FINISH YOUR DOSE.**

Poster created by: Duncan Taremwa, Grace Atuheire, Serina Atukwase, Fridah Nankunda, Fredrick Kamugisha, Jovanice, Bamweyitire, Joseph Arinaitwe, Aisha Tibalira, Alex Niwamanya, Racheal Kirabo, Bonny Nalubiri, Julius Nooha

Brief explanation of poster 4: *Taking Antibiotics without a prescription is like fetching water in a basket.*

Poster 4 addresses another major dimension of antibiotic misuse common in Uganda; taking unprescribed prescription drugs. Like poster 2, this poster mobilises a commonly used allegory for foolishness, although in a more overtly humorous way, to highlight the potential folly and danger in self-medicating with antibiotic drugs. In addition, it mobilises the powerful motivation of money, raising the possibility that people might be wasting their limited resources if they use antibiotics without medical advice.

The research findings from HATUA and CARE mean that we recognise that there are many reasons why citizens might feel compelled to purchase drugs directly from drug dispensers, by-passing those with the authority to prescribe them. However, this poster seeks to awaken the public to key issues about which they are largely unaware: antibiotics are not a cure-all, and many common ailments are not cause by the microbes that antibiotics can kill.

The realisation that current practices might not only be bad for the health of individuals but also a waste of their money may be a powerful motivation for learning and behaviour change.

The bold image is intended to be memorable and impactful.

AH'ABWENKI NOSHISHA SENTE ZAWWE?

Enkooro enyingi
niziretwa obukooko
b'wa virus, butari
b'wa bacteria.
Emibazi ya
Antibiotics
nka Amokisirini,
Sipuro na Fulagyairo
terikwita bukooko
bw'a virus.

Okumira emibazi ya
Antibiotics otarebire
mushaho, kiri
nk'okutahira ameizi
omukiibo



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WHY WASTE YOUR MONEY?

Most coughs are caused by viruses, not bacteria.

Antibiotics like Amoxicillin, Cipro and Flagyl don't kill viruses.

Taking Antibiotics without a prescription is like fetching water in a basket.



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Brief explanation of poster 5: *Misusing antibiotics is like sitting on the wrong side of the branch while cutting it.*

Poster 5, like poster 4, seeks to use humour as a powerful way to carry the message and engage the intended audience. It again plays on the motivation that individuals will wish to avoid seeming foolish and uses a familiar rural activity to illustrate its point.

It challenges viewers to question whether the actions they believe are doing them good may in fact be doing them harm.

All of the posters are intended to provide memorable messages and images/allegories that will prompt public discussion and further understanding about ABR and safer antibiotic use.

Okweragurira ne'mibazi ya
ANTIBIOTICS (Okumira emibazi
ya Antibiotics otarebire mushaho)
Nikyanguhirwa bamwe

Kwonka ne'kyakabi



OKUKOZESA KUBI
EMIBAZI YA ANTIBIOTICS
KIRI NKO

**KUSHUTAMA
AHITAGI
RYOMUTI HAZA
OKATANDIKA
KURITEMA.**

Waba orweire,
guma ofune
obuhabuzi
kuruga
ow'omushaho
otendekirwe.



Ne'ya: Duncan Taremwa, Grace Atuheire, Serina Atukwase, Fridah
Nankunda, Fredrick Kamugisha, Jovanice, Bamweyitire, Joseph Arinaitwe,
Aisha Tibalira, Alex Niwamanya, Racheal Kirabo, Bonny Nalubiri, Julius
Nooha



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Tackling Antimicrobial Resistance



COVID-19 and Antimicrobial
Resistance in East Africa

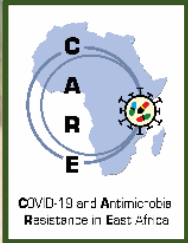
Self-Medication with
ANTIBIOTICS (taking without a
doctor's prescription).
May seem like a good idea

But it is dangerous



**MISUSING ANTIBIOTICS IS LIKE
SITTING ON THE
WRONG SIDE OF THE
BRANCH WHILE
CUTTING IT.**

When you are
ill, always seek
advice from a
trained health
worker.



Poster created by: Duncan Taremwa, Grace Atuheire, Serina Atukwase, Fridah Nankunda, Fredrick Kamugisha, Jovanice, Bamweyitire, Joseph Arinaitwe, Aisha Tibalira, Alex Niwamanya, Racheal Kirabo, Bonny Nalubiri, Julius Nooha



CARE Uplift Posters in use in Mbarara 2023



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