



LEARNER TREATMENT KIT



CONTINENT

Africa



COUNTRY

Malawi



HEALTH FOCUS

Malaria



AREAS OF INTEREST

Education sector involvement, Community mobilization, Alternate care providers



HEALTH SYSTEM FOCUS

Service delivery

LEARNER TREATMENT KIT, MALAWI

A cross-sector, collaborative initiative that supports teachers to address the high burden of malaria experienced by school-age children through diagnosis and treatment within primary schools.

Authors: Lindi van Niekerk and Rachel Chater

This case study forms part of the Social Innovation in Health Initiative Case Collection.

The Social Innovation in Health Initiative (SIHI) is a collaboration by the Special Programme for Research and Training in Tropical Diseases, at the World Health Organization, in partnership with the Bertha Centre for Social Innovation and Entrepreneurship, at the University of Cape Town, the Skoll Centre for Social Entrepreneurship, at Oxford University, and the London School of Hygiene and Tropical Medicine.

This case study was prepared by the Bertha Centre for Social Innovation and Entrepreneurship, Graduate School of Business, University of Cape Town, on behalf of the Social Innovation in Health Initiative. Research was conducted in 2015. This account reflects the stage of social innovation at that time.

SIHI Academic Advisory Panel: Lucy Gilson; Lenore Manderson; and Rosanna Peeling

For more information on SIHI and to read other cases in the SIHI Case Collection, visit www.socialinnovationinhealth.org or email info@socialinnovationinhealth.org.

SUGGESTED CITATION:

van Niekerk, L. & Chater, R. (2016). *Learner Treatment Kit, Malawi*. Social Innovation in Health Initiative Case Collection. [Online] WHO, Geneva: Social Innovation in Health Initiative, Available at: (insert URL used)

CONTENTS

ABBREVIATIONS.....	4
CASE INTRODUCTION.....	5
1. INNOVATION PROFILE AT A GLANCE	6
2. CHALLENGES	7
3. INNOVATION IN INTERVENTION.....	7
3.1 “First aid” for malaria.....	8
3.2 Teacher task-shifting.....	8
4. IMPLEMENTATION.....	9
4.1 Innovation in implementation.....	9
4.2 Organization and people	10
4.3 Cost considerations	10
5. OUTPUTS AND OUTCOMES.....	10
5.1 Impact on health care delivery.....	10
5.2 Community perceptions.....	11
6. SUSTAINABILITY	11
7. SCALABILITY.....	12
8. KEY LESSONS.....	13
8.1 Implementation lessons.....	13
8.2 Personal lessons.....	13
CASE INSIGHTS.....	14
REFERENCE LIST	15

ABBREVIATIONS

3IE	International Initiative for Impact Evaluation
ACT	Artemisinin-combination therapy
EHP	Essential Health Package
HIV	Human immunodeficiency virus
HAS	Health surveillance assistant
LSHTM	London School of Hygiene & Tropical Medicine
LTK	Learner Treatment Kit
MOE	Ministry of Education
MOH	Ministry of Health
MRDT	Malaria rapid diagnostic test
PLoS	Public Library of Science
PTA	Parent Teacher Association
PTK	Pupil Treatment Kit
SP	Sulfadoxine/pyrimethamine
US\$	United States dollar

CASE INTRODUCTION

The Learner Treatment Kit (LTK) initiative is a cross-sector collaboration that seeks to address the high burden of malaria experienced by school-age children through equipping teachers to diagnose and treat malaria within primary schools. While there has been a lot of focus on addressing malaria in children under-five years old, children between 6 and 15 years were found to have a four times higher risk of symptomatic and asymptomatic infection than younger children (Walldorf et al., 2015). Research conducted in 50 schools in the Zomba district has found that 60% of school-age children were infected with *Plasmodium falciparum*, which is a major cause of anaemia, and impaired cognition and educational development.

The LTK initiative partners developed a customized teacher-training programme, incorporating all the elements of knowledge and practical skills required by a layperson to feel confident in performing the testing and treatment process for malaria. Teacher training includes a seven-day residential training followed by a two-week practicum experience in the local public health care facility. Within each primary school, two to three teachers including the headmaster are selected for training. Teachers are trained to identify children with symptoms of malaria, assess severity, conduct the test and accurately interpret the result, dispense the required medicine as per the weight of the child, accurately document all steps taken, monitor side effects, and know when to refer to a formal health care facility. Schools are equipped with a learner treatment kit,

which is a wooden box containing supplies and treatments required for managing common emergency illnesses seen in school-age children, including ACT and malaria rapid diagnostic tests.

The LTK initiative is active in 58 primary schools in the Chikowi Traditional Authority, Zomba District, Malawi. From November 2013 to March 2015, 32 193 consultations and 20 290 MRDTs were performed.

The LTK case study shows how the education system can contribute to addressing the burden of malaria in school-age children. Access to essential diagnostics and drugs is enhanced by task-shifting the testing and treating functions to school teachers, and equipping school facilities to be conducive to these functions. It also demonstrates how mobilizing and actively engaging different groups, including community members, traditional authorities, health authorities, education authorities, academic institutions and nongovernmental organizations, enhances the durability of an intervention.

If learners are treated within the school, there is a smile on the face of the parents, because it reduces the burden of travelling long distances to go to health services. They can concentrate on their day-to-day activities. Productivity at the household improves because they are not spending time admitting the child to hospital for admissions etc. There are a lot of economic benefits from this simple intervention. (National Education Officer, Lilongwe)

1. INNOVATION PROFILE AT A GLANCE

Project Details

Project name	Learner Treatment Kit
Founding year	2011
Primary implementers	Austin Mtali, Sponsorship Health Co-ordinator, Save the Children Malawi; Stefan Witek-McManus, Researcher, London School of Hygiene and Tropical Medicine
Nationalities	Malawian, British
Organizations involved	Save the Children Malawi; Ministry of Health; Ministry of Education; College of Medicine, University of Malawi; London School of Hygiene and Tropical Medicine
Organizational structure	Nongovernmental organization (Save the Children)

Innovation Value

Value proposition	A cross-sector collaborative initiative that supports teachers to address the high burden of malaria experienced by school-age children through diagnosis and treatment within primary schools.
Beneficiaries	Primary school learners, parents from rural communities, teachers
Key components	<ul style="list-style-type: none"> • Equipping primary school teachers with the knowledge, skills and tools to diagnose and treat any school-age child presenting with symptoms of malaria • Mobilizing the community (parents, teachers, community organizations) to engage and support in the school-based malaria treatment initiative • Fostering cross-sectoral collaboration and implementation across academic institutions, government departments and nongovernmental organizations.

Operational Details

Main income streams	Sponsorship donations by Save the Children and 3IE research funding
Cost considerations	US\$ 162 646.85 (annual project costs)

Scale and Transferability

Scope of operations	58 Primary Schools within the Chikowi Traditional Authority, Zomba District, Malawi. 32 193 consultations and 20 290 MRDTs performed (Nov 2013 - March 2015)
Local engagement	A multi-sector collaborative initiative involving and engaging all Ministry of Health and Ministry of Education stakeholders from district to national level. Integrated into the National Malaria Control Programme.
Scalability	<p>This intervention will be scalable under the following conditions:</p> <ul style="list-style-type: none"> • High malaria endemic area with poor access to primary health care services • Community willingness to accept the intervention • Regulation frameworks to permit teacher task shifting or the willingness to adjust existing regulations • Malaria rapid diagnostic test (MRDTs) and anti-malarial drugs, ideally available by the government • Political will and support from the Ministry of Health and Ministry of Education
Sustainability	The programme will require on going funding. Total programme costs can be reduced though sourcing diagnostics and drugs through the Ministry of Health. Programme iterations are being considered to prevent a reduction in teaching time.

2. CHALLENGES

Malawi is a landlocked country of 16.7 million people in southern Africa. It is third poorest country in the world with 50.7% of its people living below the poverty line (World Bank, 2015). However, despite challenges and constraints, Malawi has made impressive improvements in many of the health indicators associated with the Millennium Development Goals. HIV prevalence reduced from 24% in 1990 to 8.6% in 2014; under-five child mortality reduced from 247 to 71 per 1 000 live births, and there have been equitable increases in coverage for many essential health services (Countdown to 2015, 2015).

Given the country's tropical climate and peak rainy season from November to April, malaria is endemic in Malawi. In 2013, 1.3 million cases of malaria were confirmed and 3 723 deaths reported. Children are a key population group affected by malaria. Data from the 2009 *Health Information System* report that 52% of child inpatient admissions and 60% of child hospital deaths were due to malaria and anaemia (Government of Malawi, 2010). Great focus has been placed on standard interventions and surveillance to address malaria in children under-five. Increasingly, new research from Malawi is highlighting the neglect to address malaria in school-age children. Children between 6 and 15 years were found to have a four times higher risk of symptomatic and asymptomatic infection than younger children (Walldorf et al., 2015). However, treatment-seeking behaviour in this age group is markedly different as compared to children under-five. School-age children were less likely to be taken to a health care facility within 48

hours of onset of fever, compared to younger children, and would more often be taken to a corner shop. In addition, only 32.4% of these children would have access to and/or sleep under insecticide-treated bed nets (Walldorf et al., 2015). Research conducted in 50 schools in the Zomba district has found that 60% of school-age children were infected with *plasmodium falciparum*. Asymptomatic infection is a major cause for anaemia, impaired cognition, learning and educational achievement (Mathanga et al., 2015; Partnership for Child Development, London School of Hygiene and Tropical Medicine, Kenya Medical Research Institute-Wellcome Trust Research Programme, & World Bank, 2009). It has been estimated that malaria is responsible for 4 to 10 million days of school absenteeism per year in Africa (Nankabirwa et al., 2014).

Multiple socioeconomic and health system factors are responsible for malaria not being addressed adequately in school-age children. Malawi has no formal primary health care policy, but provides basic curative, preventative and rehabilitative health care services as part of the Essential Health Package (EHP). Through the EHP, government health care services are provided free of charge in Malawi (Makaula et al., 2012). For many communities living in rural areas in Malawi, transport costs and lost earnings hinder access to government facilities. In addition, human resource and available drug shortages make the health care experience sub-optimal for many, and hence negatively influences health-seeking behaviour.

3. INNOVATION IN INTERVENTION

Save the Children has been active in Malawi for many years. As part of the School Health and Nutrition Programme in 2000, the organization implemented the Pupil Treatment Kit programme (PTK) in 101 schools in the Mangochi District. This basic first aid kit for conditions commonly experienced by school-age children had one special inclusion: the antimalarial drug Sulfadoxine/pyrimethamine (SP).

A training programme for teachers accompanied the implementation of the PTKs in the schools, and teachers could provide treatment for all suspected malaria cases. Over 92 000 children were reached by this intervention. In 2008, with the change of international treatment protocols, SP was discontinued and the programme ceased.

In 2012, based on strong community feedback and on request from the Ministry of Health (MOH), Save the Children re-energized the project in partnership with the MOH, the Ministry of Education (MOE), the College of Medicine in Malawi, and the London School of Hygiene and Tropical Medicine. The project team selected the Chikowi Traditional Authority within the Zomba district in southern Malawi to re-introduce the project. Initially 29 primary schools were selected, but over the past three years, the programme has been scaled to 58 primary schools.

3.1 “FIRST AID” FOR MALARIA

Since the PTK initiative in the early 2000s, treatment protocols for malaria have been updated and artemisinin-combination therapy (ACT) is now recommended as first-line treatment for uncomplicated malaria. ACT can only be administered after a confirmatory parasitological test either via microscopy or via utilizing a malaria rapid diagnostic test (MRDT) at the point of care. The availability of MRDTs has opened multiple alternate avenues to facilitate diagnosis. The revitalized pupil treatment kit, now called the Learner Treatment Kit (LTK), is a wooden box containing multiple supplies and treatments required for managing common emergency illnesses seen in school-age children. The box includes the following: dressings, antiseptics, eye antibiotic ointment (tetracycline), paracetamol, oral rehydration solution, gloves, ACT, MRDT, weighing scales, lancets, a timer and a container for dispensing sharp materials.

3.2 TEACHER TASK-SHIFTING

Globally, teachers are not considered health workers. In Malawi, the notion of task-shifting malaria diagnosis and treatment to teachers did not go uncontested. The use of the rapid diagnostic tests as part of the LTK comes with the prerequisite that the tester must have the necessary skills to perform a finger-prick blood test and manage sharp materials in a safe way. In collaboration, the project partners set out to develop a customized teacher-

training programme incorporating all the elements of knowledge and practical skills required by a layperson to feel confident in performing the testing and treatment process for malaria.

Within each primary school, two to three teachers, including the headmaster, were selected for training. The engagement of the headmaster facilitates support for the teachers and the LTK initiative. To be selected, teachers must be 45 years or older, and must have worked at the same school for at least two years.

Teacher training includes a seven-day residential training followed by a two-week practicum experience in the local public health care facility. Teachers are trained to identify children with symptoms of malaria, assess severity, conduct the test and accurately interpret the result, dispense the required medicine as per the weight of the child, and accurately document all steps taken. In addition, teachers need to have sufficient understanding and knowledge to know when to refer the child if he or she is not improving on treatment, how to monitor for side-effects, and how to dispense sharp materials in a safe, community-friendly way. Teachers were enthusiastic to participate, and overall felt they benefited from the training. *“Having come back here to practise what I have learnt doing there, I have enjoyed it. It is what I have learnt from there, I see the fruits of that. I do appreciate and enjoy that.”*

(Teacher, Primary School, Zomba District)

The learner-teacher relationship is an important component to the success of the initiative. *“There is a cordial relationship between the teacher and a learner, so normally when a teacher is saying, ‘Okay, I want to assist you,’ the learners are always flexible.”*

(District Official, Zomba District)

Once teachers complete their training and return to their respective schools, Save the Children along with the District Health and Education officials are actively engaged in supervising and supporting them monthly.

4. IMPLEMENTATION

4.1 INNOVATION IN IMPLEMENTATION

Partnering with the community

Over its many years of activity in Malawi, Save the Children has gained strong buy-in from the local communities in which they have been operating. Core to its implementation principles are community consultation, engagement and mobilization. A traditional authority area was purposefully selected for implementation. Traditional authorities are comprised of a collection of villages, governed by village headman and a senior chief. Leveraging existing community structures supported community engagement and mobilization.

Community sensitization campaigns were hosted from the start of this initiative in 2012. During these meetings, all village heads associated with a school, as well as the School Management Committee and the Parent Teacher Association (PTA), were invited to attend. Going beyond just consultation, community members, especially parents, were engaged in some of the programme processes. An example of this was around waste disposal, ensuring that sharp objects like lancets are safely disposed after use. This engagement allowed the community to collectively find ways of addressing this issue. Some PTAs have used their discretionary public-funded school development grant to contribute towards the initiative in their schools. The parents of one school erected a small stand-alone building, which teachers can use as a dedicated, private space to test and treat the children.

So everyone has a role in the community we play in order to support this programme. We find our work even easier as we are going with the programme because everybody is in support of the programme. Even themselves, when somebody is misbehaving in the programme, they could even go to that person and talk to him personally because we have empowered the community. In the selection of the teachers, they were at liberty to say, 'Teacher, no, no, no. Don't do that'. (Head Community-based nursing, Zomba District)

Integration into the public health system

From the outset, the team attempted to integrate certain processes into the existing government health system. Instead of creating its own distribution system for medicines and supplies, these were delivered to the government health facilities. Teachers were required to make the journey to these health centres to collect any supplies required in the school. By not creating a parallel distribution system, the costs of this initiative have been reduced.

Using evidence to influence regulators

Despite the precedent set during the PTK Initiative from 2000 to 2007, not all stakeholders openly welcomed the new role of teachers providing a service like that performed by health care workers. *"When we had this idea that we want to implement this in schools, obviously looking at our mandate, this is something very impossible. Even the Ministry of Health were objecting saying, 'No, this can't be.' It's like we were training teachers to become doctors."* (National Education Official, Ministry of Education, Lilongwe)

The Ministry of Health had to take a stand against professional medical councils, who were reluctant to allow the intervention to continue. *"The Medical Council will not allow any teacher the permission to treat. But then, this [research] gave us room to negotiate with them. The Ministry has taken responsibility, that although it is against medical council, it is an intervention that is going to help our school children."* (National Health Official, Ministry of Health, Lilongwe)

Through inclusive collaboration with two academic institutions, the implementing team used baseline evidence as a lever for change. Health and education surveys were conducted on 2 785 children in the Zomba district to assess levels of parasitaemia, anaemia, attention, literacy, numeracy and days of absenteeism. This evidence was compelling enough to convince both the MOH and MOE to accept the implementation of the programme.

4.2 ORGANIZATION AND PEOPLE

The LTK initiative is a multi-partner undertaking. Establishing collaboration and gaining buy-in from all stakeholders from district to national level was not an easy task, but through ongoing engagement with all the partners, the team built trust and forged a unified vision. At the district level, officers from the Malaria Control Programme, the Community-based Health Programme and the Education office worked closely together on every detail of the project implementation. At a national level, champions in the MOH and MOE have been involved in implementation.

On behalf of Save the Children, Austin Mtali, sponsorship health co-ordinator, has been the co-lead implementer over the past three years, along with Stefan Witek-McManus, a researcher from the London School of Hygiene and Tropical Medicine (LSHTM). Natalie Roschnik, Joby George, Tuyese Chimuna and David Melody from Save the Children Malawi, all formed part of the broader support team. A range of members from different partnering organizations were also involved: Don Mathanga (Malaria Alert Centre, Malawi), John Sande (National Malaria Control program, MOH), Katherine Halliday (LSHTM) and Simon Brooker (LSHTM), as well as

previous Save the Children staff and district-level partners.

Among all partners engaged in this programme there is a strong sense of pride and ownership of a shared achievement in improving the health and education for school-age children affected by malaria in Malawi. *“So we are proud of that. We are contributing something to the entire world to learn something from what we have done using whatever we may have. We might not have everything. But using what is available, we have been able to achieve this.”* (National Education Officer, Lilongwe)

4.3 COST CONSIDERATIONS

The Learner Treatment Kit Initiative was funded through Save the Children's child sponsorship programme, with funds from sponsors in the United States and Italy. In addition, a research grant was received from the International Initiative for Impact Evaluation (3IE) and a donation was received from the Berglund Family Foundation. The total set-up costs for the pilot programme amounted to US\$ 162 646 per annum. During the pilot programme, the medical and pharmaceutical supplies were provided by the initiative. This was the biggest cost driver, amounting to 42% of the total programme costs.

5. OUTPUTS AND OUTCOMES

5.1 IMPACT ON HEALTH CARE DELIVERY

The primary goal of the LTK initiative is to enhance school attendance and reduce absenteeism associated with malaria. Through early detection and treatment of malaria, the initiative aspires to reduce malaria parasitaemia and associated anaemia, enhance educational performance, reduce child morbidity, and lower the costs for households attributed to seeking health services.

The team set out to gather the data required to show effectiveness from the start. To assess the outcomes of the initiative, Save the Children in partnership with LSHTM conducted a cluster-randomized trial (awaiting publication). Twenty-nine schools in the Zomba District were randomized to receive the LTK initiative. Preliminary results show that within the 29 schools, 32 193 consultations were conducted from

November 2013 to March 2015. On average, two-thirds of consultations included utilization of a malaria rapid diagnostic test. Malaria testing increased significantly during the rainy season. Of tests performed, 75% of children (n=16 322) were positive for malaria and received immediate treatment.

In addition, a preliminary cost-effectiveness analysis has been performed, comparing the initiative costs to health facility costs. It was shown to be a cost effective intervention, even with changing assumptions (Sande, 2015). The cost effectiveness of the LTK initiative is, however, highly sensitive to the number of children treated. By increasing the number of children served as well as being conscious of the malaria prevalence rates within a geographic area, the cost of the initiative can be reduced.

Since the learners come here in good number, that problem of malaria is going down. Absenteeism has really gone down. When a learner is sick, [they say], 'I will still stay at school. I can't stay home, I will go to school because medicines are there.' That child forces herself to come in so that they can be okay. (Teacher, Intervention Primary School, Zomba District)

We have seen and we have been convinced that this works and it's good. It's helping in so many ways ... Now our challenge is to make sure how we rule out this and how we sustain this. (National Education Officer, Lilongwe)

5.2 COMMUNITY PERCEPTIONS

Access to and availability of health care services is a major challenge for many rural communities living below the poverty line in Malawi. Parents in the Chikowi Traditional Authority have two options in accessing health services. The first and closest is the mission health centre, but this costs 1 500 to 2 000 Kwacha (US\$ 2.50 to US\$ 3.50) per visit. The monthly income for families living in this area varies between 4 000 and 10 000 Kwacha (US\$ 6.80 to US\$ 17). Government health facilities are free of charge, but are usually 15 to 20km away. A major challenge for these families is that even if they reach the health facility, waiting times are long and often drugs are not available.

If learners are treated within the school, there is a smile on the face of the parents, because it reduces the burden of travelling long distances to go to health services. They can concentrate on their day-to-day activities. Productivity at the household improves because they are not spending time admitting the child to hospital for admissions, etc. There are a lot of economic benefits from this simple intervention. (National Education Officer, Lilongwe)

Local community engagement and involvement in this initiative is substantial. The initial sensitization process aided in eliminating fears or misperceptions in regards to the diagnostic test involving blood. Within traditional communities, dealing and working with blood, as well as providing medication, is a sensitive issue with many associated beliefs. The community contributes to active case finding of children presenting with malaria symptoms. In the case of a child not presenting him/herself to the teacher, and if a parent notices this sick child in the community, they are advised to return the child to school immediately to get tested. The schools reassure them that their children will receive the necessary service and that the treatment required will be available.

Since we welcomed the program in our community, we have not noticed any problems with it. We know that whenever a child returns home sick, and we ask him if he has received treatment, he always says he has already been given medication. (Parent, Zomba District)

6. SUSTAINABILITY

The enthusiasm for the LTK initiative has been evident throughout the implementation process. The observed outcomes, even ahead of the formal research findings, have already sparked conversations among the implementing partners about how this programme can be sustained. Within the current set-up, several challenging areas must be thought through to move towards sustainability.

Teachers' time burden

Teachers describe the positive effects of rapid malaria treatment on learner concentration and

school attendance. The LTK initiative has empowered teachers to be active participants in addressing the malaria burden in their community. Engaging teachers, however, comes with a trade-off. In Malawi, the learner to teacher ratio in averages 69:1 (World Bank, 2015). Daily, teachers are challenged in delivering their lessons due to the class size, poor infrastructure, lack of running water and electricity, and shortages of educational supplies. The time required to perform an MRDT is approximately 20 minutes per test. Although teachers aim to work with utmost efficiency, the load becomes significant in the rainy season, when as

many as 30 to 50 learners per day may require testing. Attempts have been made to minimize the loss in classroom time by also training the headmaster of each school such that he/she can support with the testing and treatment process. To overcome this challenge, more teachers per school will need to be trained.

Teacher incentives

The training and skills development, as well as the desire to help their students, has served as a strong motivator for teachers to participate. The implementation team does not consider monetary incentives to be a financially sustainable mechanism for the LTK initiative. Teachers and implementers have alluded to transport incentives instead, as the responsibility of collecting the LTK supplies and medicines falls on the teacher. Depending on the distance to the nearest government health facility,

teachers have to walk to and wait at the facilities in order to collect the supplies. This is an additional time burden on the teachers. Teachers have expressed that transport assistance would help reduce this load. A common request was to be provided with a bicycle.

Initiative sustainability

New funding sources are required to support the initiative on an ongoing basis. Drugs and MRDTs are a major cost to the programme. Opportunities exist for the programme to be supported through government resources where possible. The MOH supports the notion that they could supply drugs, and the existing medicine distribution system could be utilized. In addition, ongoing supervision of teachers can be supported by the Assistant Environmental Health Officer, placed within primary health facilities.

7. SCALABILITY

Expansion

Initially 29 schools were enrolled as part of the randomized group in the research. Following the data collection phase, the initiative was extended to 58 schools in the Chikowi Traditional Authority. The next goal for expansion is to expand to other traditional authority areas within the Zomba district, and continue learning from the experience. There is a deep awareness from the team that subtle contextual and cultural differences may influence the uptake of the initiative. To support expansion, the training programme would need to be modified into a train-the-trainer model. It would be important to ensure that the full treatment kit is available. It is still under debate whether incentive structures must be adopted to ensure that teachers remain motivated.

Integration

A clear pathway has been formulated for the initiative to be adopted as part of the National Malaria Control Policy and the School Health and Nutrition Policy. Adoption into existing policy

frameworks is a clear requirement for national scale-up. The motivated involvement by the Ministry of Health and Education from the beginning of this initiative is serving as an enabler of integration.

Minimum enablers for replication

The LTK initiative is an easily replicable solution for other countries with a high burden of malaria. Some considerations should be noted in assessing the feasibility for transfer to other geographies:

- Community willingness to accept the intervention
- Regulation to permit teacher task-shifting or the willingness to change existing hindering regulations
- High malaria endemicity will reduce the cost of the initiative at scale
- MRDTs and antimalarial drugs should ideally be available as part of government resources
- Ongoing supervision of teachers is key, but this initiative could be integrated under existing community health programmes.

8. KEY LESSONS

8.1 IMPLEMENTATION LESSONS

The most important lesson from the LTK initiative implementation is the process of community ownership. At all stages of implementation, community members were consulted, engaged and provided with opportunities to contribute. This has been valuable in ensuring that the realised outcomes were not discrepant from those intended.

One such example is that whenever parents identify an ill child within the community, the child would immediately be sent to the school for testing and treatment. As children often feel better after a single treatment dose, and within a sharing community culture, a full course of treatment was often not completed but shared with other family members. Parents have been key in sharing information in their community and being the guardians against such malpractices. *“We don't need to take the communities for granted. They are the owners of this intervention; they are the beneficiaries of this intervention and they need to play their own role. They need to participate in the making of whatever intervention we are trying to do.”* (Austin Mtali, Save the Children)

8.2 PERSONAL LESSONS

Undertaking new initiatives and innovation does not come without risk. Mitigating risk can be achieved through structural mechanisms, but one key ingredient can't be removed: trust. This has been the core element of Witek-McManus and Mtali's approach to leading the implementation, and underpins the collaboration between the University of Malawi, the Ministry of Health, Ministry of Education and Save the Children. Whether at community level, district level or national level, they have been able to cultivate trust among all the various partners engaged in this initiative. The enthusiasm, engagement and ownership has all been built on the foundation of trust, hence they can collaboratively achieve that which has never been done before.

My dream is to see various players, stakeholder and communities both professional, laypeople and other disciplines that may not be necessarily be professional health workers, participating. There is a lot that the community can do in our health care ... So when we trust each other, when we work together, we can build a health system that we can deliver to the people. (Austin Mtali, Save the Children)

CASE INSIGHTS

1. The education system can contribute to addressing the burden of malaria in school-age children. Access to essential diagnostics and drugs is enhanced by task-shifting the testing and treating functions to school teachers, and equipping school facilities to be conducive to these functions.
2. Mobilizing and actively engaging different groups – including community members, traditional authorities, health authorities, education authorities, academic institutions and nongovernmental organizations – enhances the durability of an intervention.
3. Discretionary, unallocated finances provide the opportunity for organizations to pursue new innovations. The development and implementation of community-based innovations is possible through a relatively small financial investment, coupled by in-kind contributions from other stakeholders.
4. Research is an important mechanism to gain legal and juristic permission to try unconventional innovations. As many of these innovations are developed in response to current systems and structures failing to provide an adequate solution, they pose a risk through challenging the prevailing system. However, through rigorous research, risk liability for governments adopting these innovations can be curtailed.

REFERENCE LIST

- Countdown to 2015. (2015). *Countdown Country Case Study: Malawi*. Geneva.
- Government of Malawi. (2010). *Health management information systems (HMIS) annual bulletin, July 2009-June 2010*. Lilongwe.
- Makaula, P., Bloch, P., Banda, H. T., Mbera, G. B., Mangani, C., de Sousa, A., ... Muula, A. S. (2012). Primary Health Care in rural Malawi - a qualitative assessment exploring the relevance of the community-directed interventions approach. *BMC Health Services Research*, 12(1), 328. <http://doi.org/10.1186/1472-6963-12-328>
- Mathanga, D. P., Halliday, K. E., Jawati, M., Verney, A., Bauleni, A., Sande, J., ... Brooker, S. J. (2015). The High Burden of Malaria in Primary School Children in Southern Malawi. *The American Journal of Tropical Medicine and Hygiene*, 93(4), 779-789. <http://doi.org/10.4269/ajtmh.14-0618>
- Nankabirwa, J., Brooker, S. J., Clarke, S. E., Fernando, D., Gitonga, C. W., Schellenberg, D. and Greenwood, B. (2014). Malaria in school-age children in Africa: an increasingly important challenge. *Tropical Medicine and International Health*, 19(11), 1294-1309. doi:10.1111/tmi.12374
- Partnership for Child Development, London School of Hygiene and Tropical Medicine, Kenya Medical Research Institute-Wellcome Trust Research Programme, & World Bank. (2009). *Malaria Control in Schools: A toolkit on effective education sector responses to malaria in Africa*. Geneva. Retrieved from http://www.rollbackmalaria.org/files/files/partnership/wg/wg_itn/docs/ws3/malariaControlInSchools.pdf
- Sande, L. A. (2015). *A Cost-Effectiveness Analysis of a School-Based Malaria Intervention in Zomba District*. University of Malawi.
- Walldorf, J. A., Cohee, L. M., Coalson, J. E., Bauleni, A., Nkanaunena, K., Kapito-Tembo, A., ... Laufer, M. K. (2015). School-Age Children Are a Reservoir of Malaria Infection in Malawi. *PLoS One*, 10(7), e0134061. <http://doi.org/10.1371/journal.pone.0134061>
- World Bank. (2015). World Development Indicators. Retrieved 31 August 2015, from <http://data.worldbank.org>

www.socialinnovationinhealth.org