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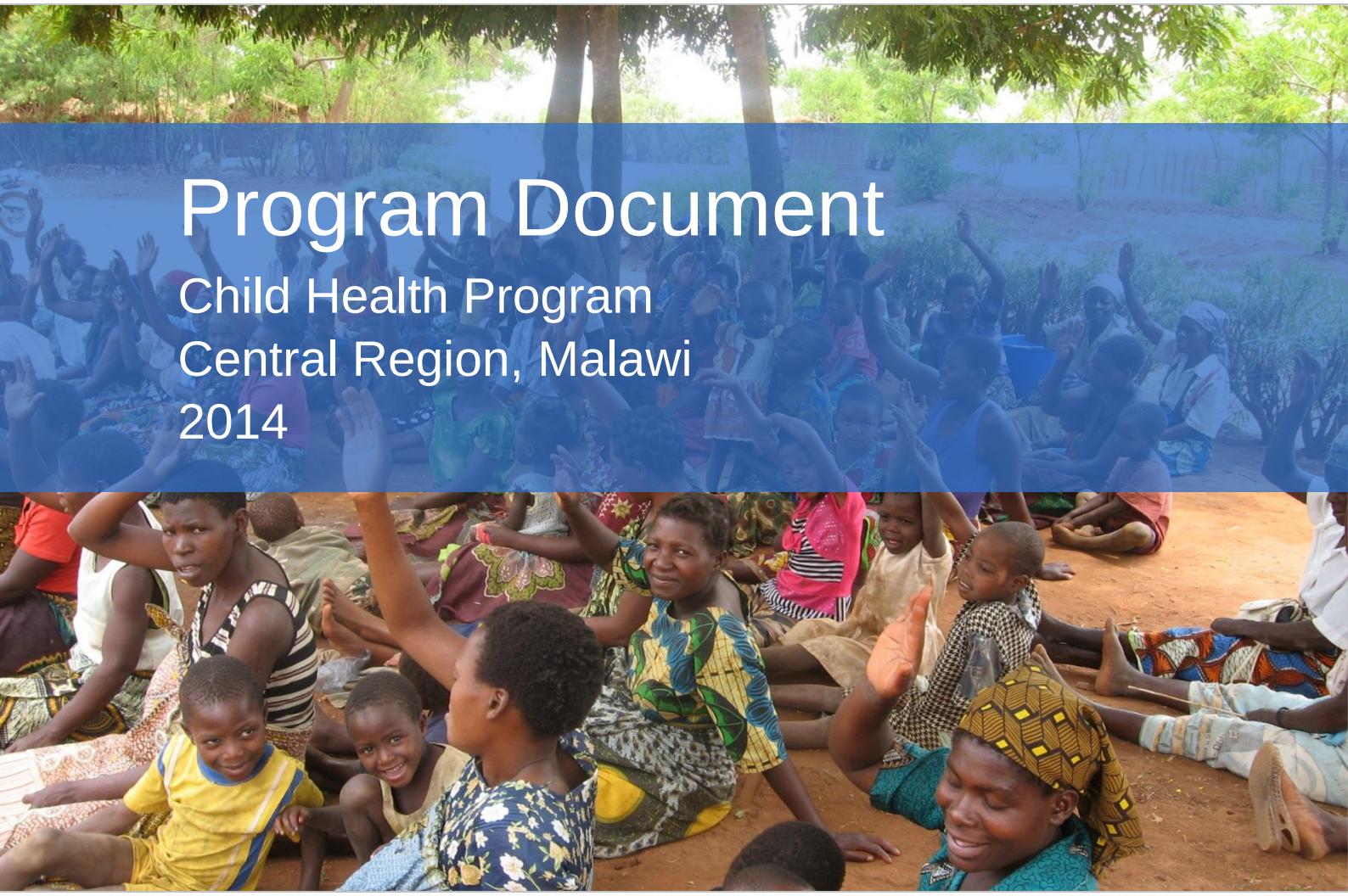

Program Document

Child Health Program
Central Region, Malawi
2014

Reducing morbidity and mortality among children under five years old in the Katchale Health Centre catchment

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Acronyms

ADC	Area Development Committee
AEHO	Area Environmental Health Officer
AIDS	Acquired Immunodeficiency Syndrome
ARI	Acute Respiratory Infection
CO	Clinical Officer
DEC	District Executive Committee
DEHO	District Environmental Health Officer
DHO	District Health Office or District Health Officer
DNO	District Nursing Officer
GPS	Global Positioning System
GVH	Group Village Headmen
HIV	Human Immunodeficiency Virus
HSA	Health Surveillance Assistant
IMCI	Integrated Management of Childhood Illnesses
LA	Lumefantrine and artemether (malaria medication)
MA	Medical Assistant
MDHS	Malawi Demographic Health Survey
M&E	Monitoring and Evaluation
MoH	Ministry of Health
NGO	Non-Governmental Organization
ORS	Oral Rehydration Salts
PPP	Purchasing Power Parity
TA	Traditional Authorities
VDC	Village Development Committee
VHC	Village Health Committee

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Contents

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Program Overview

Title

Reducing morbidity and mortality among children under five years old in the Katchale Health Centre catchment.

Target Area & Beneficiaries

The project will be implemented in all 168 villages within the catchment area of Katchale Health Centre, which is located within Mitundu Health Area in Lilongwe district. The total population of this catchment is 18763, including 3,328 children under five years.

The catchment area includes villages from 22 Group Village Headmen (GVH) and three Traditional Authorities (Chadza, Kalumbu and Chiseka). There are eight stations for Health Surveillance Assistants (HSAs) within Katchale Health Centre catchment.

Duration

The project will run for a minimum of three years, from 2014 to 2016. It may be extended if necessary depending on the results from the first three years.

Goal

The goal of the project is to reduce the number of children under five years old, including neonates, who get and/or die from preventable diseases.

Objectives

To achieve the goal the project will focus on three main objectives:

1. To increase the number of children receiving early diagnosis and/or treatment for common diseases (e.g. LA, ORS, etc).
2. To increase the number of parents implementing prevention behaviours (e.g. ITNs, latrines, hand washing, etc).
3. To reduce the number of complications during pregnancy and birth (e.g. prematurity, infection etc) through increasing antenatal care, safe delivery and family planning.

Partners

Inter Aide will work directly with the following stakeholders in order to implement coordinated activities that will address the root causes of child morbidity and mortality:

- Katchale Health Centre
- Mitundu Health Area
- Lilongwe District Health Office
- Chadza, Kalumbu and Chiseka Traditional Authorities, including the Group Village Headmen and Village Headmen under them
- Chadza, Kalumbu and Chiseka Area Development Committees, including the Village Development Committees under them

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All these stakeholders have been involved in the development of this proposal by participating in a problem tree analysis process.

Approach

The project will be divided into community level activities and system level activities. Community activities will be implemented within each village and will directly involve men, women, children and chiefs. The main aim of these activities will be to improve health related behaviours or parents. Activities will include:

- The HSA and Inter Aide facilitators will work with the Group Village Headmen to identify and train Village Health Committees that will work with to improve the health of their areas.
- The Traditional Authorities and Area Development Committees will create and enforce public health by-laws (e.g. requiring all households to have a latrine, requiring all deliveries to be at the Health Centre, etc).
- House-by-house follow up will be run every six months to see which villages are compliant.
- The HSAs, Inter Aide Facilitators and Village Health Committees will use the follow up results to create a plan to improve the health of villages in their area. This will be done through community triggering sessions that motivate people to change their behaviour.

System activities will be implemented with the government health staff and will focus on improving the services available at Katchale Health Centre for children under 5 years and pregnant women. This will include activities related to the improvement of:

- Staffing and scheduling
- Supplies and equipment
- Transport support
- Village Clinics
- Supervision and feedback
- Encouraging enforcement of regulations

Monitoring & Evaluation

Monitoring of community level activities will be done using regular house-by-house follow up to track the implementation of the by-laws. This will include measuring increases in latrine coverage, hand washing, bed nets, water treatment, family planning, etc. It will also collect information on morbidity and mortality of children under 5 years.

System level improvements will be monitored using qualitative observations, Health Centre records, and patient satisfaction surveys. The Program Manager will keep an ongoing log of all discussions, activities and improvements with government partners.

The evaluation of the project will be done using a baseline and endline survey conducted by independent enumerators. These surveys will be done in both intervention and control villages allowing the results to be compared.

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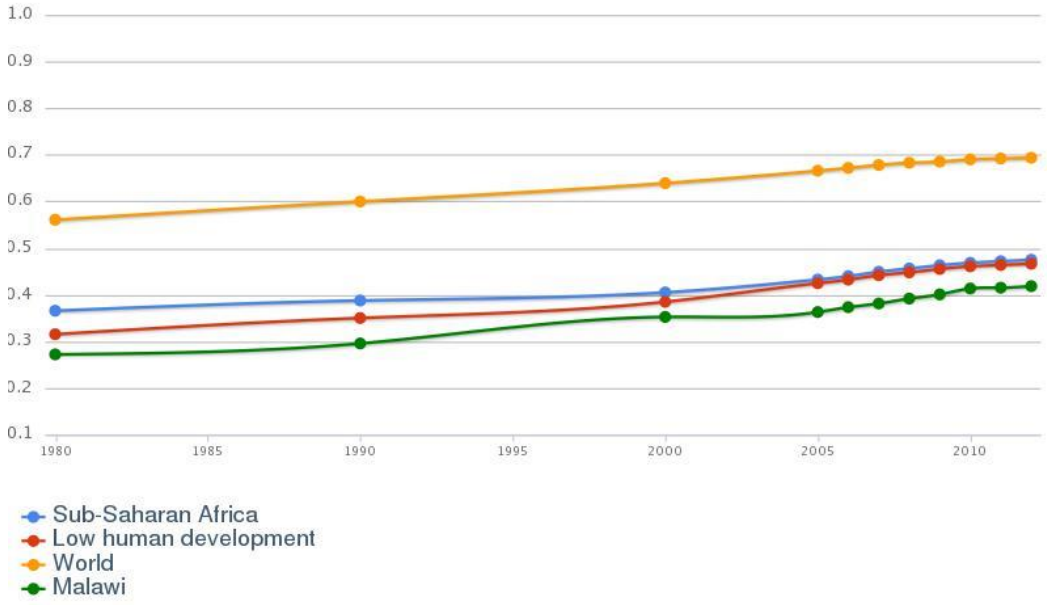
1 Background

1.1 Context in Malawi

1.1.1 Human Development

Malawi is among the group of countries with the lowest human development. Its Human Development Index for 2012 was 0.418 compared to an average for the world of 0.694, and average of sub-Saharan Africa of 0.475[1]. This places Malawi at a ranking if 170 out of 187 countries. Although Malawi's Human Development Index is increasing, progress is slow (see Figure 1). Between 1980 and 2012, Malawi's Human Development Index value increased from 0.272 to 0.418, an increase of 54% or average increase of about 1.4% per year.[2]

Figure 1 Human Development Index 1980 to 2012



Source: UNDP http://hdrstats.undp.org/en/countries/profiles/MWI.html

According to the 2012 Human Development Index indicators for Malawi, life expectancy at birth was only 55 years and 74% of the population were living below the $1.25 PPP per day poverty line.

1.1.2 Millennium Development Goals

To improve its level of development Malawi is working towards achieving the Millennium Development Goals by 2015. Within this context the health of children under five years old (Goal 4) is a high priority. Maternal and neonatal health (Goal 5) is also a high priority.

The following table shows Malawi's results on achieving these two goals. Under-five and infant mortality have been steadily declining, while immunization rates for children were already high at baseline and have only increased marginally. Together these changes suggest that Malawi is likely to meet Goal 4 by 2015.

By comparison, Malawi is unlikely to meet the targets for improved maternal health. Although the maternal mortality ratio has declined significantly from the baseline, it is still far higher than the target. Although improvements have been made in the area of safe delivery there are still many births that are not attended by skilled health personnel.

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Goal	Indicator	Baseline	Achieved in 2010	2015 Target	Feasibility of achieving goal by 2015
Goal 4: Reduce child mortality	Under-five mortality rate (per 1000)	234 (1990)	122	78	Likely to be met
	Infant mortality rate (per 1000)	134 (1992)	69	45	
	Proportion of 1 year children immunized against measles	83% (2000)	84%	100%	
Goal 5: Improve maternal health	Maternal mortality ratio (per 100,000)	1120 (2000)	807	155	Unlikely to be met
	Proportion of births attended to by skilled health personnel	56% (2000)	75%	100%	

Source: Malawi Millennium Development Goals 2010 Report[3]

Measurements of child mortality in Malawi do vary between agencies and surveys. The previous table uses figures from the national progress report on achieving the Millennium Development Goals. According to UNICEF statistics[4] under five mortality rate has dropped from 227 per 1000 in 1990 to 83 per 1000 in 2011, while the infant mortality rate has dropped from 134 per 1000 in 1990 to 53 per 1000 in 2011. UNICEF put the neonatal mortality rate at 27 per 1000 live births in 2011.

1.1.3 Causes of child morbidity and mortality

Infectious diseases and conditions related to birth and newborns are the primary cause of child mortality in Malawi. The following table lists the top causes of death for children under five years old in 2010.

Cause of death	% of deaths of children under 5 years in 2010
Acute Respiratory Infections (ARI)	14%
HIV/AIDS	13%
Malaria	13%
Prematurity	13%
Birth asphyxia and birth trauma	9%
Diarrhoeal diseases	7%
Sepsis and other infectious conditions of the newborn	5%
Congenital anomalies	4%
Injuries	4%
Measles	2%

Source: World Health Organisation Global Health Observatory[5]*. Please note that these statistics are based on the most recent estimates by the WHO using multiple data sources and may not exactly match the official national statistics.*

Although the Millennium Development Goals focus on child mortality indicators, it is important to note that child morbidity is also a key concern. Children who are regularly ill may end up having poorer development; as a result they may have lower school achievement, and ultimately fewer employment opportunities as adults. Time, money and resources spent caring for sick children can also contribute to household poverty.

The following table shows the proportion of children who had fever, diarrhoea or symptoms of Acute Respiratory Infection (ARI) during the 2010 Malawi Demographic Health Survey. The proportion taken for treatment is also shown.

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Symptoms in children under 5 years	% of children who had the symptom in the last two weeks	% for whom advice or treatment was sought from a health facility or provider
Fever	34.5%	64.6%
Diarrhoea	17.5%	62.1%
Acute Respiratory Infection (cough accompanied by short, rapid breathing which was chest-related)	6.8%	70.3%

Source: 2010 Malawi Demographic Health Survey[6] Please note that there is seasonal variation in child morbidity and so the results of this survey conducted in June to November 2010 may not be the same as a similar survey carried out at another time of year.

1.1.4 Health Financing & Workforce

Delivering health services to pregnant women and children under five years old is challenging within the Malawian context. As the table below shows (with a comparison to France), the population is very young and the majority live in rural areas which are difficult to access.

Although the percentage of government spending on health is higher than France, the total amount spent per capita is far lower. More than half of all spending on health comes from external sources, such as international donors.

Indicator	Malawi	France
Population total	15,906,000	63,937,000
Population median age (years)	17 years	40 years
Population proportion under 15 years (%)	45%	18%
Population living in urban areas (%)	16%	86%
Gross national income per capita (PPP int. $)	$870	$35,910
Per capita total expenditure on health (PPP int. $)	$77	$4086
Per capita government expenditure on health at average exchange rate (PPP int. $)	$57	$3152
General government expenditure on health as a percentage of total government expenditure (%)	19%	16%
External resources for health (including donor funding) as a percentage of total expenditures on health (%)	52%	Not applicable
Physicians density (per 1000 population)	0.019	3.381
Nursing and midwifery personnel density (per 1000 population)	0.343	9.3

Source: World Health Organisation Global Health Observatory[7]. Please note that these statistics are based on the most recent estimates by the WHO using multiple data sources and may not exactly match the official national statistics.

Staffing for the health system is also a challenge. The number of physicians and nurses per 1000 population is extremely low. As a result the Malawian health system relies on a large number of "bridging" qualifications, such a Medical Assistants and Health Surveillance Assistants. The training times for these staff are shorter than typical nursing or medical doctor qualifications, allowing larger numbers of these staff to be trained. However, they do not have the same skill level as fully qualified medical doctors and nurses (see the section on Government structures for more information).

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2 Government structures

2.1 Health system

The project strategy will work closely with the government health system. It is therefore essential to understand how the Malawian health system works.

2.1.1 Administrative management

The following diagram shows the levels of administrative management within the health system.

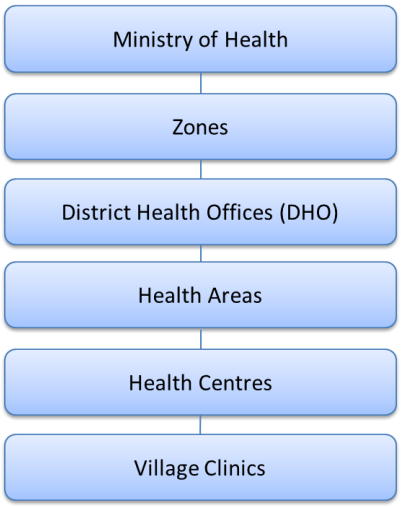

Figure 2 Health system administrative structure

The Ministry of Health is at the top of the system. It is responsible for setting the national health strategy[8] and policies that govern the operation of all levels below it. Within the Ministry of Health are a range of specialised departments and units that deal with specific programs, such as the Community Health Sciences Unit (CHSU), Reproductive Health Unit (RHU), etc.

Under the Ministry of Health are 6 zones, and each zone is responsible for managing 5-6 District Health Offices. The Lilongwe District Health Office is responsible for managing 6 Health Areas, one of which is Mitundu Health Area. Mitundu Health Area is responsible for managing 10 Health Centres, one of which is Katchale Health Centre. Katchale Health Centre is responsible for managing 3 Village Clinics.

2.1.2 Treatment and referral system

The following diagram shows the treatment facilities within the system and the direction of referrals from the lowest level treatment facility up to higher facilities.

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Figure 3 Treatment and referral system

The lowest level treatment facility is a Village Clinic. Village Clinics are run by Health Surveillance Assistants (HSAs) in locations outside the Health Centre. The locations are selected based on being hard to reach areas that are usually more than 5km from the Health Centre, or hard to reach for other reasons (poor roads, collapsed bridges, etc).

Village Clinics only provide treatment for children under 5 years for specific conditions (fever, cough, diarrhoea red eye, etc). In addition to Village Clinics all HSAs are supposed to provide education and outreach to villages in their assigned catchment (referred to as a station). Katchale has eight stations. Each village is supposed to have a Village Health Committee to work with the HSA on implementing health initiatives.

Cases that cannot be managed at the Village Clinics are referred to the Health Centre. The relevant Health Centre for this project is Katchale Health Centre. Katchale Health Centre is currently staffed by one Medical Assistant, one nurse and eight HSAs. The Medical Assistant is officially in charge of the whole facility, although the nurse has a higher level of training. According to government policy all Health Centres should be governed by a Health Centre Management Committee that includes representatives from the community and staff.

Cases that cannot be managed at Katchale Health Centre are referred to Mitundu Community Hospital in Mitundu. Cases that cannot be managed at the Community Hospital are referred again to Bwaila Hospital, which is the District Hospital for Lilongwe District. This is the first treatment facility in the referral system that is staffed with medical doctors (all lower levels do not have a medical doctor).

Cases that cannot be managed at Bwaila Hospital are referred to Kamuzu Central Hospital located in Lilongwe. Kamuzu Central Hospital has a range of Malawian and expatriate specialists.

2.2 Local government

Malawi has recently gone through a period of decentralisation in which local government has been given more responsibility and authority to make decisions regarding services in their area.[9] At the same time efforts have been made to preserve the system of chiefs who traditionally rule Malawian society, particularly at the village level. This program will work closely with chiefs and other local government structures shown in the following diagram.

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Figure 4 Local government structure

The Ministry of Local Government and Community Development sits at the top of the structure representing central government. It is responsible for giving oversight and policy guidance to local government.

Each district is governed by a District Commissioner who reports directly to the ministry. The District Commissioner is the chair of the District Executive Committee which is responsible for the operational planning and implementation of projects within the district. The Lilongwe DEC meets on a monthly basis and includes representation from the TAs, ADCs, Lilongwe DHO (as well as other government departments) and civil society.

Reporting to the District Commissioner are the Traditional Authorities (TAs). TAs are part of the traditional chief system in Malawi. Their position is inherited rather than elected. They have their own court and are able to pass by-laws and judgements on non-criminal cases, such as land disputes. They can also dispense penalties for non-compliance.

Each TA is the chair of their own Area Development Committee that is comprised of representatives from the Village Development Committees. The ADCs usually meet on a monthly basis to make decisions on development projects in their area. This typically includes things such as roads, schools, agricultural projects, etc. They are able to request budget from a Local Development Fund managed by the district for implementing such projects.

Each TA leads multiple Group Village Headmen (GVHs). Each GVH is normally responsible for a group of villages, although in some cases it may be a single large village. The GVH is able to pass by-laws for their villages, deliver penalties for non-compliance, and give rulings on non-criminal matters. Each GVH has a Village Development Committee (VDC) that meets regularly to discuss development projects in the GVH's villages.

Village Headmen, commonly referred to as "chiefs", are located at the village level and report to the GVH. Each village usually has one official chief who is registered with the TA, but there may also be several "sub-chiefs" depending on the political situation in the village. Families who feel they are not receiving their fair share of benefits from the chief may choose to form a separate group with their own chief in order to benefit. Village Headmen are often the chair of many different village committees. These committees may formed by the community themselves, or in some cases are created by NGOs.

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3 Geographic target area

3.1 Selection of the target area

Inter Aide uses the following criteria to select countries of operation as well as target areas within those countries:

- Significant needs, in this case child health needs.
- High population density, allowing the project to reach a large number of people with fewer resources.
- Few other NGOs operating.
- Stable government and security situation, allowing for the development and implementation of long term projects.

3.2 Location in Malawi

This project is located in Malawi, which is in southern Africa and has borders with Mozambique, Zambia and Tanzania.

Figure 5 Project location in Malawi

Malawi is divided into three regions - the Northern Region, Central Region and Southern Region. Each region is then divided into districts. This project is located in the Central Region in Lilongwe District.

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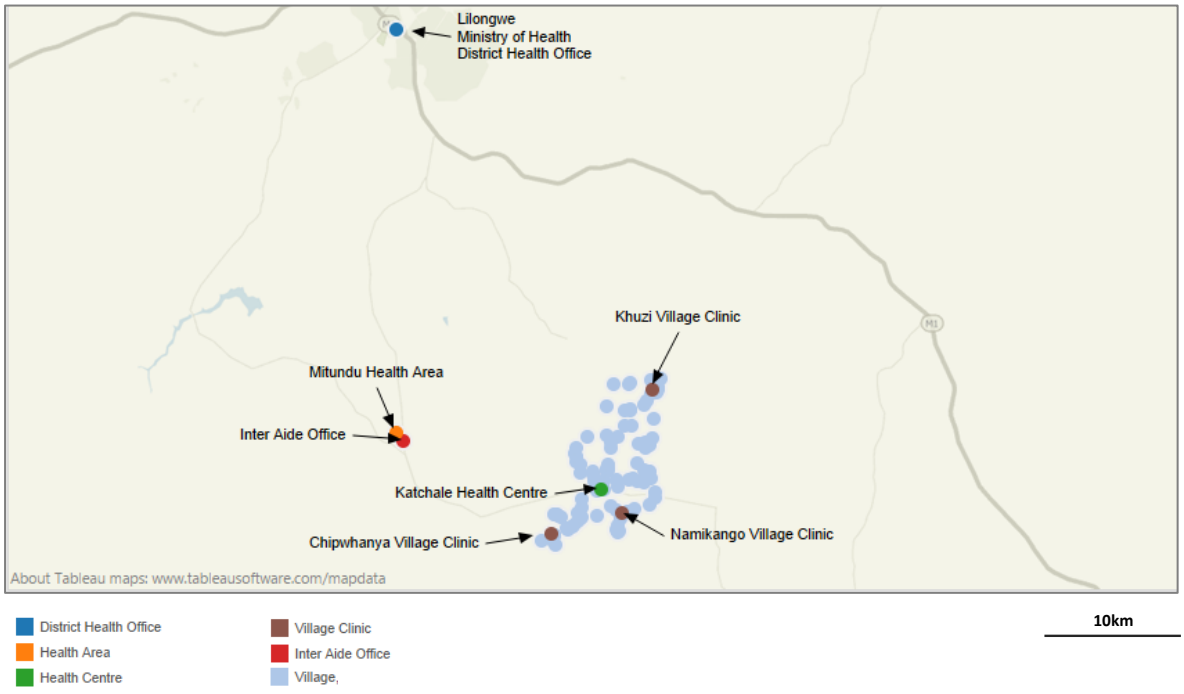
3.3 Health System Structures

Lilongwe District Health Office (DHO) is responsible for the delivery of government health services within the district. The DHO is located in Lilongwe city (see the following map) on the same campus as Bwaila District Hospital (Kamuzu Central Hospital is also in Lilongwe).

Health services under the Lilongwe DHO are then divided into 6 Health Areas. Mitundu Health Area is located in Mitundu town on the same campus as the Mitundu Community Hospital. This is approximately 35km from the DHO office on a tarmac road, and very close to the Inter Aide project office.

Mitundu Health Area is responsible for ten Health Centres, one of which is Katchale Health Centre. Katchale Health Centre is located approximately 18km from Mitundu on a dirt road. The Health Centre is responsible for running three Village Clinics located in the villages surrounding it. All Village Clinics are accessed via dirt roads. Chipwhanya Village Clinic is approximately 5km from the Health Centre, Namikango Village Clinic is approximately 3km and Khuzi Village Clinic is approximately 8km.

Figure 6 Government facilities map



3.4 Villages by Station

The Health Centre has divided the villages surrounding it into eight stations. Each station is assigned one HSA who is responsible for implementing activities in those villages. For this project Inter Aide will also assign one facilitator to each station. The following map shows the villages in each station.

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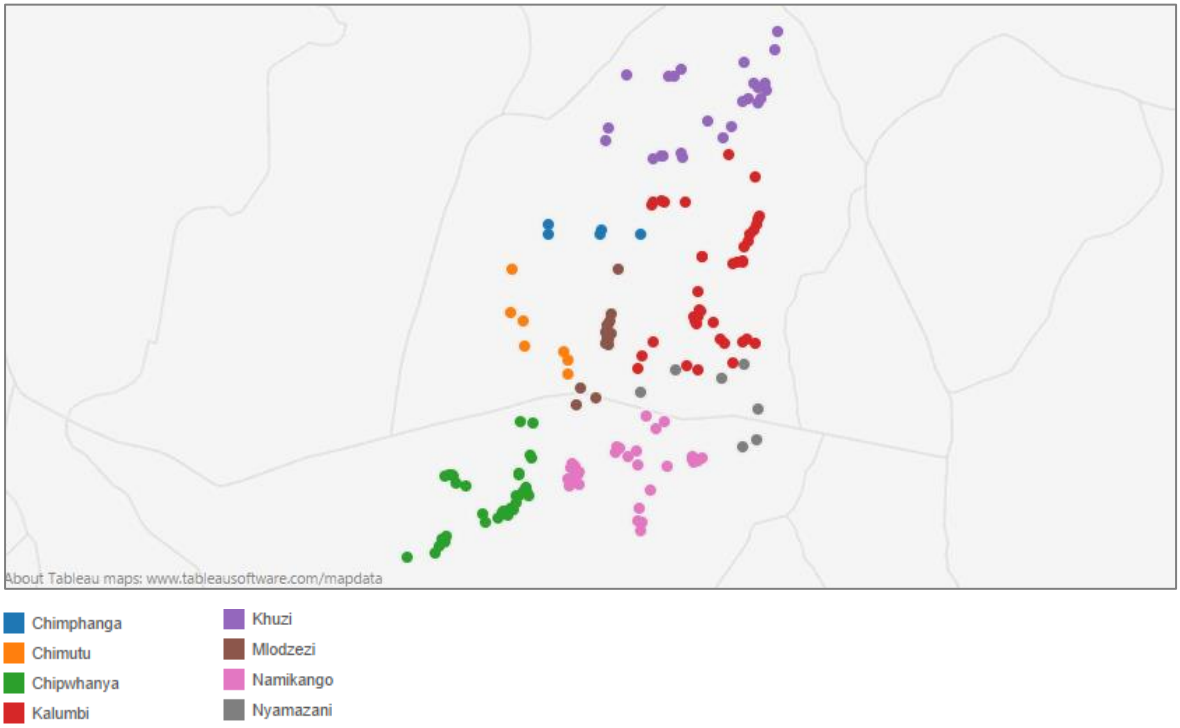
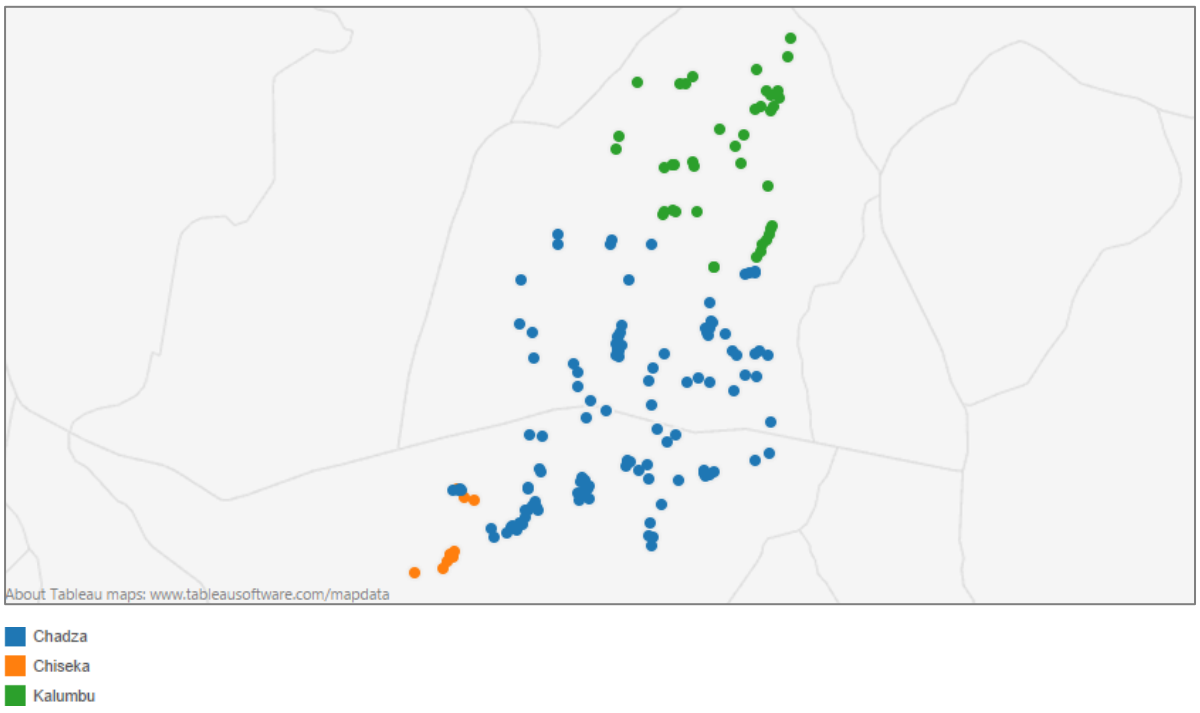
Figure 7 Villages by station



3.5 Villages by Traditional Authority

The following map shows the 2014 target villages by Traditional Authority (TA). The majority of villages fall under TA Chadza, but a substantial number also fall under TA Kalumbu, with a smaller number under TA Chiseka. There is one Village Clinic located in each TA's area.

Figure 8 Villages by Traditional Authority



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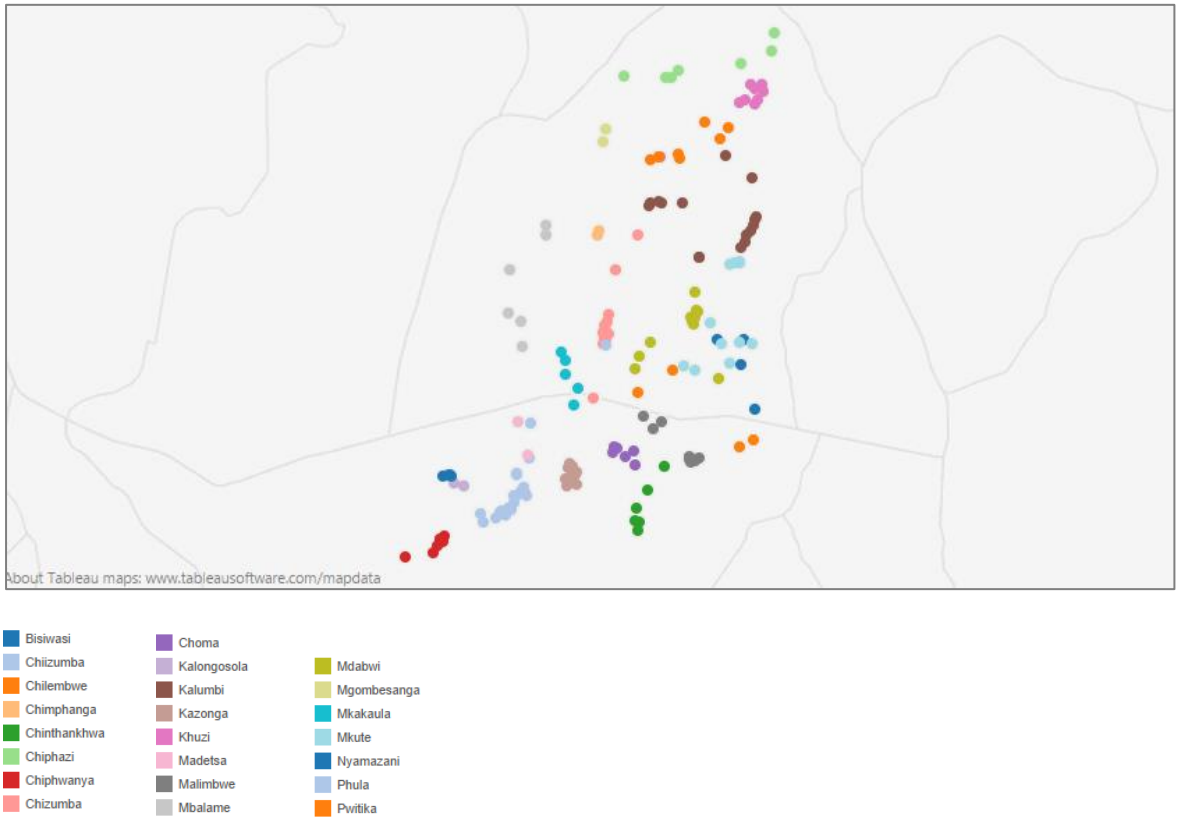
3.6 Villages by Group Village Headman

The following map shows the 2014 target villages by Group Village Headman (GVH). GVHs are usually responsible for a group of villages, but in some cases it can be just one large village.

The Health Centre's eight stations only partially align with the 22 GVH catchment areas. In some cases GVHs are responsible for villages in different stations, and thus have to engage with multiple different HSAs (and in the future multiple Inter Aide facilitators). The main reason for this lack of alignment is that in some places the villages under one GVH are not next to each other geographically.

Figure 9 Villages by Group Village Headman



3.7 Population

Initially Katchale Health Centre estimated the population in the surrounding catchment area to be 19,835, including 3,372 children under five years.

In March 2014 the HSAs and Inter Aide facilitators conducted and house-by-house census of the area to confirm the exact population. The results are shown below.

# TA	3	**# GVH**	22	**# VILLAGES**	168
# HOUSEHOLDS	4,362	**POPULATION**	18,763	**# UNDER 5s**	3,328

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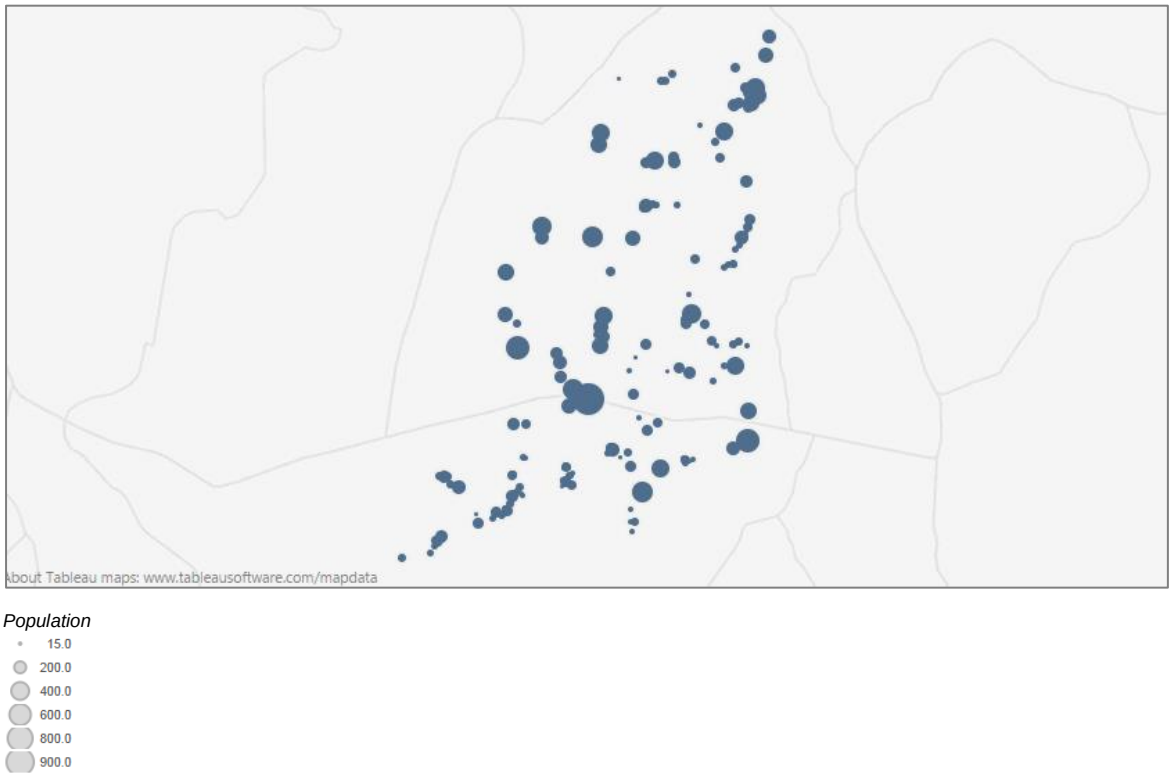
Figure 10 Villages by population



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4 Problem Analysis

4.1 Problem tree (Qualitative)

In order to understand the root causes of child morbidity and mortality in Katchale Health Centre catchment a problem tree analysis was conducted with Health Centre staff, community members, village chiefs, and Inter Aide facilitators. The involved a series of meetings with each stakeholder group where they each developed their own problem tree.

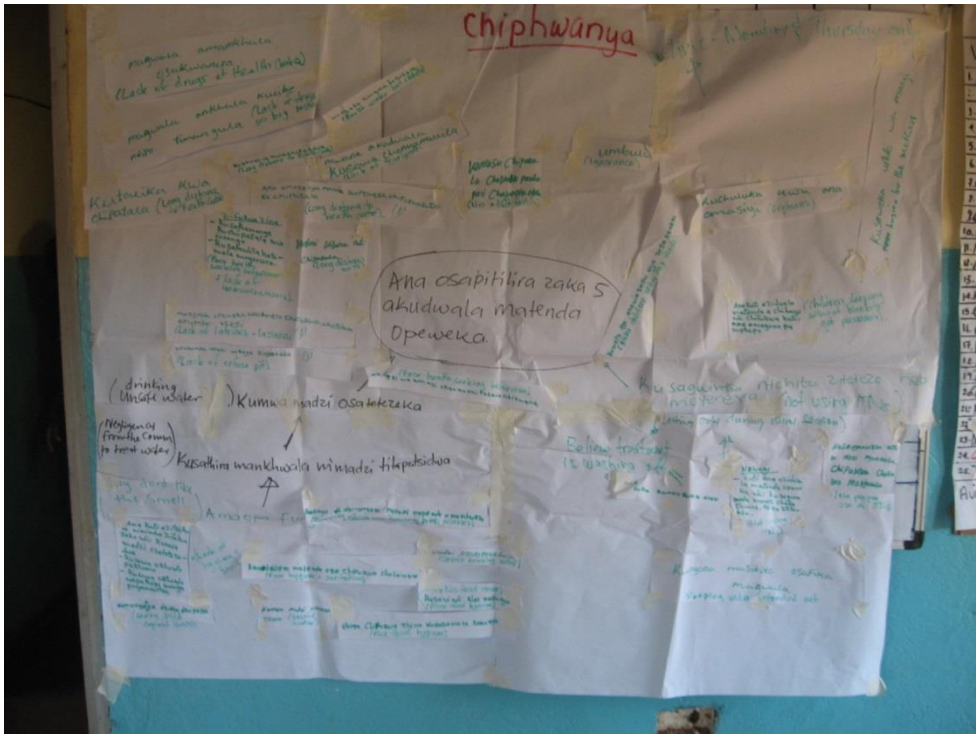

Figure 11 Chipwhanya Station problem tree, 30th September 2013

The separate problem trees were then combined to produce the final problem tree shown on the following page. Review meetings were held with the Traditional Authority, Area Development Committee, District Health Office and Health Area to validate the final problem tree. Finally, the root causes in the problem tree were grouped into logical types shown by the colour of the box. Each type of problem is described in the following sections.

The problem tree process also involved participants identifying possible solutions to each root cause. It is these solutions that were used as the basis for the activities proposed in this document.

4.2 Baseline survey (Quantitative)

In January 2014 a baseline survey was conducted for the pilot program. The purpose of the survey is to validate the problems identified during qualitative stakeholder meetings. It will also allow for the project results to be measured using a baseline and endline survey. The endline survey will be conducted three years later in January 2017.

A quasi-experimental design will be used to measure the results of the pilot project. This means that villages in both the intervention area and a control area need to be surveyed both before and after the program. The intervention area is the catchment of Katchale Health Centre. The control areas are the catchments of Maluwa Health Centre and Chiunjiza Health Centre. These two areas were selected as

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controls because they are as close as possible to Katchale Health Centre in terms of size, remoteness and service level.

Two-stage cluster sampling was used, stratified by HSA station. In the first stage 48 villages were randomly selected from the intervention area, with six villages from each of the eight HSA stations. In the two control areas 24 villages were randomly selected (48 control villages in total) with 6 villages taken from each of four HSA stations.

Within each village 10 households were selected using a random walk quota method. This gave a total of 480 households in the intervention areas and 480 in the control areas (240 per control area), with 960 households in total.

See the **Baseline Survey Report** for the full methodology, results and questionnaire. The results of the baseline survey were used to refine the problem tree that was created through stakeholder meetings. Some problems were confirmed by the quantitative data, while others were not. The following page shows the final problem tree after the baseline survey.

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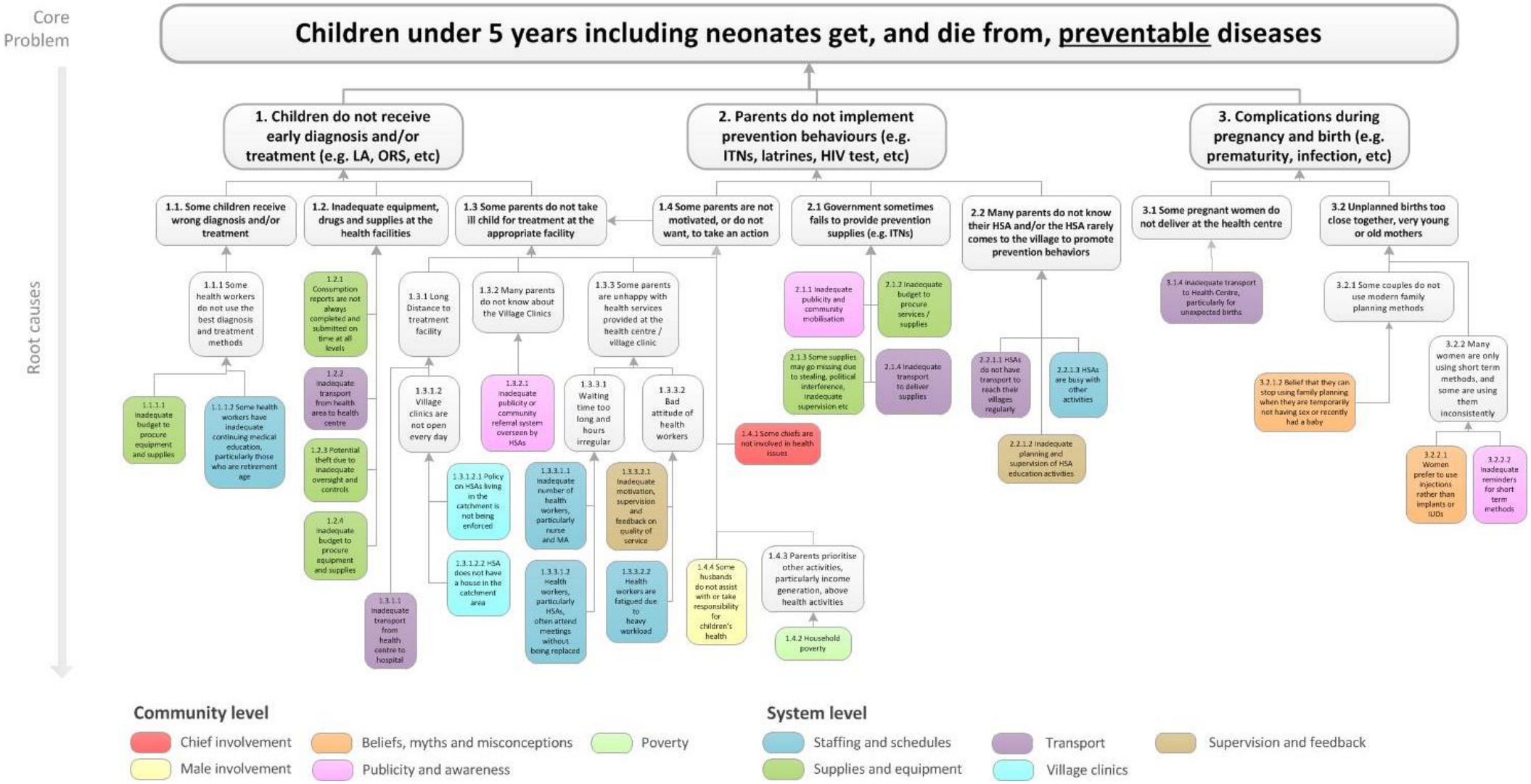

Figure 12 Problem tree

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4.3 Community level problems

Community level problems are mainly related to the behaviour, attitude and awareness of individuals in the community. These problems can be seen within villages, families or among parents of children under five years old.

4.3.1 Chiefs are not fully involved in health issues

One issue identified by the problem tree analysis, and confirmed through the baseline survey, is that village chiefs and Group Village Headmen are rarely involved in health issues in the village (unless it is related to one of their own relatives).

Only 31% of respondents in the survey had heard their chief talk about health issues. The most common topics were latrines (74%), hand washing (31%) and antenatal care and safe delivery (19%). In addition, only 23% of respondents reported that their village had by-laws on some health issues. The most common topics were latrines (71%), antenatal care and safe delivery (38%), and hand washing (22%).

This is in contrast to other areas of daily life where chiefs play a leading role. For example, they often create by-laws in their village to resolve land disputes, or require that all families participate in the development of roads or other public infrastructure. It is also common for all levels of chiefs (village chiefs, Group Village Headmen, and Traditional Authorities) to set penalties for failure to comply. For example, a family who does not adhere to a chiefs ruling may be required to pay a fine in the form of money or livestock to their chief. A Group Village Headman who does not implement the will of the Traditional Authority may lose his position.

The fact that the chiefs do not create rules and regulations for health issues means that many parents may see these behaviours as unimportant. It also means there is no penalty for failing to implement health related behaviours, which is something that may help motivate parents to take action.

4.3.2 Beliefs, myths and misconceptions

Participants in the problem tree analysis reported that there is still a belief in some myths and misconceptions among parents that can lead them to not implement the behaviour (even though they know about the behaviour). For example, there is a common myth that if a woman uses modern family planning methods her husband will not find sex with her as satisfying.

Some religious groups believe that modern medicine contradicts their religious practices, while other people believe that Traditional Birth Attendants (TBAs) provide safer deliveries than Health Centres due to the cultural beliefs.

These problems were **not** verified by the baseline survey. In fact, only 12% of women who did not deliver at the Health Centre said that it was because they prefer traditional methods. Less than 1% of households reported that their religious beliefs prevent them from using modern health care.

Very few women reported that they did not use family planning because they believed myths regarding side effects. However, 23% said they did not use family planning because they were not having sex (due to their husband being temporarily away) and a further 23% said they were not using it because they had a baby recently. These misconceptions may be contributing to the high rate of unplanned pregnancies in Katchale, and need to be addressed through targeted messaging.

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4.3.3 Inadequate male involvement

During the problem tree analysis the female participants were extremely vocal about the lack of support they receive from their husbands. For example, many women complained that their husbands do not accompany them to attend antenatal check-ups at the health centre.

Women also complained that their husbands do not assist with transport when they need to take their child to the village clinic or health centre, and that some men refuse to allow their wives to use modern family planning methods. During the problem tree analysis meetings the men and chiefs were invited to respond to these complaints. In almost all cases they said that the reason men do not assist is probably because the wife is being “rude” or difficult.

The baseline survey showed that there is a lack of male involvement for some families. Of the women surveyed, 35% said that they normally make decisions regarding health care for their children, 12% said it was their husband, and 52% decide jointly. When it comes to caring for sick children, 73% of women report that they care for the children, compared to 3% of husbands, and 24% of couples who do it jointly. 25% of husbands have never accompanied their wife to an antenatal visit, 21% have attended once, 43% several times, and 9% every time.

Very few women in the survey reported that they did not use the Health Centre because their husband would not give permission for them to go. It appears that while the community is aware of cases where a husband has refused to allow his wife to visit the Health Centre, this is not the norm.

4.3.4 Inadequate publicity and awareness

At the household level parents may be unaware of key health information, such as the fact that bed nets can be used to prevent malaria, or that a child with diarrhoea should be taken to the village clinic. However, the participants in the problem tree analysis (particularly the District Health Office) felt that this was no longer a key issue as the government runs regular national campaigns to raise awareness of these key facts, and the same messages are repeated regularly by government health staff.

In the baseline survey awareness of key health messages was very high, with more than 97% of women were aware of key health messages on antenatal care, health seeking behaviour, hand washing, sanitation and bed nets. Most women had heard the messages from a health worker.

Inadequate publicity of government services and campaigns was also raised as a possible root cause. For example, some parents may not be aware about the locations of village clinics, the services provided, and when they should take their children. Parents may not know when national campaigns are running, such as for vitamin A or measles vaccinations. Women in particular may not know where they can get antenatal check-ups or modern family planning methods.

In addition to not knowing what services are available, parents may also not know the opening times, particularly when they are irregular. Many participants in the problem tree analysis meetings complained that they had tried to access services but found them closed.

The baseline survey showed that most households are aware about the Health Centre and Mobile Clinic, including the location and opening times. However, in areas with a Village Clinic, only 57% of households were aware about the existence of the clinic. Only 8% of children with diarrhea and fever in the last 2 weeks were taken to the Village Clinic, and none of the children with ARI were taken there. This suggests a lack of awareness and publicity regarding Village Clinic services.

4.3.5 Poverty

A final root cause identified by participants was household poverty, which can lead parents to prioritise income generating activities over health related activities. For example, parents may feel that

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it is more important to spend time planting maize crops rather than building a latrine or taking their children to the Health Centre.

It has been observed in 2013 villages that community members are far more interested in the Inter Aide Agro program activities compared to the Inter Aide Child Health program activities, possibly because the Agro program has a direct and observable impact on the family income. By comparison the Child Health program only has an indirect effect on income over a long period of time by reducing disease transmission. Poverty can also be a contributing factor to many other root causes, such as lack of transport options to get to the Health Centre.

The Progress Out of Poverty™ index[x] was used to measure poverty in the baseline survey. 43% of households were below the national poverty line and 70% were below the international $1.25 PPP / day poverty line. Poorer households were significantly more likely to have had a child die compared to wealthier households.

4.4 System level problems

Even if parents are motivated to take action, in some cases they are not able to do so because of problems with government health services. These system level problems can be observed at all levels of the government health system, from the village clinics to Katchale Health Centre, Mitundu Health Area and Lilongwe District Health Office.

4.4.1 Inadequate staffing and inefficient scheduling

Six root causes on the problem tree were related to inadequate staffing at Katchale Health Centre combined with inefficient scheduling of those staff. The following table shows the number and type of staff required at a Health Centre based on current Ministry of Health Standards, according to DHO representatives at the problem tree analysis meetings. This is compared to the number and type of staff currently present at Katchale Health Centre.

Role	Required according to government policy	Currently present at Katchale
Medical assistant	2	1
Nurse	2	1
Environmental Health Officer	1	1
Health Surveillance Assistant	10	8

Note: In addition to these staff there are also 6 Patient Attendants at Katchale who perform general duties such as cleaning, filing, etc.

From this table it is clear that Katchale Health Centre is understaffed based on current government standards, which is a key factor in the fatigue and poor bedside manner of staff (one of the major complaints of community members). The most critical areas of understaffing are the nurse and Medical Assistant. There is only one nurse and one Medical Assistant which means they both have to be either working or on-call 24 hours per day, 7 days a week. In addition, both the nurse and Medical Assistant are close to retirement age making continuous 24 hour shifts even more difficult and tiring than for younger staff.

For this program the most critical position is the nurse, as she attends to deliveries. If she is away then women who come to deliver at the Health Centre must be referred to another facility (for which they have no transport) or the delivery may end up being done by another unskilled member of staff. Originally there was a problem that the nurse was not trained in providing long term family planning methods, but this has been fixed by DHO in November and she has now been trained.

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According to the District Nursing Officer who participated in the problem tree analysis, there are two challenges to increasing the number of nurses at the facility to two. The first problem is that it is difficult to find nurses willing to work for long periods in such a remote facility. They prefer to work in the urban Health Centres of Lilongwe district. The other major challenge is a lack of housing. Nurses expect to be provided with a house that at least has solar panels when they move to a remote facility. Katchale Health Centre currently only has one house available for a nurse, rather than two. The same problems apply for the Medical Assistant.

The number of HSAs at Katchale is eight, even though there are nine catchment areas and the recommended number of HSAs is ten. An additional problem is that only three HSAs are trained to run Village Clinics, so if one of them is on leave there are no other HSAs able to cover for them. These problems are likely to be resolved soon, as the Senior HSA at Katchale Health Centre says that another three HSAs will be transferred there soon and Village Clinic training will be run again by DHO in the near future.

The baseline survey showed that only 55% of respondents had personally met the HSA for their village. 24% said that the HSA had not visited their village in the last 12 months, 22% said they had only visited once, and 28% two to three times.

In addition to a shortage of staff, inefficient planning and scheduling is also a contributing factor for many problems. Examples of scheduling problems include:

- Many of the HSAs are doing “field work” some days per week, but the Health Centre could not specify exactly what this was or how many individuals they see each day.
- The Medical Assistant is currently seeing more than 100 patients per day, many of whom are children under 5 years who have not been seen at a Village Clinic and who could potentially be seen by an HSA if one was available or at the Village Clinic was open more regularly.
- The nurse sees more than 100 women during the family planning clinic on Wednesdays. Many of these women require injectable contraceptives (“Depo”) or pills that could be provided by HSAs through mobile clinics.

4.4.2 Inadequate supplies and equipment

Several of the root causes identified by both community members and health workers were related to inadequate equipment at Katchale Health Centre. For example, a lack of beds, mattresses, bed sheets and lighting that meant some pregnant women were reluctant to deliver at the Health Centre. According to the Health Centre staff all these items have been reported to DHO but DHO does not have the budget to purchase new ones.

Another group of root causes related to irregular supplies of drugs and family planning methods. In particular, both women and Health Centre staff said that the supply of injectable contraceptives was only intermittent. This is a serious problem as injectable contraceptives are the most popular method of family planning among women in the area. The DHO coordinator for family planning has said that this intermittent supply is due an underestimate of the quantity needed this year by the central stores. It may or may not be a problem next year depending on the accuracy of their estimates.

In Malawi family planning services are also provided by the NGO Banja la Mtsogolo (BLM) managed by the international NGO Marie Stopes. BLM run a monthly mobile clinic at Katchale Health Centre and have one community mobiliser operating in the area. However, previously Inter Aide facilitators have referred women to the BLM clinic and they too have run out of family planning supplies.

Another problem raised through the problem tree analysis is the possibility of theft and misuse of supplies. According to government policy the Health Centre Management Committee, including community representatives, is supposed to oversee stock control at the Health Centre to prevent theft

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and misuse. However, the Katchale Health Centre Management Committee has only a few active members and does not meet regularly.

4.4.3 Inadequate transport

The transport of supplies from the DHO to the Health Area, then the Health Centre and finally the Village Clinics is a significant problem. The DHO only has around 10 vehicles available to transport supplies from there to all Health Areas in the district. The distance between the DHO and Mitundu Health Area is approximately 40km on a tarmac road.

Mitundu Health Area is responsible for transporting the supplies to the all seven Health Centres in their area. They only have one car which they share with Nathenje Health Area. The car also serves as the only ambulance for both areas and so it is usually busy transferring emergency cases. As a result the transport of essential supplies can be delayed by days, weeks or in some cases months. They have some motorbikes, but some supplies such as gas cylinders are too large to go on a motorbike. The distance from Mitundu Health Area to Katchale Health Centre is approximately 18km on a dirt road.

While the Health Centre has one motorbike, it has not been maintained since it stopped working in 2011. The motorbike was sent to the Health Area at that time for maintenance but the government has not allocated any maintenance budget for it (or any other health centre motorbikes), with the explanation that they do not have the budget available. However, they have continued to allocate 15,000 MKW per month for its fuel, even though the motorbike is not running.

Once the supplies reach Katchale Health Centre those for the Village Clinics must be transported from the Health Centre to the three Village Clinic locations which are 8km, 5km and 3km respectively on dirt roads. Vaccinations and other supplies such as bed nets also need to be transported to these locations for mobile clinics and national campaigns.

The HSAs running village clinics normally use a bicycle to ride to the village clinic location. Each HSA received a bicycle when they completed their training. However, they do not receive any funds for maintaining the bicycles. Most HSAs at Katchale have been working 4-7 years, and so most of the bicycles are in very bad condition. When the bicycles are broken the HSA is not able to transport themselves or the supplies to the Village Clinic and so the services are not provided.

4.4.4 HSAs not living in the village clinic catchment area

According to Ministry of Health policy, as reported by the DHO coordinators, all HSAs are required to live in their catchment areas. This is particularly the case for HSAs running Village Clinics, as the catchment areas for Village Clinics are supposed to be hard to reach locations.

A review of HSA results in the 2013 Village Clinics found that HSAs who live in their catchment see almost twice as many children under five years old as those who reside outside their catchment. This is not surprising as HSAs who live in their catchment are able to open the village clinic every day in the mornings and evenings, and on weekends.

Of the three HSAs running Village Clinics at Katchale, none of them live in their catchment area. They travel from Katchale to their catchment two days per week to run the Village Clinic. This was identified as a major problem by community representatives during the problem tree analysis. As one mother put it “children don’t get sick only two days a week”. As a result mothers have to walk long distances, often for several hours carrying their children, in order to access health services at the Health Centre. Many parents simply do not take their children for treatment or use illegal local clinics. Children who are not seen at Village Clinics and are taken to the Health Centre instead can also overload the Medical Assistant.

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It also appears that not all of the current Village Clinics are even opening two days per week. In September and October 2013 the Inter Aide Health Coordinator visited all three clinics six times on days that they were supposed to be open. Reports from the Village Clinics were also collected in October 2013 to see how many children they saw that month. The results were:

- **Namikango** – Open twice out of six times visited. In October only 21 children had been seen that month.
- **Khuzi** – Open once out of six times visited. In October only 16 children had been seen that month.
- **Chipwanya** – Open all six times visited. In October 46 children had been seen that month.

During the problem analysis the HSAs were invited to respond to the community complaints. They said that the only reason they do not live in their catchment area is that there is no suitable housing available. They consider suitable housing to be a house with at least two rooms that has an iron roof, concrete floor, glass windows and a door. Many of the houses in the catchment have only one room, a thatch roof and earth floor. There are very few houses available for rent. The HSAs are not willing to pay for their own houses to be built as the catchment area is not their home village, and they are unlikely to stay for more than a few years.

It also appears that Lilongwe DHO is not enforcing the rule that HSAs must live in their catchment. According to the district coordinator responsible for Village Clinics only 20 of the 133 HSAs (15%) in Lilongwe District are actually staying in their catchment area. Many HSAs would prefer to live in trading centres where there are more shops, schools for their children, and entertainment. So if this policy is not enforced they may not stay in the catchment area even if housing is available.

4.4.5 Inadequate supervision and feedback for health staff

Many parents attending the problem tree analysis meetings were unhappy with the quality of services provided at Katchale Health Centre and the village clinics. They described problems such as the nurse being “rude” or shouting at pregnant women who came for deliveries. Parents also complained that health centre staff were often absent during opening hours, and as a result they had to wait a long time for service. **Satisfaction with health services will be assessed during the baseline survey to confirm the scale of this problem.**

Discussions with the management team at the Health Centre revealed that they rarely supervise the Village Clinics and almost never receive feedback from the community about the quality of their services. According to them, one of the key reasons they do not do supervision visits is that their motorbike is not working. Without the motorbike it would take them several hours to cycle to a Village Clinic, supervise, and come back. This would take them away from the Health Centre for too long as so they do not do it regularly. With a motorbike it would be possible to supervise all three Village Clinics easily.

Another possible reason for the lack of supervision by the Health Centre management team is that the Health Area and District Health Office rarely conduct supervision visits themselves at the Health Centre. Again, this is usually attributed to lack of transport. However, in 2013 Inter Aide offered to provide transport several times for these visits and in all cases the offer was not taken up. This suggests that there may be other reasons why they are not conducting supervision visits.

4.4.6 Inadequate enforcement of regulations

According to government legislation, as reported by the DHO coordinators who participated in the meetings, unlicensed clinics and traditional birth attendants are both illegal. Unlicensed clinics dispense drugs that should only be dispensed by the Health Centre with appropriate medical oversight. In some cases the drugs are real and in other cases they may be counterfeit. When parents use these clinics they may receive the wrong drug for their child, or even a counterfeit drug that is

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harmful. Studies of drug quality in Africa have found that up to half of all drugs sold through unofficial sources are counterfeit, either containing no active ingredient, not enough active ingredient and/or harmful contaminants.[xi]

During the problem analysis meetings several community members said that in some cases these unlicensed clinics are actually being supplied or run by HSAs who are taking drugs from the Health Centre. However, these reports could not be verified.

Traditional birth attendants provide delivery services for pregnant women using traditional remedies, including some herbal preparations that could cause harm. For example, there is one local herbal preparation that induces labour and can rupture the uterus as an unintended side effect. During the problem analysis meetings women reported that they preferred the traditional birth attendants because the service was better – they were more polite and kind than the nurse at the health centre, and they did not leave the women alone in the dark and night time.

The DHO, police and Group Village Headmen have the authority to shut down unlicensed clinics and traditional birth attendants operating in their areas. However, they are not always aware of the clinics. In cases when they are aware they may allow them to keep operating if the community use the services or the individual running it is well known and liked.

The baseline survey suggests that this issue may not be such a large problem in Katchale. Only 7% of children who had diarrhea in the last 2 weeks were taken to a shop for treatment, 17% with fever, and 8% with Acute Respitratory Infection (ARI) symptoms. The majority of children were taken to a health facility for treatment.

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5 Program Approach

5.1 Goal

The goal of this program is to reduce the number of children under five years old, including neonates, who get and/or die from preventable diseases. This corresponds to the core problem on the problem tree.

5.2 Objectives

To achieve this goal the program will need to address the main three causes of child morbidity and mortality identified on the problem tree. This means that the program objectives are:

4. To increase the number of children receiving early diagnosis and/or treatment for common diseases (e.g. LA, ORS, etc).
5. To increase the number of parents implementing prevention behaviours (e.g. ITNs, latrines, hand washing, etc).
6. To reduce the number of complications during pregnancy and birth (e.g. prematurity, infection etc) through increasing antenatal care, safe delivery and family planning.

5.3 Overall approach

Most of the root causes identified during the problem tree analysis require more than one stakeholder to solve. Therefore, Inter Aide will focus on working with the following stakeholders in order to address the full range of problems identified:

- Katchale Health Centre
- Mitundu Health Area
- Lilongwe District Health Office
- Chadza and Kalumbu Traditional Authorities (and Chiseka to a limited extent) and the Group Village Headmen and Village Headmen under them
- Chadza and Kalumbu Area Development Committees Authorities (and Chiseka to a limited extent) and the Village Development Committees under them

A Memorandum of Understanding (MOU) will be signed between representatives of the key stakeholders. The MOU will specify the responsibilities of each stakeholder for the project.

The program will be divided into community level activities and system level activities. Community activities will be implemented within each village and will directly involve men, women, children and chiefs. System activities will be implemented with the government health staff and will focus on improving health services. Each of the activities is described in the following sections, although it is important to note that **this plan remains flexible and may be adapted and changed depending on community needs.**

5.4 Community level activities

5.4.1 Identify and train Village Health Committees (VHC)

According to the government health strategy, each HSA is supposed to work with the community to identify and train Village Health Committees (VHCs) in their catchment area. The VHC then works with the HSA to improve the health of their village. VHCs do not currently exist in most villages in Katchale. Therefore, the first step in the community level activities is to identify and train them.

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In 2013 ten volunteers were selected from each village to form a Village Health Committee (VHC). However, we have found that this is too many people for the HSA to manage in the long term and so it is not sustainable.

To make it more sustainable in 2014 only one or two volunteers per village will be selected under each GVH, and ideally these would be volunteers that the HSA is already working with or those who have already been trained through other NGOs or government programs. Together the volunteers would form a ten member Village Health Committee (VHC) under the GVH. Within each village, and even within sub-villages under sub-chiefs, it would still be possible to have additional community volunteers if necessary to implement specific activities. However, these volunteers would be managed by the VHC rather than directly by the HSA or Inter Aide Facilitator.

The VHCs will complete a 4 day training course run by the HSA with assistance from the Inter Aide facilitator. They will then work with the HSA and facilitator on implementing all the community activities.

5.4.2 Chiefs implement and enforce by-laws

The next step in the community level activities will be to work with the two largest TAs in the catchment (Chadza and Kalumbu) and their associated ADCs on the development of public health by-laws to be implemented in all villages in their area. These by-laws will require GVHs to implement and/or promote the following behaviours in their villages (some TAs and GVHs already have by-laws in a few of these areas, in which case the existing by-laws will be used):

1. Households to have latrines
2. Households to practice hand washing
3. Households to hang government provided bed nets and sleep under them
4. Sick children to be taken to the Village Clinic or Health Centre
5. Couples to use modern family planning methods to prevent unwanted pregnancies
6. Pregnant women to attend antenatal and postnatal care and deliver at the Health Centre

Once the by-laws have been drafted by the TA and ADC a meeting will be organised with the GVHs to inform them about the need to implement the by-laws. Each GVH will then organise a meeting with their Village Headmen and sub-chiefs in their villages to inform them about the need to implement the by-laws.

5.4.3 Compliance survey

Once the by-laws have been passed the Inter Aide Facilitator and HSA will conduct house-by-house visits in each village to determine how many households are already implementing the by-laws (e.g. have a latrine, hung bed net, using modern family planning, etc).

A report can then be provided to the GVHs, TA and ADC showing the baseline compliance level in each village (for village with a large number of sub-chiefs the data will also be available per sub-chief). GVHs will then be required to improve only those areas of low compliance in their villages (e.g. if a village has low latrine coverage they will be required to improve it, but if latrine coverage is already high there is no need for further action).

House-by-house follow up visits will be conducted every 6 months in villages where activities have taken place. This will be used to provide updated information on compliance to the GVHs, TA and ADC. Based on the results the TA and ADC is able to penalise any GVHs who are failing to implement the by-laws in their areas. If no activity has taken place in a village then it will be assumed that the compliance has remained the same.

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5.4.4 Action plans and community triggering

Although the implementation of by-laws through the chief system is a common practice within Malawi, it does have limitations. Even a very committed GVH may have difficulty mobilising their community to build latrines or hang their bed nets. This may be for a variety of reasons identified on the problem tree, including lack of awareness, publicity, beliefs in myths and misconceptions, and a preference for income generating activities.

Therefore, after seeing the results of the compliance survey each HSA and facilitator pair will develop their own plan for improving the health of their catchment area. They will put each health issue in priority order and come up with activities that will mobilise the community to take action. The priorities and activities may be different in each HSA station depending on the needs of that area.

Community mobilisation will be achieved through community triggering. This process has been inspired by two existing methods:

- **Community Led Total Sanitation (CLTS)**: CLTS is an approach used to trigger communities to build latrines using locally available materials. We found it very successful in the 2013 villages, where it was able to increase latrine coverage from 66% to 92%. For more information on how CLTS is conducted see the *Handbook on Community Led Total Sanitation* from Plan and IDS.[xii]
- **Positive Deviance approach (also called the Model Mothers approach)**: In this approach individuals who have already found solutions to a particular problem using locally available resources are identified and then teach their behaviours to others. We trialled this approach in four villages in 2013 for bed nets and family planning, and we found it to be very successful. For more information on how Positive Deviance is conducted see the *Basic Field Guide to the Positive Deviance Approach* from the Positive Deviance Initiative.[xiii]

We plan to use a combination of these two methods that has been adapted to suit the local situation and community needs. The steps are as follows:

1. Appointment booking

The Inter Aide Facilitator will make an appointment with the Village Headman to meet all the men, women and children in the village. For villages with a large number of sub-chiefs the meetings may be held together or separately depending on the situation. When making the appointment they will not provide any information on the topic for discussion. The meeting will last for less than two hours to avoid boredom.

2. Triggering

On the day of the meeting men, women, children and chiefs will gather. The aim will be to have at least half of the adults and children in the village present. In our experience from 2013 we found that it is not necessary to have the entire village present for the process to be effective.

Once an audience have gathered the Inter Aide Facilitator will run one or more triggering activities on the topic. Triggering activities are practical demonstrations designed to show the audience why a particular behaviour is important. They focus on providing key information while also generating emotions (embarrassment, fear, shame, desire, jealousy, etc) and peer pressure that are essential for motivating people to take action. See the following table for examples of triggering activities for different behaviours.

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Behaviour	Example triggering activities
Latrines	• *Walk of shame* – walk around the village until human faeces is found, then ask the audience how it got there. • *Shit and food* – show how a fly can land on the faeces and then on food which you eat, even though you cannot see it. • *Shit and water* – show how a fly can land on the faeces and then in the water which you drink, even though you cannot see it. • *Mapping* – ask audience members to make a big map of the village on the ground. Then ask each audience member to stand where their house is and indicate if they have a latrine or not, and where they defecate.
Hand washing	• *Latrine visits* – visit latrines and ask people to show you how they wash their hands after using the latrine. • *Shit and hands* – show how faeces can get on your hands in the latrine, then shake another person's hand and have them prepare food. • *Model parents* – ask some parents who have already built a very effective hand washing station to demonstrate how they built it and use it using only local materials.
Bed nets	• *Embarrassing photographs* – ask who has a bed net hanging then walk through the village to see if you can confirm that it is actually hanging by taking a photograph. • *Model parents* – ask some parents who have already hung their bed net properly to demonstrate how they did it using cheap materials.
Taking sick children for treatment	• *Symptom screening* – Ask parents to gather all the children under five years old together in a group. Then ask volunteers to check each child for symptoms. When sick children are found ask the parents whether or not the child has been for treatment, and if not then why. • *Picking pills* – bring a box of different pills to the village, including counterfeit pills found at illegal clinics. Ask members of the audience if they can guess which pill is the real malaria medication and which are dangerous fakes. • *Mapping* - ask audience members to make a big map of the area showing all the illegal and safe clinics and how to get there.
Family planning	• *Model couples* – invite a model mothers and/or fathers using different methods to explain how and why they use it, and to truthfully answer questions about sexual side effects. Encourage couples to see the model couple privately if they have questions. • *Method demonstration* – bring real samples of family planning methods to the village and have volunteers demonstrate how they are used. • *Hungry children* – calculate how much food each child will eat in one year and put a pile of it in the middle of the village with all the children sitting around. Ask the adults how they will feed all these children if each one eats this much food per year.
Antenatal care and safe delivery	• *Model couples* - invite model mothers and fathers who have already had a safe delivery to explain how they prepared for the delivery, how they were able to transport the mother to the Health Centre, and why they decided to go there. • *Birth preparedness* – Ask volunteers from the audience to demonstrate how they would prepare for the birth of a baby, including the warning signs they would look for. • *Drama* – Invite a local drama group to stage a drama showing the results of two families expecting children, one which goes to the Health Centre and the other which does not.

The specific triggering activities used for each meeting will be selected by the Inter Aide Facilitator depending on the situation and community needs. They can also be adapted and changed if necessary.

Many of the activities in the table above were developed by Inter Aide Facilitators as part of an innovation competition run in 2013 (a prize was given for the most effective activities). The same competition will be run in 2014, but this time with the Inter Aide Facilitator and HSA working together

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throughout the year to create new and improved triggering activities. All the best triggering activities will be documented in a manual for future use.

3. Action plan

Once the Inter Aide Facilitator believes that the audience has been "triggered" (i.e. they now want to take action) they will ask them to prepare an action plan on a flip chart. The action plan will state what action the community will take (e.g. building latrines, hanging nets) and by which date all households will have taken that action. The action plan will be kept by the chief and/or Village Health Committee. The community will choose a follow-up date when the Inter Aide Facilitator and HSA will return to the village to see if they have followed their own action plan.

4. Follow-up

On the chosen date the Inter Aide Facilitator and HSA will return to the village. They will conduct house-by-house follow up with the chiefs and VHCs present to assess whether the village has implemented its own action plan. If the action plan is not yet fully implemented (e.g. only 50 out of 60 households have hung a bed net) then another date for follow-up will be set. This process will continue until the action plan has been fully implemented or the chief and volunteers decide they no longer want to implement it.

This community triggering and action plan process will be run once for each topic in the by-laws unless the village is already compliant with that by-law (e.g. triggering for family planning would not be conducted if most women in the village were already using modern family planning methods).

CASE STUDY: Using a model mother to trigger family planning

On the 10th October 2013 a model mothers triggering activity was implemented at Ngozo Upper village on the topic of family planning. A few weeks before the session the Inter Aide facilitator started observing mothers closely at the regular activities. He also chatted with them informally to find out about their family planning methods.

The facilitator was able to identify one mother, Mrs. Kenson, who was already using injection contraceptives and had recently decided to have a tubal ligation as she did not want any more children. She had a positive attitude towards all types of family planning, was willing to share her experiences with other mothers, and had an outgoing and engaging personality.

The facilitator then asked Mrs Kenson if she would be willing to run an education session for the other mothers in the village. She said yes, and the facilitator told her to keep it a secret, because it would be a surprise. The facilitator then told all the other mothers to gather on the morning of the 10th October for a regular mother group training session.

On the morning of the session 36 women gathered, including five members of the Village Health Committee. As the session progressed five men also joined, including the Group Village Headman. This gave a total participation of 41 adults in a village that has 99 households, so just under half of all households were represented.

Once the women had gathered the facilitator explained that today he would not be giving the lesson. Instead one of them would be giving it. Then he revealed that it would be Mrs Kenson. Initially Mrs Kenson was a bit shy, but eventually she stood up to address the group.

She started by signing a song that is often sung by health workers and in family planning campaigns about how difficult it is to feed and clothe so many children. After the song she announced that she was previously getting an injection every 3 months to prevent her from having more children. She also explained that she has now had a tubal ligation because she has four children (aged 10, 6, 4 and 1 year), which she is happy with, and does not want to have any more.

She then explained what she finds are the benefits of modern family planning:

- She has more time to work and rest because she has fewer children.
- She also finds it easier to feed her children, and they can have many different types of food, because there are fewer of them.

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- Her husband is happy because her body looks younger than the bodies of women who have had many children.

The facilitator then asked the audience if they had any questions for Mrs. Kenson. There were many questions, mainly focussed on concerns about how her husband reacted and the possible sexual side effects. Below are some examples of questions that were asked and Mrs. Kenson's response:

> *Question: I've heard that when you use the injection your husband becomes less interested in having sex with you. Is that true?*
> Answer: That's not true. If he says that he is less interested in sex it's just in his mind! But if you don't explain to your husband thoroughly before you start it can cause problems with your relationship.
>
> *Question: When you have a tubal ligation does it close up your vagina?*
> Answer: No. It's only a small operation in your pelvis. It makes no difference to your vagina.
>
> *Question: Does your husband feel any difference during sex after the tubal ligation?*
> Answer: No. As of now he finds the sex even better because I have more time to have sex with him, since we don't have too many children. I also don't have to worry about getting pregnant again which makes sex more enjoyable.

After questions from the audience the facilitator asked some additional questions to make sure all the key information had been covered. This included asking Mrs Kenson where she got the family planning methods, how they were administered, how much they cost, and if she knew about the other methods such as loops and implants.

In total the session lasted approximately 1.5 hours. At the end of the session the facilitator asked the mothers to raise their hands if they were currently using modern family planning methods. Only 30% of the women present raised their hands. This was similar to the results found by the Village Health Committee when they did their monthly report in September 2013. In their report they stated that only 27% of women were using modern family planning methods.

After checking the current number of women using modern family planning methods the facilitator then asked the women to raise their hands if they wanted to start family planning like Mrs. Kenson. They were reluctant to raise their hands and said they wanted to discuss with their husbands first. The facilitator encouraged them to make a plan to discuss it with their husbands, and to come to Mrs. Kenson if they had further questions.

The Group Village Headman then gave a speech to the group. He said that he was very happy with Ms Kenson's explanation, and that if the village had more women like Mrs. Kenson then it would be developing faster. The facilitator then gave the Group Village Headman a gift to give to Mrs. Kenson as appreciation. The gift was a plastic bucket and some soap, valued at around 800 kwachas.

Figure 13 Mrs Kenson starting her presentation, N'gozo Upper village, 10th October 2013

Figure 14 Mrs Kenson receiving her gift from the group village headman, N'gozo Upper village, 10th October 2013

After one week the facilitator made a follow up visit to Mrs. Kenson to see if anyone had come to see her. She said that no-one had come to see her directly, but that her session had caused a lot of discussion in the village, and she knew that some mothers had already been to the health centre to start family planning.

On the 3rd November 2013 the facilitator did a follow up visit in the village. He went house-by-house to interview every woman present in the village that day, including those who attended the session and those who did not. Of the 66 women interviewed 40 were now using modern family planning methods (61%). Another 17 (26%) said that they were planning to start and gave a date when they expected to do this. Around half of the women reported having, or planning to have, a tubal ligation.

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One potential negative impact from this process that has been observed in the 2013 villages is that extremely poor families, including single mothers, wives of polygamous husbands, and the elderly, can come under pressure to implement actions they cannot afford. For example, the triggering process is very effective at mobilising households to build latrines, but we often come across single mothers and the elderly who are incapable of building a latrine. As a result they may face stigma and discrimination from other community members who now see them as spreading disease.

This issue will be addressed by encouraging community members and chiefs to find ways to support these vulnerable families. For example, in 2013 some chiefs organised male volunteers to build latrines for the elderly, while others asked people with more than one bed net to give their spare one to poor families who had none. These types of activities can increase social support for vulnerable households while also achieving the objectives of the program.

5.5 System level activities

5.5.1 Staffing and scheduling

Additional Nurse

The highest priority staffing issue to be addressed is the need for an additional nurse at the Health Centre. As an emergency short-term solution the DHO has committed to send nurses on rotations for three months at a time in order to provide relief for the current nurse. The DHO will pay the salaries for these relief nurses, although they require assistance from Inter Aide to rent a house for the nurses to live in and to move their belongings.

At the same time the DHO will start looking for a new full-time nurse to live at the facility. This may take up to 12 months to identify someone willing to work in a remote location. If they are able to find someone then there will be a need for a new house at Katchale Health Centre, which the DHO does not have funds to build.

In order to build the Nurse's house the ADC will mobilise community members to mould bricks, and could also potentially apply for some Local Development Funds to assist. Inter Aide will also assist by purchasing cement, iron sheets, solar panels and skilled labour as well as transporting the items to the site. This would then solve the nursing shortage in the long term.

If the nursing shortage is able to be successfully addressed then the same process could be applied to add another Medical Assistant at the facility. This is lower priority than the nurse, but could be done in the third year if the nursing issue has been resolved by the end of the second year. The possibility of doing this will be assessed at the time.

Improved scheduling

Inter Aide will work with the Health Centre management team to review the schedule and identify areas where efficiency improvements could be made. In some cases this may require changes to service delivery procedures that must be approved by DHO first (e.g. having HSAs do triage on under 5 children waiting to see the Medical Assistant). The final schedule will also depend on how successful the program is in adding an additional nurse and Medical Assistant.

In addition to reviewing the schedule Inter Aide has also conducted GPS mapping of the villages in the Health Centre catchment area. This has already helped the HSAs to better understand which villages they are supposed to be working in. Inter Aide will work with the Health Centre management team to review the catchment areas of the HSAs to ensure they are sensible and efficient.

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5.5.2 Supplies and equipment

Improving stock control with the Health Centre Management Committee

Stock control to prevent theft and misuse will be addressed by revitalising the Health Centre Management Committee who is supposed to oversee control mechanisms. As the first step the Health Centre will call a meeting of all GVHs in the area to select new members for the Health Centre Management Committee who will be trained by DHO. DHO will be responsible for organising the training and paying all allowances, but Inter Aide will assist with transport, food and refreshments, and stationary.

As part of their training the Health Centre Management Committee will be taught about the stock control processes at the Health Centre. Following the training they will conduct regular audits and checks to make sure stock is not being stolen or misused. Inter Aide will provide technical support for this process if necessary, and will follow-up to ensure it is happening.

Improving consumption reporting

DHO and Inter Aide will provide technical support to the Health Centre to make sure they are completing their consumption reports correctly and submitting them on time. This should help to improve the supply of drugs and consumables at the Health Centre, as deliveries are supposed to be based on consumption reports which are not always completed properly.

High priority equipment

The highest priority items are those for the delivery and maternity rooms that are causing women to not want to come to the Health Centre for deliveries. This includes:

- Beds
- Mattresses
- Lighting (solar battery and bulbs, or battery powered lamps as a short term solution)
- Bed sheets
- Blankets
- Newborn weighing scale

The first step will be to check if DHO has any of this equipment available, any budget to purchase it, or any second hand items (still in good condition) that could be transferred from other facilities. If not then Inter Aide will make an emergency contribution to purchase the items. While this is not sustainable in the long term, it will at least remove one barrier to using the Health Centre for pregnant women during the project period.

If other activities are successful within the first year of the program (particularly for stock control and consumption report compliance) then further action may be taken on the other required equipment in the second year. This exact items to be procured, and how, will need to be assessed at the time as the situation at Katchale Health Centre may have changed by then.

Family planning supplies

An intermittent supply of injectable contraceptives is another high priority issue. The first step will be to discuss with the Family Planning coordinator at DHO to understand the level of supply currently available and how that might change over time. If an intermittent supply is likely to continue being an issue then Inter Aide will work with organisations such as BLM (Marie Stopes) to see if additional supplies or outreach services can be provided.

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5.5.3 Transport support

Fixing transport problems in the long term is extremely difficult. While Inter Aide can donate new vehicles the likelihood of them being maintained in the long term is very low. Mitundu Health Area and DHO already have a large collection of motorbikes and cars that were purchased by other donors but are no longer working and cannot be maintained.

Partly this is due to lack of funds, but also due to a lack of proper maintenance procedures and the theft and misuse of parts by mechanics. Vehicles sent to the Health Area and DHO for maintenance often take years to return and sometimes come back with their parts stripped.

While this is a serious problem it is beyond the ability of this program to fix the maintenance and procurement procedures of an entire government department. At the same time it will be extremely difficult to implement the activities in this project if government partners do not have adequate transport. Therefore, Inter Aide will provide the following transport support in order to implement the project activities, understanding that in the long term it will not be sustainable.

Health Centre motorbike

For the duration of the project Inter Aide will maintain the Katchale Health Centre motorbike. All fuel for the motorbike will be provided by DHO at a rate of 15,000 MKW per month. The Health Centre motorbike will allow the Area Environmental Health Officer and Senior HSA from the Health Centre to supervise the activities of HSAs in the field. It will also allow them to collect some essential supplies from Mitundu Health Area and to attend meetings at the Inter Aide offices.

Katchale Health Centre has already identified one mechanic who is also an HSA and is able to do maintenance on the motorbike for a lower labour fee than other mechanics. This concept will be explored further to see if there are other mechanics who may be able to work pro-bono after the end of the project to help keep the motorbike running.

HSA bicycles

Inter Aide will purchase a new set of bicycles for the HSAs to allow them to conduct activities in their villages. Unlike regular HSA bicycles these bicycles will belong to the Health Centre and so when an HSA moves to another Health Centre the bicycle will stay at Katchale. For the duration of the project Inter Aide will provide a limited set of spare parts for the bicycles that is the same as for the Inter Aide Facilitators. All other small maintenance repairs will have to be covered by the Health Centre.

Inter Aide will also work with the Health Centre to see if a bicycle mechanic may be found who is willing to donate his time to help maintain the Health Centre bicycles after the end of the project.

Transport support from DHO to Health Centre

The Inter Aide vehicle will be available throughout the project to help move large equipment and supplies from DHO to the Health Centre. This will help prevent shortages due to lack of transport at DHO or Health Area.

Emergency transfer of patients

If the Inter Aide vehicle is in the area at the same time that an emergency patient needs to be transferred to (e.g. from Katchale Health Centre to Mitundu Health Area) then Inter Aide will assist with transport. However, Inter Aide is not able to act as an ambulance service for the area and the patient must be accompanied by a member of staff from the Health Centre.

One option suggested by the Health Centre is to purchase a motorbike ambulance that could be attached to the back of the Health Centre motorbike. Under the current circumstances it is unlikely

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that DHO would be able to keep the motorbike ambulance maintained after the end of the project. However, this option will be investigated further, in addition to getting more information on the number and type of emergency transfers made. If there is a possibility of making this option work then it may be implemented in the third year of the project.

5.5.4 Village Clinics

HSA housing

The most immediate need for the Village Clinics is to have the HSAs living in the catchment area so that the Village Clinics are open regularly. As a short-term emergency solution Inter Aide will rent a house in each of the three Village Clinic catchment areas. The DHO and Health Centre will then enforce the rule that requires the HSAs to live in the houses and Inter Aide will move the HAS's belongings into the house.

Following this Inter Aide and senior staff from the Health Centre will conduct regular supervision visits to ensure that the HSA's are still living in the houses and is running Village Clinics. Feedback will also be collected from community members on their satisfaction with the Village Clinic services.

If the setup is successful then a permanent HSA house will be built in the area with a Village Clinic room attached. This will involve the ADC mobilising community members to mould bricks and apply for Local Development Funds. Inter Aide will provide cement, iron sheets and skilled labour for construction.

This plan will be implemented with the three existing Village Clinics. If Katchale Health Centre does receive additional HSAs as planned then a fourth Village Clinic will be open around Chiphanga station to allow access for villages in the middle of the catchment area. The same approach will be used, with Inter Aide renting a house for the HSA temporarily and then constructing more permanent housing. DHO has given initial approval for the concept of a fourth Village Clinic.

HSA training

To make sure the Village Clinics keep running even when HSAs are on leave or at meetings, additional HSAs at Katchale Health Centre will be trained on how to run the Village Clinics. The training will be provided by DHO with all allowances covered by DHO. Inter Aide may provide some support with transport, food and refreshments, stationary, etc if necessary. The exact number of HSAs to be trained will only be known after the review of the Health Centre schedule and catchment areas. The HSA supervisor also needs to be trained so that he can supervise the Village Clinics.

Drug supplies

Although drug supplies for the Village Clinics were not identified as a problem during the problem tree analysis, this has been a problem in previous years and may be a problem in the future. Therefore, Inter Aide may need to work with other organisations such as UNICEF who are supplying drugs to see if shortages can be addressed when they occur.

5.5.5 Supervision and feedback

Supervision schedule

The DHO and Health Area have committed to develop a supervision schedule and checklists for Katchale Health Centre. The DHO will pay all the relevant allowances for this supervision to take place, while Inter Aide will provide the transport. The Area Environmental Health Office and senior HSA at Katchale Health Centre will also develop a supervision schedule and will use the Health Centre motorbike for transport. Finally, the Health Centre Management Committee will develop an auditing schedule for the Health Centre.

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Inter Aide will assist by following up on the supervision schedules and reminding people when supervision visits are due. If the supervision schedules are not being followed this will be addressed during a meeting with all stakeholders.

Patient satisfaction surveys

According to the District Nursing Officer, the DHO is supposed to be implementing quarterly patient satisfaction surveys with patients exiting each Health Centre, but this rarely happens. Inter Aide will assist with this process by providing staff to conduct the surveys, as well as transport and stationary if necessary.

Patient satisfaction surveys will be conducted every six months at the Health Centre and Village Clinics and the results will be sent to all program stakeholders. A feedback meeting will be held with the Health Centre staff and Health Centre Management Committee to review the results and identify areas for improvement.

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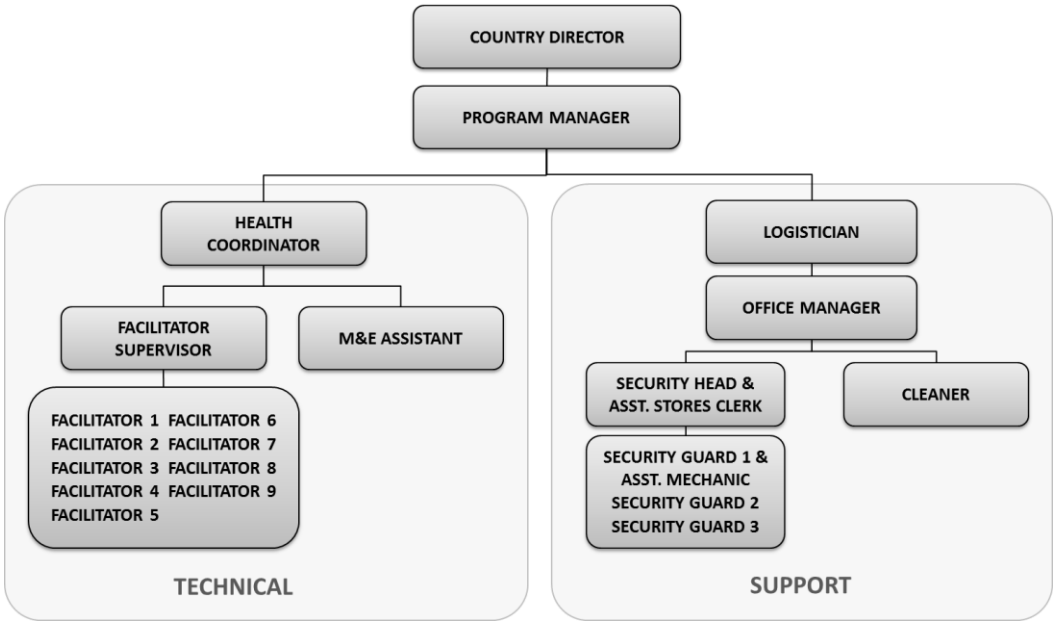
6 Program Management

6.1 Team structure

The following organisational chart shows the structure of the Inter Aide team that will implement this project. All members of the team will be based at the Inter Aide Office in Mitundu except for the Country Director, who will be based in France with regular field visits, and the Facilitators who will be based in their catchment areas. Each Inter Aide Facilitator will be paired with an HSA from Katchale Health Centre so that they have the same catchment villages.



6.2 Roles & Responsibilities

The following table outlines the different roles within the project team and gives a summary of their responsibilities. For further details see the full Job Descriptions for each role.

Role	Responsibilities
Country Director	Overall oversight of the program and communication and reporting to the donor.
Program Manager	Day-to-day management of all aspects of the program, including technical activities, human resources, financial management and preparing reports.
Health Coordinator	Developing activity plans for the technical team and ensuring they are implemented according to the schedule. Liaising with external stakeholders and ensuring activities between stakeholders are coordinated.
Facilitator Supervisor	Random supervision of Facilitators in the field and assisting them with the implementation of more complex activities.
M&E Assistant	Collecting reports from the Facilitators, reviewing and auditing the reports, entering the data into the computer, and preparing summaries for each stakeholder (particularly on by-law compliance).

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Role	Responsibilities
Facilitators	Directly implementing community level activities in their catchment villages in partnership with the HSA.
Logistician	Procurement of supplies and transport of personnel, supplies and equipment for Inter Aide and in support of the Health Centre.
Office Manager	Administrative management of the Inter Aide office, including the stores, accounting, financial auditing, filing, etc.
Security Head & Assistant Stores Clerk	Managing the security guard scheduling and assisting the Office Manager as a Stores Clerk to ensure all supplies and equipment are controlled. If the Stores Clerk role becomes too complex (such as during the second year for construction of HSA and nurse houses) then these two positions may be separated.
Security Guard & Assistant Mechanic	Protecting the office property and personnel in addition to assisting with maintenance of motorbikes and bicycles.
Security Guards	Protecting the office property and personnel.
Cleaner	Keeping the office clean.

6.3 Coordination with government partners

The overall approach for this program is to coordinate multiple actions by Inter Aide, local government structures and health system structures. To keep all the activities coordinated it will be necessary to have regular meetings at different levels. The following table lists all the recurring meetings with partners (see the Work Plan section for exactly when each meeting will occur). In addition to these recurring meetings ad-hoc meetings with partners will occur whenever necessary to discuss specific issues.

Meeting	Participants	Frequency	Location
Monthly planning meetings with Health Centre	Inter Aide technical team including all facilitators, Health Centre HSAs and managers	Monthly	Katchale Health Centre
Review meetings with Health Centre, Health Area and DHO	DHO coordinators and management, Health Area Environment Health Officer, Health Centre management, Inter Aide management	Every 6 months	DHO
Review meetings with GVHs	All GVHs from catchment area, Inter Aide technical team, Health Centre HSAs and managers	Every 6 months	Katchale Health Centre
Review meetings with TA & ADC	TA, ADC members, Inter Aide technical team, Health Centre HSAs and managers	Every 6 months	ADC meeting room

6.4 Allowances policy for government partners

The abuse of allowances is a widespread problem in Malawi. According to studies by the U4 Anti-Corruption Resource Centre[xiv] inappropriate NGO allowances can contribute to government staff

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failing to perform their regular duties. To prevent these problems Inter Aide will adhere strictly to the following policies when supporting meetings, workshop and training sessions:

1. Inter Aide will avoid scheduling meetings, workshops and training sessions when government staff are busy with their regular duties. The provision of services to the public must always take priority. Meetings at the Health Centre will be delayed (or participants excused) if patients are waiting to be treated.

2. Cash allowances will not be paid for any activities that are part of the regular job description for a government employee. This includes facility based meetings, supervision visits, and training sessions that a government employee is expected to perform as part of their normal role. Support may be provided in the form of transport, food or stationary if necessary.

3. Whenever possible meetings will be held a government facilities rather than off-site venues. If Inter Aide invites government partners to attend an off-site meeting then Inter Aide will directly provide food and accommodation if necessary (not cash allowances). Transport costs will be provided directly, or if this is not possible they will be reimbursed based on the actual cost for the distance travelled. Sitting allowances, or any other cash allowances, will not be paid. The same policy applies if Inter Aide calls an emergency ADC or GVH meeting outside the usual schedule of meetings to discuss only Inter Aide issues.

4. If Inter Aide hires government employees to implement activities that are **not** part of their regular job description then Inter Aide will pay for this service based on a fee to be negotiated between the two parties. In this case the government employee must take annual leave in order to complete the work to make sure that it is not infringing on their regular duties. Inter Aide will require proof that annual leave was taken and that the individual was replaced if necessary (e.g. for nurses or HSAs).

These principles are also in-line with the latest *Revision and harmonisation of allowances and reimbursement of transport costs for donor-funded events and missions in Malawi* letter submitted by donors to The Chief Secretary, Office of the President & Cabinet, on 19th November 2013.

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7 Monitoring & Evaluation

For a full description of the M&E processes, tools and methods see the M&E Plan.

7.1 Monitoring approach

The purpose of monitoring is to ensure that the activities are being implemented according to the plan. The table below describes how each community and system level activity will be monitored to ensure it has been implemented.

Activity	Monitoring method
Community level activities	
VHC identification and training	Supervisors will observe the training sessions and complete supervision checklists. VHC members will keep registry books listing all the activities they have implemented, and key health data for their area. These books will be checked monthly by the HSAs and facilitators, and periodically by supervisors.
Chiefs implement and enforce by-laws	Observations will be made at meetings with the TA, ADC and GVHs to assess whether they have developed, implemented and are seriously enforcing the by-laws. House-by-house follow up visits will be conducted every six months in village where activities are run to assess the level of compliance with the by-laws.
Compliance surveys	The facilitators and HSAs will conduct house-by-house follow up visits every six months in villages where activities have been run. The follow up visits will use the same survey questions as the baseline compliance survey. Supervisors will review all survey forms for completeness before they are collected. Random audits will be done by the M&E Assistant to verify the accuracy of the data collected.
Community triggering and action plans	Inter Aide Facilitators will prepare monthly activities plans that will be entered into a calendar on the computer. At the end of the month each activity will be marked as completed, not completed or delayed. Inter Aide Facilitators will take photographs at the start and end of each activity to confirm that it was implemented and whether or not the HSA was present. Random supervision of activities with supervision checklists will confirm the quality of activities implemented, and triggering and follow-up reports from Facilitators will be used to record attendance and results. Facilitator reports will be randomly audited by the M&E Assistant to ensure they are accurate.
System level activities	
Staffing and scheduling	Discussions with Health Centre staff, observations at the Health Centre and records of patient numbers in the Health Information Management System at the Health Centre will be used to assess whether staffing and scheduling activities have been implemented and/or are effective. Patient satisfaction surveys will also be used to assess improvements in the quality of services provided by the staff. A qualitative record of all activities and improvements will be kept in a log by the Program Manager.
Supplies and equipment	Discussions with Health Centre staff, observations at the Health Centre and meetings with the Health Centre Management Committee will be used to assess whether activities to improve supplies and equipment have been implemented, including to confirm that equipment donated by Inter Aide is still present, functioning and in use. Patient satisfaction surveys will also be used to assess improvements in the quality of equipment and supplies. A qualitative record of all activities and improvements will be kept in a log by the Program Manager.

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Activity	Monitoring method
Transport support	Vehicle log books and delivery receipts will be used to track the transport support provided to the Health Centre. Inter Aide will review the Health Centre motorbike log book on a monthly basis to ensure it is being used appropriately. Records will be kept each time that Inter Aide provides transport support to the DHO, Health Area and Health Centre. Random supervision in the field will also confirm that the HSA bicycles and Health Centre motorbike are being used for the intended purpose. A qualitative record of all activities and improvements will be kept in a log by the Program Manager.
HSA housing for village clinics	Random supervision visits to the Village Clinics will be used to confirm whether the HSAs are living in the houses and opening the Village Clinics. Copies of all monthly Village Clinic reports will be taken from the Health Centre to track the number of cases seen at each clinic, compared to the number seen at the Health Centre. A qualitative record of all activities and improvements will be kept in a log by the Program Manager.
Supervision and feedback	The supervision schedule prepared by the DHO, Health Area and Health Centre will be reviewed on a monthly basis to check whether the supervision visits have actually been conducted. Field supervision will be used to confirm that the patient satisfaction survey has also been completed. A qualitative record of all activities and improvements will be kept in a log by the Program Manager.

Seven monitoring indicators have been selected by all stakeholders to measure improvements in Katchale catchment area (see the list in the next section). The indicators are matched to the by-laws passed by the Traditional Authorities. Improvements in these indicators will be measured every 6 months through house-by-house follow up visits. This will only be done in villages where activities have taken place. In villages where no activity has taken place it will be assumed that the indicator has remained the same.

Topic	Indicator	Baseline
Latrines	% of households with their own latrine (not shared)	39%
Hand washing	% of households with a hand washing facility	6%
Bed nets	% of households with at least one hanging bed net	60%
Health seeking	% of sick U5 taken to a health facility within 1 day	44%
Family planning	% of women* using a long term method of family planning	24%
Safe delivery	% of women who delivered at a Health Facility**	71%
Village clinics	% of sick under 5 children taken for treatment at a village clinic ***	30%

* Excluding women who are pregnant, want another child now or are beyond child bearing age
** Out of all women who delivered in the last 6 months
*** Out of all under 5 children who were sick in the last 2 weeks, only in catchment areas with a Village Clinic.

The Program Manager will produce a field report every two months showing any changes in monitoring indicators and describing any outputs produced. Output indicators will include:

- Number of triggering sessions run on each topic
- Number of men, women and children participating in the triggering sessions
- Percentage of triggering sessions where the HSA, facilitator, chiefs, VHC members and/or supervisors were present
- Percentage of triggering sessions where the community made an action plan

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Every six months the Health Centre, Health Area, DHO and Inter Aide staff will meet together to review the results of the monitoring. The results will also be added to the GPS maps of villages created so that the Inter Aide Facilitators, HSAs, and GVHs can see the results for their specific catchment area. After reviewing the results they will then work together to adjust the activities as necessary based on the result (e.g. if latrine use is increasing but ben net hanging is remaining stable then the bed net activities may need to be changed).

7.2 Evaluation approach

Having Inter Aide Facilitators and HSAs conduct regular house-by-house visits is a good way to know whether the monitoring indicators are changing at village level. However, it is not accurate enough to be used for the evaluation of the program.

Most Inter Aide Facilitators and HSAs have only completed high school, and as a result they can have difficulty completing complex forms and questionnaires accurately. They are also interested parties in the program, and so may alter results to make them appear better than they are – particularly if they are under pressure from the GVHs and TAs to show that the by-laws have been implemented. In addition, house-by-house visits are an *activity* within the program intended to motivate households to take action and so cannot be used for evaluation purposes.

Because of this it is necessary to have an independent process for evaluation. This will be done using a quasi-experimental design. A baseline and endline survey will be conducted in randomly selected intervention villages in the Katchale catchment area, as well as randomly selected comparison villages from other nearby Health Centres. The data collection for these surveys will be done by independent enumerators who have experience with more complex household surveys, and will be managed jointly by Inter Aide and the District Health Office. The baseline survey will be conducted in January 2014 and the endline survey after three years in January 2017.

The methodology for the baseline and endline surveys is in the **Baseline Survey Report** and **M&E Plan.** The key indicators that will be used to evaluate the program are shown in the following table, although a full analysis of all survey questions will also be conducted. The questions used to measure each indicator have been matched to the 2010 Malawi Demographic Health Survey (MDHS) as much as possible so they can be compared to national statistics.

In addition to measuring these quantitative indicators, the final evaluation for the program will also use qualitative approaches such as interviews and focus groups with community members and other stakeholders to assess impact.

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Evaluation Indicators

Many questions on the baseline survey were taken from the 2010 MDHS. The following table compares the baseline results in the intervention and control areas to the national results for key indicators in the 2010 MDHS. Changes in these indictors will be used to assess whether the program has made an impact, in addition to a full analysis of all survey results.

TOPIC	INDICATOR	DEFINITION	DATA SOURCE	BASELINE INTERVENTION AREA	BASELINE CONTROL AREA	NATIONAL AVERAGE (2010 MDHS)
Mortality	Neonatal mortality	The number of deaths of children less than one month old per 1000 live births between January 2009 and December 2013.	Baseline survey birth histories section (Q20 A-G)	24	25	31
	Infant mortality	The number of deaths of children less than 1 year old per 1000 live births between February 2008 and January 2013.	Baseline survey birth histories section (Q20 A-G)	51	54	66
	Under 5 mortality	Probability of dying between birth and exactly five years of age expressed per 1,000 live births between February 2004 and January 2009.	Baseline survey birth histories section (Q20 A-G)	114	153	112
Morbidity	Prevalence of fever in children under 5 years	The total number of children under 5 years who had a fever in the last 2 weeks (Q63H=1) divided by the total number of children under 5 years surveyed.	Baseline survey question *"63H.Has (name) been ill with a fever in the last 2 weeks?"*	39%	35%	34.5%
	Prevalence of diarrhoea in children under 5 years	The total number of children under 5 years who had a diarrhoea in the last 2 weeks (Q63C=1) divided by the total number of children under 5 years surveyed.	Baseline survey question *"63C.Has (name) had diarrhoea in the last 2 weeks?"*	24%	22%	17.5%

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TOPIC	INDICATOR	DEFINITION	DATA SOURCE	BASELINE INTERVENTION AREA	BASELINE CONTROL AREA	NATIONAL AVERAGE (2010 MDHS)
	Prevalence of Acute Respiratory Infection (ARI) symptoms in children under 5 years	The total number of children under 5 years who had a cough (Q63I=1) accompanied by short, rapid breathing (Q63J=1) which was chest-related (Q63K=1) divided by the total number of children under 5 years surveyed.	Baseline survey questions *"63I.Has (name) had an illness with a cough at any time in the last 2 weeks", "63J. When (name) had an illness with a cough, did he/she breath faster than normal with short, rapid breaths or have difficulty breathing"* and *"63K. Was the fast or difficult breathing due to a problem in the chest or to a blocked or runny nose?"*	5%	2%	6.8%
Health seeking behaviour and treatment	Percentage of children under 5 years with fever for whom advice or treatment was sought from a health facility or provider	The total number of children who had a fever in the last 2 weeks (Q63H=1) and were taken to a health facility or provider (Q63M=1-9) divided by the total number of children who had a fever in the last 2 weeks (Q63H=1)	Baseline survey question *"63L. Did you seek advice or treatment for the illness from any source?"* and *"63M.Where did you seek advice or treatment?"*	67%	65%	64.6%
	Percentage of children under 5 years with fever who received antimalarial drugs	The total number of children who had a fever in the last 2 weeks (Q63H=1) and were given antimalarial drugs (Q63P=1 or 2) divided by the total number of children who had a fever in the last 2 weeks (Q63=1)	Baseline survey question *"63P. What drugs did (name) take"?*	47%	47%	43.4%
	Percentage of children under 5 years with diarrhoea for whom advice or treatment was sought from a health facility or provider	The total number of children who had diarrhoea in the last 2 weeks (Q63C=1) and were taken to a health facility or provider (Q63E=1-9) divided by the total number of children who had diarrhoea in the last 2 weeks (Q63C=1)	Baseline survey question *"63D.Did you seek advice or treatment for the illness from any source?"* and *"63E.Where did you seek advice or treatment?"*	67%	71%	64.6%
	Percentage of children under 5 years with diarrhoea who received Oral Rehydration Salts (ORS) or pre-packaged liquid	The total number of children who had diarrhoea in the last 2 weeks (Q63C=1) and were given Oral Rehydration Salts or pre-packaged liquid (Q63G=1) divided by the total number of children who had diarrhoea in the last 2 weeks (Q63C=1)	Baseline survey question *"63G.Was he/she given a fluid made from a special packet called THANZI or ORS?"*	51%	65%	69.0%

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TOPIC	INDICATOR	DEFINITION	DATA SOURCE	BASELINE INTERVENTION AREA	BASELINE CONTROL AREA	NATIONAL AVERAGE (2010 MDHS)
	Percentage of children under 5 years with Acute Respiratory Symptoms (ARI) for whom advice or treatment was sought from a health facility or provider	The total number of children under 5 years who had a cough (Q63I=1) accompanied by short, rapid breathing (Q63J=1) which was chest-related (Q63K=1) and were taken to a health facility or provider (Q63M=1-9) divided by the total number of children who had these symptoms in the last 2 weeks	Baseline survey question *"63L. Did you seek advice or treatment for the illness from any source?"* and *"63M.Where did you seek advice or treatment?"*	77%	85%	70.3%
Sanitation	Percentage of households using any type of toilet/latrine	Number of households using any type of sanitation facility (Q653=1-7) divided by the total number of households surveyed	Baseline survey question *"53.What kind of toilet facility do members of your household usually use?"* verified by direct observation	78%	63%	89.1%
Bed nets	Percentage of children under 5 years old who slept under any bed net last night	Number of children under 5 years old who slept under a bed net last night (Q63B=1) divided by the total number of children under 5 years old surveyed	Baseline survey question *"63B. Did (name) sleep under a mosquito net last night?"*	61%	74%	45.2% *Note: Mass distribution of bed nets was performed in 2011 and 2012*
Safe delivery	Percentage of pregnant women attending at least one antenatal check-up	Number of women who attended at least one antenatal check-up (Q26=1) for their most recent pregnancy divided by the total number of women surveyed	Baseline survey question *"26.Did you see anyone for antenatal care for this pregnancy?"*	98%	98%	97.6%
	Percentage of deliveries at a health facility	Number of births delivered at a health facility (Q33=3-10) divided by the total number of women surveyed	Baseline survey question *"33.Where did you give birth to (name)?"*	83%	85%	73.2%
	Percentage of pregnant women attending at least one postnatal check-up within 24 hours of birth	Number of women who attended at least one postnatal check-up (Q36=1) for their most recent pregnancy within 24 hours of the birth (Q37 Hours=0-24) divided by the total number of women surveyed	Baseline survey question *"36.After (name) was born, did any healthcare provide check on your health?"* and *"37.How long after delivery did the first check take place?"*	61%	73%	29.1%

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TOPIC	INDICATOR	DEFINITION	DATA SOURCE	BASELINE INTERVENTION AREA	BASELINE CONTROL AREA	NATIONAL AVERAGE (2010 MDHS)
Family planning	Unmet need for family planning	Number of married or sexually active women aged 15-49 years who report that they do not want to have another child soon (Q39=2 or 3) but are not using a modern family planning method (Q42=2), divided by the total number of married or sexually active women surveyed	Baseline survey question *"39. Would you like to have (a/another) child, or would you prefer not to have any (more) children?"* and *"42.Are you currently doing something or using any method to delay or avoid getting pregnant?"*	30%*	34%*	18.5%

* The baseline survey only sampled households with children under 5 years old, while the 2010 MDHS randomly sampled all households. Women using family planning are less likely to have a child under 5 years old. Therefore, the unmet need for family planning in the baseline survey cannot be directly compared to the result from the 2010 MDHS.

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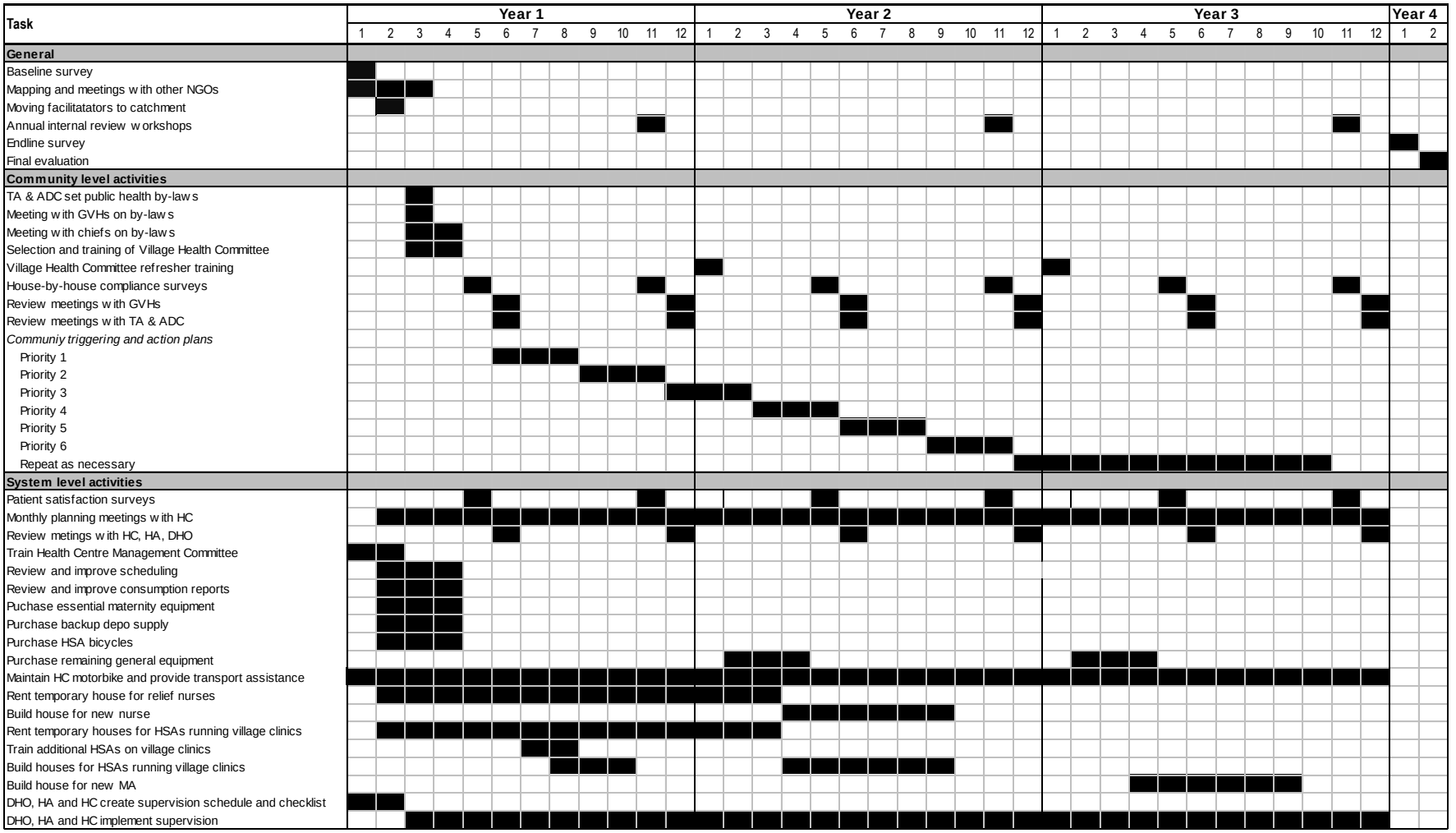
8 Work Plan

Below is the three year work plan for the project. This work plan will be adapted as necessary based on changing community needs.



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9 Risk Assessment

The following table summarises the key internal and external risks to this project, as well as the actions taken to minimise these risks (please note that Workplace Health & Safety Risk Assessments are done separately).

#	Risk	Description	Probability	Severity	Actions to Minimise Risk
1	**Internal Risks**				
1.1	**Facilitators do not implement activities according to their plans**	Previously some Inter Aide Facilitators have failed to implement activities in their villages according to the monthly planning they submitted and have falsified their reports to make it appear as though the activities were done.	**Likely**	**Major**	All Inter Aide Facilitators have now been provided with a camera and are required to take photographs at the start and end of activities to ensure they are actually implemented (in adition to random field supervision). The new M&E Assistant position will be responsible for independently auditing facilitatator reports.
1.2	**Theft of money or supplies from the project**	The misuse of funds through fake receipts and the theft of supplies by staff is a risk on any project. The types of supplies that may be stolen include fuel, prizes, spare parts, etc.	**Moderate**	**Major**	Internal financial auditing by the Office Manager has been started to verify receipts. Stores records are kept to track the use of supplies and these are now audited regularly by the Office Manager and Program Manager, along with deliveries in the fied.
1.3	**Shortage of staff if current staff are successful with career development**	Most of the facilitators are planning to re-sit their Malawi School Certificate Examinations to try and become nurses and Medical Assistants. Other staff also have career plans. If many staff are successful at the same time this may result in a large number of vacancies to be filled.	**Moderate**	**Moderate**	Junior staff who have the potential for filling vacancies with their own career development have been identified and are being trained as potential replacements. The Program Manager will also keep watch for other potential candidates for replacements.
2	**External Risks**				
2.1	**Civil unrest distrupting activities**	In 2014 Malawi will have national elections. There is the possibilty that civil unrest during and after the elections may disrupt activities. In addition, Mitundu has recently experienced riots in response to police interventions in town. This has the potential to disrupt activities.	**Moderate**	**Catastrophic**	Scheduling critical activities during the election period will be avoided. A contingency plan to move the office to Bunda can be implemeted if there is unrest in Mitundu. In this case the facilitators based in the field could continue operating.
2.2	**Health Centre, Health Area or DHO do not implement their agreed activities**	For this program to be successful it is essential that the government health services implement the actions assigned to them. It is not possible for Inter Aide to successfully implement the program in isolation.	**Likely**	**Catastrophic**	A detailed MOU will be signed with government that lists their specific responsibilites. Initially, failure to implement activities will be reported to the Ministy of Health for intervention. Eventually Inter Aide may stop implementing systems level activities if the government fails to implement their agreed actions. Contingency plans will also be developed in case specific government staff cannot implement their activities (e.g. a Facilitator may take on an HSAs role if they cannot implement it). If government is completely unable to implement any activities then only the community level activities will be implemented directly by Inter Aide.
2.3	**TA and ADC do not implement their agreed activities**	For this program to be successful it is essential that the TA and ADC develop and implement by-laws in their areas to support the activities. It is not possible for Inter Aide to successfully implement the program in isolation.	**Likely**	**Catastrophic**	A detailed MOU will be signed with the TA and ADC that lists their specific responsibilites. If it is becomes completely impossible to work with the TA and ADC then a contingency plan would be to work directly with GVHs and village headmen who are interested to participate.
2.4	**Economic collapse / downturn**	The Malawian economy is currently very unstable and corruption by the government has led to many large donors witholding funds. This may lead to high levels of inflation, civil servants not being paid, shut down of government services, and/or an increase in household poverty.	**Likely**	**Major**	A shutdown of government services may lead to the government partners being unable to implement their activities (see Risk 2.2 and 2.3 for actions related to this). From a child health perspective increased inflection and household poverty may lead to increase malnutrition and a lower ability for households to implement prevention measures such as latrines. In this case the program activities may need to be changed to focus on malnutrition again, and the investigation into cash transfers could be made a priority.

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10 Sustainability

This program aims to create a sustained reduction in morbidity and mortality of children under five years old within the catchment area. At the same time we acknowledge that the root causes of this problem complex and may take many years to solve. Some of the activities included in this proposal can be easily sustained by government partners, while others are unlikely to continue without ongoing funding.

The potential sustainability of each project activity is described below. To assess the long term sustainability of the program it would be ideal to conduct another endline survey at least 3-5 years after the end of the project in the intervention and control villages.

10.1 Community level activities

10.1.1 Village Health Committees

Most HSAs currently work with a small number of village volunteers, particularly to help them implement national campaigns. So it is likely that they will keep working with at least some of the Village Health Committee volunteers (although probably not all of them). It is unlikely that the volunteers will continue implementing activities at the same level as during the program. However, if behaviours are improved significantly during the program they may be able to maintain them afterwards.

10.1.2 Chiefs implement and enforce by-laws

The local government system involving TAs, GVHs, ADCs and VDCs is an existing structure that will continue operating after the end of the project. If by-laws are able to be passed and implemented by these groups then they will continue to be by-laws after the project ends. However, we do not know whether the by-laws will continue to be enforced. If some members of the ADC are interested in public health issues they may continue to enforce the by-laws, but if not then compliance may start to wane over time.

10.1.3 Compliance surveys

According to government policies, HSAs are responsible for collecting data regularly in their catchment area. It is unlikely that the HSAs will continue to conduct compliance surveys or follow up as frequently after the program has finished. However, it is hoped that during the program they will develop the skills required to conduct such surveys, and may continue doing them less frequently after the program.

10.1.4 Community triggering and action plans

Research conducted by Water Aid on Community Led Total Sanitation (CLTS) programs has found that three to five years after the end of the activities most communities still have higher latrine coverage than before the program, even though there is some decline.[15]

CLTS uses the same triggering and action plan process that will be used in this program, and so it is possible that similar results will be seen in this case (although it may not be the same for all behaviours). It is unlikely that the HSAs will continue implementing these activities with the same level of frequency after Inter Aide leaves the catchment, although some very motivated HSAs may continue to use the same approach if they find it effective.

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10.2 System level activities

10.2.1 Staffing and scheduling

Katchale Health Centre will continue running after the end of the project, and so improvements to the scheduling and staffing should be maintained. If DHO is able to identify a second full time nurse and a permanent house can be constructed for them then the nurse should continue working at Katchale. If the house is well constructed it should last for many years, although the solar panel system providing electricity may stop performing well after only 2-3 years.

10.2.2 Supplies and equipment

The direct purchasing of supplies and equipment for the Health Centre is not sustainable in the long term. However, it is a necessary activity in order to allow other activities to be successful (e.g. referring pregnant mothers to the Health Centre for delivery). It is unlikely that the equipment purchased will be able to be maintained or replaced regularly by DHO.

The training of the Health Centre Management Committee to oversee the control systems at the Health Centre may or may not be sustainable. This will depend on the management team at the Health Centre, as previous experience has shown that these committees do not continue functioning without support from health workers.

10.2.3 Transport support

Transport support, including maintenance of the Health Centre motorbike and transferring items from the Health Area to Health Centre, is necessary for the implementation of other activities but is not sustainable in the long term. The purchasing of HSA bicycles will improve their transport situation for at least another 3-5 years, but after that they are likely to fall into disrepair like the previous bicycles. DHO is the only partner able to create a long term solution to this problem by overhauling their entire transport and maintenance system. Even if this was done DHO may not have the budget required to fix it.

10.2.4 Village Clinics

If the HSA houses are well built they will last for many years. As long as DHO, the Health Area and Health Centre continue to require HSAs to live then the improvements with the Village Clinics should be sustained. However, there is always the possibility that over time some HSAs may stop living in the houses, and without proper supervision some Village Clinics may return to the current state.

10.2.5 Supervision and feedback

It is theoretically possible for the DHO, Health Area and Health Centre to continue implementing their supervision schedule and patient satisfaction surveys after the end of the program. If the supervisors find the supervision visits and feedback surveys useful they may continue implementing them whenever transport is available. However, without transport support and encouragement from Inter Aide this may not occur as frequently.

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