



# Challenging logics of complex intervention trials: Community perspectives of a health care improvement intervention in rural Uganda



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## ABSTRACT

Health systems in many African countries are failing to provide populations with access to good quality health care. Morbidity and mortality from curable diseases such as malaria remain high. The PRIME trial in Tororo, rural Uganda, designed and tested an intervention to improve care at health centres, with the aim of reducing ill-health due to malaria in surrounding communities. This paper presents the impact and context of this trial from the perspective of community members in the study area.

Fieldwork was carried out for a year from the start of the intervention in June 2011, and involved informal observation and discussions as well as 13 focus group discussions with community members, 10 in-depth interviews with local stakeholders, and 162 context descriptions recorded through quarterly interviews with community members, health workers and district officials.

Community members observed a small improvement in quality of care at most, but not all, intervention health centres. However, this was diluted by other shortfalls in health services beyond the scope of the intervention. Patients continued to seek care at health centres they considered inadequate as well as positioning themselves and their children to access care through other sources such as research and nongovernmental organization (NGO) projects.

These findings point to challenges of designing and delivering interventions within a paradigm that requires factorial (reduced to predictable factors) problem definition with easily actionable and evaluable solutions by small-scale projects. Such requirements mean that interventions often work on the periphery of a health system rather than tackling the murky political and economic realities that shape access to care but are harder to change or evaluate with randomized controlled trials. Highly projectified settings further reduce the ability to genuinely 'control' for different health care access scenarios. We argue for a raised consciousness of how evaluation paradigms impact on intervention choices.

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## 1. Introduction

The quest for evidence-based public health policy has led to a

new breed of research in which the randomized-controlled study design – the 'gold standard' for clinical trials – is applied to large-scale trials of clusters assigned to receive health-related interventions. In such trials, citizens of involved communities are transformed into subjects of evaluation, with aspects of their daily lives labelled as 'behaviours', and their health as 'outcomes'. This new approach to public health research has emerged under the rubric of 'complex interventions', in recognition of the relative complexity of changing the behaviour of social groups and organizations (Clark, 2013; Shiell et al., 2008). Evaluations focus on pre-specified outcomes, often measured at the individual level and

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then aggregated at the cluster or community level, and compared between ‘intervention’ and ‘control’ groups (MRC, 2008). Increasing interest has been placed on understanding an intervention’s implementation and mechanisms of effect in order to interpret outcomes (Oakley et al., 2006). Researchers may employ logic models to map interventions through to their intended effects in order to pre-define variables upon which to collect data (Harris, 2010). The importance of understanding ‘context’ when evaluating the impact of complex interventions has begun to be incorporated into health evaluations from other areas of social policy (Pawson and Tilley, 1997). However, still the focus of evaluations of complex interventions in public health is often trained on the intervention, its pre-defined outcomes and its predicted pathway of change.

Anthropologists take a different view to understanding the impact of interventions, drawn from a holistic approach that takes as its starting point the everyday lives of people who may be conceived by various programmes as participants, recipients, and implementers. This diverges from the dominant ‘complex interventions’ perspective of evaluation in two key ways. First, anthropologists have highlighted the way public health research employs a ‘factorial’ model of disease to social and cultural phenomena (Parker and Harper, 2006). In this approach social and cultural aspects of health are often formulated and reduced into discrete and quantifiable ‘factors’ or ‘beliefs’ held by the study population or community and are consequently considered alongside a range of other factors influencing susceptibility to disease at individual or population level. These so-called ‘beliefs’ are often separated from, and assessed in contrast to, ideas of medical science, leading researchers to investigate barriers (to be overcome) or gaps (to be filled) for effective provision of health care services (Yoder, 1997). Anthropologists critique this approach mainly because it creates splits between phenomena that may be more harmful than they are helpful (Parker and Harper, 2006). This approach, often taken in conceptualizing ‘complex interventions’, assumes local contexts to be stable and composed of uniform social realities that can be characterized by categorical variables (Bell and Aggleton, 2012; Chambers, 1998). An anthropological approach, by contrast, characterizes local contexts as diverse and dynamic, requiring researchers to be sensitive to these complexities. In locations with a long history of interventions, the trials themselves, with their varying origins, interests (both local and external), trajectories, target populations and durations often add to this diversity and influence their implementation and outcome (Whyte et al., 2013). The factorial model of disease problems and solutions aligns with a tendency in development to render technical matters that are often political (Murray Li, 2007), and anthropologists have drawn attention to what is obscured by the increasing depoliticization of disease control (Parker and Allen, 2014). For example, malaria has historically been cast as a technical challenge, overshadowing evidence of the political economy of the disease (Eckl, 2014; Packard, 2007). Second, anthropologists often highlight unintended consequences of interventions. The evaluation agenda in many public health interventions is often tightly focused on assessing whether specific interventions produce specific pre-defined effects. The holistic and bottom-up approach of anthropology attempts to situate the interests, realities and priorities in people’s lives (which may differ from but still drive the intervention) in historic, economic and political context, which may include specific interventions as well as combinations of programmes, policies and social movements (Kleinman, 2010; Mosse, 2004).

This paper brings an anthropological perspective to the field of complex intervention trials with an analysis of the impact on community members of a complex intervention trial (‘PRIME’) implemented at public health centres to improve health service provision, particularly for malaria, in Tororo district, Uganda. The

paper provides voices of ‘the field’, extending the notions of ‘context’ and ‘contamination’ evoked in traditional explanations of trial outcomes, by bringing to life the dynamic terrain of opportunities, negotiations and resistances emerging over time and which shape responses to intervention activities.

## 2. Study setting

The PRIME trial was conducted in Tororo district of eastern Uganda by the Infectious Diseases Research Collaboration (IDRC) which was already carrying out other malaria research in the study area, including surveillance of malaria morbidity and mortality and trials of antimalarial drug efficacy and safety (Jagannathan et al., 2012; Nankabirwa et al., 2010; Pullan et al., 2010). The study was conducted in 7 sub-counties of Tororo district; there were 22 lower-level government-run public health centres within the study area, including 17 level II health centres (HC IIs), which are typically staffed by one or two health workers, and 5 level III health centres (HC IIIs), which are staffed by 3–10 health workers, and may incorporate laboratory, in-patient and maternity services. In 2009–2010, when the formative research was conducted, staff shortages were encountered in almost all health centres, shortages in all drugs (including first-line antimalarials) and equipment were common, and many health centres lacked running water and electricity (Jitta et al., 2003).

Tororo district is a poor rural area with limited infrastructure. In 2009–2010, we found that few households had electricity, 25% reported having no toilet facilities, and 25% of household heads had no formal schooling (Staedke, 2010).

### 2.1. Malaria case management in Uganda – a historical perspective

Malaria treatment and diagnosis in Uganda has evolved through different strategies and policy shifts adopted by the national government and implemented by district authorities and ‘partners’ (Talisuna et al., 2014). Between the 1970s and 1990s Uganda was characterised by civil strife which left its health system in a state of disrepair. There was neither a malaria control policy nor strategic plan, and uncomplicated malaria was treated with chloroquine (CQ). With political and economic stabilisation, the Uganda government in conjunction with other global actors restarted the malaria control programmes. Due to widespread resistance to CQ, the Ugandan Ministry of Health selected the combination of CQ plus sulfadoxine-pyrimethamine (SP) as first-line treatment for uncomplicated malaria and introduced a programme for home-based management of fever, targeting children under five in attempt to ensure prompt and effective treatment of malaria. With studies indicating that CQ + SP was ineffective (see for example Yeka et al. 2005), it was replaced in 2004 with artemisinin-based combination therapies (ACTs) including artemether-lumefantrine (AL) as first-line treatment, and artesunate-amodiaquine (AS + AQ) as an alternative. In 2010, the World Health Organization (WHO) recommended that suspected malaria cases be confirmed by a parasitological test when possible (World Health Organisation, 2010). In response, the government of Uganda planned to provide microscopic services in all health facilities at level III and above, and rapid diagnostic tests (RDTs) for malaria at all level II health facilities (Talisuna et al., 2014).

Uganda emerged from years of political strife and economic collapse at a time of increased global attention and availability of funding for malaria control from global actors such as the World Bank, WHO and UNICEF and a host of other international nongovernmental organizations. Uganda’s public sector however lacked the capacity to absorb and implement all the funding as planned. A partnership approach was taken for joint missions by the

Government of Uganda and external agencies. The Ugandan government embarked on a policy of decentralisation in which the districts would be responsible for the planning, coordination, implementation, supervision monitoring and evaluation of health programmes in collaboration with local and international agencies. Over the years, proliferation of local and international partners, exacerbated by poor coordination, has led to an influx of projects in Uganda with some duplication of roles. In Tororo, care for people living with HIV was provided by multiple organisations, a scenario described as the projectification of the health care landscape (Whyte et al., 2013). The same situation exists for malaria and other diseases, with multiple projects operating in parallel, providing material inputs (e.g. insecticide treated mosquito nets) and care (both facility and community based) for local citizens. In addition, there is a large private sector market for health care. A survey undertaken in 2013 found 106 outlets selling medication including general shops (7) and drug shops private clinics (99) (Nalule-Forster, 2013). Despite the shifts in health policy and ongoing deployment of resources, recent research results suggest that the incidence of malaria among young children in Tororo remains very high and may well be rising (Jagannathan et al., 2012).

## 2.2. The PRIME intervention

In response to the high burden of malaria in Tororo and poor access to health care (Kivumbi and Arube-wani, 2005), with patients reluctant to attend health centers due to costs of service (Mutumba, 2005), negative health worker attitudes (Adome et al., 1996) and persistent drug stock-outs (Maxmen, 2012), the PRIME intervention was designed to enhance quality of care at public health centres and by extension improve malaria-related health indicators in community children in Tororo.

The logic of the intervention was to attract patients to health centres through improved services and attitudes of staff, and to provide better management of fevers through the use of RDTs and ACTs. Aspirations for quality health care, which formed the basis for the intervention objectives (described in Staedke et al. 2013), were drawn out from qualitative formative research with health workers and community members (Chandler et al., 2013b). Although many aspects of health care improvements were identified in the formative research, the PRIME intervention consisted of four components selected because they met the project focus, could be clearly defined and acted upon, and consisted of outcomes that could be specified and measured through a cluster randomized controlled trial. Included in these four components were three sets of workshops, which were held over 10 weeks in May to July 2011, and a supplies component delivered throughout the two years of the trial. In the first set of workshops (health centre management), those in-charge of health centres were trained in skills and tools for effective and efficient management of funds, supplies and information. In the second set of workshops (fever case management), all health workers were trained in fever case management and the use of malaria RDTs, followed by supervisory visits at each health centre after 6 weeks and again after 6 months. The third set of workshops (patient centered services) aimed to stimulate motivation, self-reflection and skills development to improve interpersonal interactions between health workers and their patients as well as with colleagues. The fourth component (supplies) provided artemether-lumefantrine (AL) and RDTs through an existing supply chain – the district liaison officer – when stocks were reported by health workers to run low. The 10 comparison health centres were termed 'standard care', with no formal intervention beyond a brief training to improve patient records and visits from the evaluation teams to collect routine data from these records and to monitor levels of stocks and staff.

## 2.3. The PRIME trial evaluation

The PRIME intervention was evaluated with a cluster randomized trial, comparing 10 health centres randomly assigned to receive the intervention with 10 randomly assigned to 'standard care'. The main outcomes of interest were anaemia and malaria parasitaemia among clusters of community children living in households within 2 km of each health centre, and malaria case management of patients attending health centres. A full description of the trial protocol has been published elsewhere, including the sample size calculations (Staedke et al., 2013). In brief, the main trial outcomes were evaluated through three sets of activities: three annual surveys with children recruited from a random cross-section of around 30% households in each cluster; a cohort study with around 1000 children across the intervention and standard care clusters, followed up for 18 months through the trial with frequent home and clinic visits compensated with tokens of sugar, soap, tea leaves and salt; and three rounds of exit interviews with a total of 1400 caregivers of children attending all 20 health centres. These evaluation activities are notable because they involved large numbers of community members at the household level, making them more visible than the interventions at the health centers.

## 3. Methodology

The findings presented in this paper derive from a triangulation of data collected over a year from the start of the intervention in June 2011, including focus group discussions conducted with household heads and caregivers of children, in-depth interviews with key stakeholders, informal discussions with health workers and community members and contextual data collected by the study team. These different methods are described in detail below and formed part of a wider set of evaluation activities described elsewhere (Chandler et al., 2013a).

A total of thirteen focus group discussions were conducted with primary caregivers and heads of households from both the PRIME intervention and standard care arms. The FGDs collected information on community members' perceptions of health centres' services in different areas of the district, changes, if any, in the quality of care, unexpected impacts of the PRIME, and aimed to understand this in the context of the everyday lives of respondents. Ten of these FGDs were held with primary caregivers (PCGs) and three with household heads. These FGDs were further divided into subgroups by geographical location, in catchment areas of health centres in the PRIME intervention areas, in areas close to health centres allocated to the standard care arm, and in areas outside a radius of 2 km of any health centres.

Ten in-depth interviews were conducted with key stakeholders within the district to collect information on the contextual factors and perceptions of the PRIME intervention as it was being implemented as well as the expected and unexpected impacts of the intervention. Those interviewed included district health officials as well as local political officials from the Tororo sub-district and sub-county levels.

A semi-structured contextual record questionnaire was carried out quarterly over one year to compile information about activities and events that may have affected implementation and impact of the PRIME intervention. A total of 162 records were collected with a cohort of key informants at the district level, each health centre and community level where two informants were selected from each of the seven sub-counties – one health assistant and one lay community member identified as being knowledgeable about local health activities. Informal discussions were held with community members and health workers in the course of the intervention and

were later collated, typed, analysed and used to clarify or support information from the other sources.

### 3.1. Ethical approval

The ethical approval for this study was obtained from three institutional review boards: Makerere University's Faculty of Medicine Research Ethical committee (SOMREC Ref 2011–103); Uganda National Council for Science and Technology (UNCST Ref HS864); and the London School of Hygiene and Tropical Medicine Ethics Committee (LSHTM Ref 5831).

## 4. Results

Focus group discussions conducted with community members provided a detailed account of their experiences with respect to intervention health centres, standard care health centres and health centres that were not part of the PRIME trial. The discussions showed mixed impact of the PRIME intervention as perceived by community members. Improvements were reported in some intervention health facilities in terms of the availability of RDTs and antimalarial drugs. At three of these, improvements in staff attitudes towards patients were also reported. In one health centre included in the intervention arm, no changes were reported in the quality of care except for the resources component, and respondents complained bitterly about the services. At all standard care centres, improvements in antimalarial drug availability were noted. However, no other improvements were noted and community members reported being disappointed with the quality of care received, except, at one standard care health centre, where community members were pleased with improvements. Focus group discussions conducted beyond a 2 km radius of any health centre showed that patients continued to attend their nearest health centre, whether the health centre was assigned to the intervention or standard care, or was not involved in the trial. A majority of respondents complained about the quality of services received.

Despite the different characteristics described by respondents about the various health centres available to them, when asked if they would return to that health centre again, all said they would. Below, we discuss these different outcomes and attempt to provide some context for understanding treatment seeking choices. We provide evidence that some of the PRIME evaluation activities were perceived as intervention and describe the terrain of other interventions and research activities which also formed a backdrop to the impact of PRIME.

### 4.1. Improvements at some but not all PRIME intervention health centres

In three of the health centres that received the PRIME intervention, community members narrated improvements in technical, interpersonal and resource aspects of health care provided in the facilities, repeatedly mentioning access to antimalarial drugs, testing with RDTs and a general sense of improvement, as illustrated by the following comments regarding two PRIME intervention HCIs

This is what made me satisfied when I came to the facility: my child was sick, yet I did not know what she was suffering from, they tested, found malaria and gave me drugs that helped my child [recover] (24 year old married mother, small scale farmer. FGD#1).

Another difference we have noticed now is that children no longer die as they used to. These days we rush them to the health centres from where we get quality services and you get that, out

of say ten children who might have died in those days, none die, may be one might die if God decided so. We take children to the health centre where we are given all the necessary assistance (63 year old widow and head of household. FGD#11).

Community members gave accounts of improved interpersonal communication between them and their health care providers in these three facilities, although, as the quote below shows, deficits were still identified at intervention health centres, including availability of other non-malarial drugs.

Our health worker here works wholeheartedly ... she does not segregate regardless of your status. The only problem is that at times [non malarial] drugs run out of stock so she prescribes and tells you to go and find them elsewhere. Regarding the reception, she receives us well, advises and instructs us on what to do. She does not have even a single problem! (48 year old man, married head of household FGD#11)

### 4.2. Minimal improvements at other PRIME intervention health centres

In one health centre allocated to the PRIME intervention (HC#3) where one health worker had attended all workshops and the other none, having joined after the workshops ended, focus group respondents reported the uninterrupted supply of RDTs and antimalarial drugs as the only improvement. No changes were reported in the interpersonal quality of care. Here, community members complained about discriminatory treatment, demands for illegal payments for drugs and occasionally being insulted and kicked out of the health centre. These complaints are retold in many different ways in an FGD conducted with community members who used this health centre. The quote below from one respondent summarizes the sentiments,

I was at the health centre when a man brought his child for treatment. When he arrived the child started vomiting and had diarrhoea. This gentleman was kicked out of the hospital with his child. We requested for a basin from the nurse so that we could bathe the child and have him treated. The nurse refused and instead insulted the man. This man eventually left without treatment. This made me really sad (40 year old married mother, primary caregiver. FGD#2).

At the fifth PRIME intervention health centre (HC#2) discussed in the FGDs, a health centre III where multiple staff worked, community members reported improvement in attitudes but only in some of the health workers. Once at the health centre, they used a variety of strategies to get better services, which included attempting to be served by friendlier health workers, reporting the rude workers to the local council or 'getting tough' with the health workers and demanding to be served.

I went to the health centre in the afternoon with my sick child. The child had diarrhea and was vomiting. When I arrived the health worker asked me why I was late yet I lived near the health centre. She 'barked' at me and asked me to wait. I approached her colleague and explained what had happened and seeing the poor condition of my child, she promptly treated him and I went home (36-year old married mother, small scale farmer. FGD#3).

When she 'barked' at me, I 'barked' back at her. Then I waited to see if she would refuse to give me the drugs. If she hadn't, I would report her at the local council offices. Luckily, she gave me the drugs (27 year old mother, tailor and primary care giver. FGD#3).

#### 4.3. Stakeholder perspectives of improvements

Narratives of enhanced quality of health care services were also reflected in interviews with key stakeholders who, while not reporting from their direct experiences at the health facilities, nevertheless reported improvements at many of the facilities discussed above. Stakeholders with direct supervisory responsibilities in these facilities reported reduced malaria mortality and morbidity, uninterrupted availability of antimalarials, improved management and budgeting, proper diagnostic and drug management practices, less wastage of drugs through over diagnosing and efficient record keeping on all aspects of health care. Other stakeholders less directly involved in the running of health facilities referenced reduced hospital closures and/or disputes between health workers and community members as a proxy measure for improved relationships between community members and health care workers.

#### 4.4. 'Standard care' health centres: business as usual

Services offered at most standard care health centres (five) remained poor as noted in the formative research where community members complained about the quality of care provided - persistent shortages of drugs and other diagnostic supplies, demand for payments, discrimination, neglect and abuse from health workers, lack of patient centred care and overall low level of technical quality. The narration below summarizes the situation reported at most standard care facilities.

I wonder whether the health workers that we have here only learnt to dispense drugs because they don't have any kind of hospitality or kindness towards people. They only know how to abuse and rebuke people (laughter from group), but if you get when there are drugs they can give you. I have never taken any drugs from that health centre but one thing am sure of is, they have no manners towards the patients. You come when you are sick and the only thing they do is jeer at you. In the end you get even sicker and might even die (66 year old male subsistence farmer. FGD#12).

In the same way that community members noted improvements in some health workers and not in others, they too noted that while many health workers in standard care services were generally harsh, some were extreme. In the illustration cited below community members provide a depressing narrative of a health worker who was reported to come to work inebriated and often threatened his patients. Similar tales of deliberate harm (or threats to harm) were reported in other group discussions.

I encourage my friends against going to that health centre because there is a health worker who, when drunk, swears that if you or your patients attend to his facility he shall kill you. And surely he has killed people before, so I always advise people that if he has threatened you, please do not go there (57 year old married man, primary school teacher. FGD#12).

#### 4.5. Improved care in a standard care health centre

In one standard care health centre (HC#20), community members reported improvements, with the quality of health care appearing to equate with that reported at facilities which had improved after the PRIME intervention. The following quote illustrates community members' positive appraisal of the quality of service at this health centre.

I arrived at the facility and found many people. We followed the queue and when it was my turn, the health worker received me then tested my child and found that my child had malaria, then she gave me medicines and explained how I should administer them: today, give one, give one in the evening, at night give one until they are finished and when they are finished, bring the child back for testing. I took the child back for testing and they found the child no longer had malaria (30 year old mother, pre-primary school teacher. FGD#5).

The context record findings at this health centre and its catchment area revealed the presence of many other projects and events that may have influenced the observed improvements. Most similar to the PRIME intervention was a programme known as SURE (Securing Uganda's rights to Essential Medicines), funded by the United States Agency for International Development (USAID) and run by Management Sciences for Health, which improved supplies and prescribing of medicines. Through this programme, health workers at facilities across Tororo were given on-the-job training and supportive supervision including feedback on storage, stocks, dispensing, prescribing, ordering and reporting. Although other health centres also received this intervention, it is possible that it was particularly taken up in this health centre due to the personalities and motivations of individuals involved. The health centre also had a link to Finland through a local nongovernmental organization (NGO), receiving a visit during the trial period from a group of Finnish youths who cleaned and painted the building.

#### 4.6. Impact of interventions on future health care choices

Although community members valued and noticed improvements in the quality of service in some health centres, they did not report changing where they sought treatment. All respondents said they continued to seek care at the same sources, even from those facilities where they complained of poor services. When asked why they continued to use these facilities they mentioned the presence of RDTs and antimalarial drugs, trained health workers, and an appreciation of the benevolence by their government who provided them with qualified though 'harsh' health workers. Alongside this, respondents portrayed a sense of desperation as exemplified by this statement: 'Do the poor get angry? The poor don't get angry. If you are poor, even if they abuse or beat you up, you, you still go back' (40 year old married mother, subsistence farmer FGD#6). The sense that people sought care at health centres despite being disappointed with care is echoed in the continued requests by patients for other facilities beyond the scope of the PRIME intervention, such as to increase the number of health workers, expand buildings and space within facilities, provide clean water and electricity, in-patient services, and clean toilets. In this case, the PRIME intervention, though 'complex', addressed only part of the needs of community members from their health facilities and was therefore 'not sufficient enough' to elicit a major change in the choice of the point of access to health care.

#### 4.7. Unintended consequences of PRIME and the 'malaria people'

When asked about the intervention and the changes it had brought to their health seeking practices, some community members mentioned that they or their neighbours relied on the health services provided by the PRIME and other evaluation research teams instead of visiting their health centres, as can be seen in their comments below.

Whatever I have to say is, there are those people, [malaria people] I don't know where their computer (GPS) is and how

they know, but they just come to your home and give treatment to you and to your children and then they go back (52 year old married man, small scale farmer. FDG#12).

The real change I have noticed is the assistance by the malaria people. My child is enrolled in the malaria study; therefore I ensure that I take him for blood tests, and then appropriate assistance is given (42 year old mother, pre-primary school teacher FDG#2).

The interpretation of evaluation activities as intervention reflects the nature of these activities: children in the cohort studies received a health service during the evaluation visits. By offering a health service at household level during the evaluation process, the PRIME intervention which was facility based, may have undermined its intended outcomes if community members preferred to wait for the service provided by evaluation activities than visit a health centre. Reports of 'malaria people' bringing health services to the doorsteps of community members were however not restricted to the PRIME study areas: those in the FGDs outside of the PRIME evaluation catchment areas reported the activities of the 'malaria people' equally frequently, presumably in reference to the numerous other malaria research and intervention projects ongoing in the study area.

Above, community members describe the benefits of being allied to the 'malaria people'. However, there were also stories of how this allegiance caused problems for those enrolled in the trial. For example, some reported being discriminated against by health workers because of their participation in malaria projects.

The people who are in the malaria study have a card that they are supposed to carry every time they visit the hospital. But if your child is in the study and it falls sick, when you bring it to the government hospital, the health workers send you away and ask you to wait for your people. Others insult you and say you are only interested in getting money (presumably transport reimbursement) from the Malaria people (40 year old married mother, subsistence farmer. FDG#6).

The potential for selection to participate in intervention projects to be a double-edged sword is equally captured in mixed feelings of resentment and jealousy from those excluded. This is illustrated in the comment below from one of the FGDs, a sentiment that was repeated in other informal discussions with stakeholders and community members.

My concern is this; here in this zone, I have never seen those malaria people enrolling children. I am left wondering, weren't they told about this zone? Don't they know this place? My request is that they should also come here because our children also suffer from malaria (38 - years old, female, married tailor, FDG 2).

While acknowledging the benefits of the intervention, other community members expressed their suspicion about the motives of the intervention and resented its narrow focus expressed in statements such as, 'Like in this area, it is always Coartem (AL), regardless of the illness, aren't there any other drugs brought there? (36 year old married mother, primary school teacher. FDG#2).

#### 4.8. The terrain of health care interventions

The context record of events and activities in Tororo revealed an array of health related activities, projects and programmes, run by

several local and international nongovernmental organization (NGOs), faith based and community based organisations. These activities were supported by groups such as the USAID, PLAN international, Baylor, WHO, and Traditional and modern health practitioners together against AIDS group (THETA). Although the different projects targeted different health problems, like the PRIME intervention, most of them involved retraining health workers on patient care services, provided incentives and support supervision and the intervention product - be it a mosquito net, drugs, drug storage shelves or toilets.

Our findings suggest that these programmes competed for community members' attention, resources and collaboration. At the same time, they conjured a terrain of immediate opportunities - medical services and products - that community members competed for, negotiated or resisted depending on needs and interests. Community members wondered loudly why their children were excluded from our project. When a participant in an FGD praised the services at an intervention arm facility, other FGD participants quickly interjected, 'it is because her child was included in the project, her sister works for the project!' Others begged the research team to include them in future. As shown above, community members questioned projects with a narrow focus, such as those providing malaria medications while excluding other diseases. Over time, community members got used to short term projects whose promise or premise for scaling up rarely materialized. In such a context, intervention projects were valued for their short term opportunities as opposed to their potential for long term health service improvements.

A final contextual aspect that had a strong influence on the outcome of the PRIME intervention was the Ministry of Health reversion to the 'Push' system in the drug delivery procedures in lower level government health centres. At the time of PRIME implementation, the Uganda government replaced the 'Pull' system with a 'modified Push' system for the delivery of drugs in which the government supplied a set quantity of drugs and other health supplies quarterly to each health center. Health care workers as well as community members in Tororo reported that this shift improved drug supply in all health centers (see also [Bukuluki et al. 2013](#)) thus affecting the measurable differences between PRIME and standard care with regard to the supplies component.

## 5. Discussion

This paper highlights that community members perceived a small positive impact of the PRIME intervention on quality of care at most health centres. However, this improvement was overshadowed by other needs of health services beyond the scope of the intervention, and treatment seeking appeared not to have changed significantly, with patients still utilizing health centres they considered inadequate as well as positioning themselves and their children to access care through other sources such as research and NGO projects. These findings are compounded by the challenge of designing and delivering interventions within a paradigm that requires clear (and factorial) problem definition and easily actionable and evaluable solutions. Such requirements mean that interventions often end up working on the periphery of a health system rather than tackling the murky political and economic realities that shape access to care but are harder to change or evaluate with randomized controlled trials. The findings also highlight the complexity of the terrain of care possibilities into which health interventions are often introduced and expected to produce effect in relation to a 'control' population. When multiple sources of care operate and are dynamic over time and place, the notion of 'standard care' dissolves, taking with it the premise for a controlled trial.

### 5.1. Reflections for interventions

The PRIME intervention intended to improve quality of health care by addressing four areas for improvement at health centres in Tororo. Findings from this study show that although community members recognized and appreciated the changed conditions in some of the facilities, they did not change their sources of health care in favour of the improved centres. The choice of point of access to health care appeared to be determined by much more than the four domains addressed in the PRIME intervention (see also [Samuelsen \(2004\)](#) for a view of therapeutic itineraries in Burkina Faso beyond pragmatic factors). A closer look at what shaped the intervention is therefore required. The PRIME intervention was carefully designed, starting with formative research in which priorities for improving health centres were identified from both community members and health care providers, and were interpreted in the local political, economic and historical context ([Chandler et al., 2013b](#)). Following the pattern of complex intervention trials ([MRC, 2008](#)), intervention components were then selected on the basis of being definable and replicable ([Sridharan and Nakaima, 2011](#)), feasible for a small-scale project and scalable if effective ([Campbell et al., 2000](#)), relevant to the pre-defined trial outcomes of community malaria morbidity, evaluable with a cluster randomized trial design (so targeting health centres rather than a wider catchment to avoid contamination), and politically acceptable to a number of local, national and international 'stakeholders'. Each of the components was pretested to ensure it would be implementable in this context ([DiLiberto et al. forthcoming](#)).

The result of this process was to narrow down the intervention such that its components were deemed by community members to be a fraction of the needs required from health care services. These needs were often voiced in terms of resources, and narratives often reflected the political economy of such resources. For instance, the intervention targeted malaria control to the exclusion of other disease conditions or basic infrastructure such as in-patient facilities or clean water, which reflects the well-rehearsed politics of siloed funding ([Harper and Parker, 2014](#)). Even within malaria control, the project only provided two resources – RDTs and anti-malarials – a situation that was critiqued by community members who complained about the narrow focus, and which reflects greater funding for research and action to scale-up specific technologies rather than to respond in an integrated way to health needs ([Chandler et al., 2014](#)). The PRIME intervention can be interpreted to have been designed within a particular paradigm of 'identifying' problems, solutions and impacts as focused, bounded entities. Our reflections lead us to question whether working within this paradigm may limit the achievement of substantial change. In the case of improving access to quality health care in Uganda, the models of funding, politics of intervention remit, tendency towards rendering technical the 'problems' for which solutions are sought, and the preference for study design that can attribute a clear effect of the intervention to measurable outcomes, mean that interventions end up working on the peripheries of health systems. More substantial and sustainable change may be achieved by tackling the political and economic challenges that hamper the delivery of services and resources, but in global health, these domains tend to be avoided due to their messy and political nature ([Harper and Parker, 2014](#)), which renders them un-intervenable by small-scale and time limited research projects that are tasked with providing evidence for future funding decisions.

### 5.2. Reflections for evaluations

Researchers working with complex health interventions have recognized the importance of considering the context in which

interventions are implemented for understanding how effects are manifested ([Hawe et al., 2004](#)), although guidance remains oriented around theorizing, isolating and measuring how change takes effect *within* an intended remit of an intervention rather than from a perspective of the local ecologies in which they are enacted ([Cohn et al., 2013](#)). Cluster randomised controlled trials aim to bracket out such complexity through the process of random allocation of the intervention to units considered comparable ([English et al., 2011](#)). The lives of community members living around different health centres intersected with the PRIME intervention and evaluation activities in numerous and different ways, rather than in one particular way due to presence (or absence) of the intervention. This paper shows how patients and parents oriented themselves around possibilities for care from numerous sources of care from different private providers, healers, churches, NGO and research projects, a 'projectified' terrain that has also been noted by others in Uganda ([Whyte et al., 2013](#)). That these possibilities emerge and are developed over time and space means that 'the community' of presumed recipients of the intervention can be conceptualized better as active pursuants of care. In such a context, we echo others ([Campbell et al., 2000](#); [Singer and Vogus, 2013](#)) in asking, is the notion of 'standard care' useful as a binary comparison with 'intervention', or should an approach be developed that takes the current situations in their complex plurality as the starting point, rather than the narrowly defined remit of the intervention's intended pathway of change? This projectified landscape also points to the need for a perspective that moves beyond evaluations of multiple small-scale solutions to ask bigger picture questions ([De Savigny and Adam, 2009](#)).

## 6. Conclusion

The current paradigm of global health research places value on the production of evidence of measurable pre-defined impacts of definable, discrete and replicable interventions. This case study suggests that these values narrow the possibilities for interventions, with preference for factorial, depoliticized models of problems and solutions to health and healthcare improvement. If we continue to factorialise and depoliticize health care access, we will continue to miss the divergence in experiences as well as convergence around underlying politics that allow for inequity in health and access to care. For improvements to health care that are meaningful to local populations, the design of interventions and evaluations should attend to local priorities and be unafraid of tackling messy and political realities that shape care. We encourage global health researchers to reflect on and where necessary to challenge the logic of dominant paradigm that shapes possibilities for interventions and evaluations.

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