

Comparative evaluation of community event-based and indicator-based components of MSF’s ‘Tea Team Surveillance System’ in the Somali Region, Ethiopia

Study protocol

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# List of abbreviations

AJS: Acute jaundice syndrome

ATFC: Ambulatory Therapeutic Feeding Centre

AWD: Acute watery diarrhoea

BoH: Bureau of Health

CBS: Community-based surveillance

CDC: Centers for Disease Control and Prevention

CEBS: Community event-based surveillance

CHW: Community health worker

CIBS: Community indicator-based surveillance

CSA: Central statistics agency

EBS: Event-based surveillance

ECDC: European Centre for Disease Prevention and Control

EPHI: Ethiopian Public Health Institute

EPI: Expanded Programme on Immunization

FETP: Field Epidemiology Training Programme

FGD: Focus group discussion

IBS: Indicator-based surveillance

IDP: Internally displaced people

LMIC: Low- and middle-income country

MC: Mobile clinic

MoH: Ministry of Health

MSF-OCA: Médecins Sans Frontières – Operational Centre Amsterdam

MUAC: Middle arm upper circumference

NPV: Negative predictive value

PLW: Pregnant and lactating women

PPV: Positive predictive value

RHB: Regional health bureau

SRS: Somali Regional State

TB: Tuberculosis

TFP: Therapeutic feeding programmes

TT: Tea team

# Introduction

## Context

Somali region is one of the nine ethnic-based regions that constitute the Federal Democratic Republic Somali region ‘officially known as Somali regional state (SRS)’ is one of the nine ethnic based regions that constitute the Federal Democratic Republic of Ethiopia. The region is situated in the most eastern parts of the country and shares borders with Oromia, Afar, and Diredawa regions, Djibouti to the north, Somalia the north, east and south, and Kenya to the south-west. The region comprises 11 administrative zones and 93 districts and 6 city administrations. The region is together with Benshangul, Afar and Gambella regions one of the neglected and least developed regions in Ethiopia.

Doollo zone is one of the nine zones in the Somali region of Ethiopia, and is bordered on the southwest by Korahe zone on the northwest by Jarar and on the northeast and southeast by Somalia. The provincial administrative line defines the southeast border of Ethiopia with Somalia republic. The zone comprises seven districts (Wardher, Galadi, Bokh, Danod, Daratole, Lahel-Yucub and Galhamur district), 101 kebelles (major villages) and more than 250 minor settlements. Wardher is characterized by lowland, sandy soil with scarce vegetation. The climate is hot with biannual seasonal rains the Gu rains between April-Jun and Deyr rain between October- November. Doollo zone is the second largest zone in the Somali region after Afdher and sixth most populous. Based on the 2007 census conducted by the central statistical agency of Ethiopia (CSA), this zone has a total population of 306488 of whom 57.3% were men and 42.7% women. The estimated projection of this population in 2019 was 556,870. According to the statistics, 37% of the zone population were pastoralist. Somali is the main ethnic group in the zone and they are Muslims. However, there is a small number of other Ethiopian ethnic groups living in Wardher and Galadi town. Médecins Sans Frontières-Operational Centre Amsterdam (MSF-OCA) is the only international organization that maintains permanent international staff presence in Doollo zone.

In 2016, a prolonged period of drought, systematic water shortage and unprecedented loss of livestock caused an almost complete loss of livelihoods and added to an already deteriorating nutritional situation form December 2016. This exposed pastoralist communities to reduced availability, lack of basic food, affordable market product and safe water causing immense malnutrition and severe livestock emaciation mortality rate. An absence rains during two rainy seasons in 2016 built up the situation to emergence levels and the rains for the first rainy season in 2017 was below average.

With the unprecedented loss of livestock, any possibility to continue livelihoods as nomads vanished. Consequently, the pastoralists were forced to settle near sub-clans fully dependent on external aid for water and food supply. This situation was compounded by multiple epidemics of cholera, measles, malnutrition and acute jaundice syndrome (AJS) in 2017. Even though pastures and thus the condition of the surviving livestock improved in 2018, the population remained vulnerable due to the impact of the outbreaks and the large loss of livestock/wealth. This prolonged drought has contributed to an estimated 84,989 climate induced internally displaced people (IDP) in 42 sites, a significant number of the IDPs integrated with the host community and some others returned to their pastoralist lifestyle (2). Nevertheless, a large number of them live in poor shelters in the suburbs of the major villages, however their exact number is not known. Although, the epidemic settled down in 2018, however, the above-mentioned group were at particular risk of getting epidemic disease. This risk was heightened by poor sanitation and hygiene, insufficient health service accessibility and availability, unstable supply of food and clean water and lack of health-related knowledge.

## MSF presence in the country

MSF-OCA has been implementing medical support programs in the Doollo Zone, Somali Region, since 2007 and has continued to deal with emergency situations and health needs. The first program MSF-OCA conducted was supporting Wardher centre (now Wardher hospital) in 2007. In 2009 outreach activities were added to five health posts—Galadi, Danod, Kurtunle, Cilanle and Yucub as part of an overall outreach strategy to increase the access to health care for the most vulnerable populations. The access to health care in Doollo zone has increased significantly due to the progressive expansion of the outreach activities. With increased access there has been a clear reduction of severe morbidities, due to increased coverage of the expanded programme on immunisation (EPI) vaccination and therapeutic feeding programmes (TFP). Tuberculosis (TB) diagnosis and treatment was made available through the Regional Health Bureau (RHB) in Wardher hospital with occasional technical and logistic support. Reproductive services were started and gradually gained acceptance in the community. In 2013 MSF-OCA supported the ambition of RHB to upgrade one health centre to a primary hospital and two health posts to well-functioning health centres. MSF-OCA was mainly supporting water and sanitation, medical supply and emergency referrals, staff incentive and training. In 2014, MSF-OCA focused its support on the life-saving departments of the hospital and handed over other departments to Bureau of Health (BoH) under RHB support. This included the operations theatre in Wardher hospital that was providing live saving surgery particularly emergency obstetrical care.

The vulnerability of the Somali region population increased in 2017 following the prolonged period of drought in 2016 in the Somali region and the subsequent outbreaks of cholera, measles, malnutrition and acute jaundice syndrome in 2017, . In response this situation, in March 2017, MSF-OCA started an emergency response for the treatment of patients affected by the cholera outbreak in five districts of Doollo zone including case management, wash, surveillance and community engagement. MSF-OCA started measles vaccination campaigns and established emergency nutrition response by expanding outpatient and inpatient therapeutic feeding programs. MSF teams in Doollo zone treated in the first half of 2017 more than ten times the number of under five years old acute malnourished patients as treated in the same period in 2016. By June 2017 MSF had expanded ambulatory therapeutic feeding centre (ATFC) to 27 sites with around 3000 acute malnourished children treated in program. MSF-OCA increased surveillance and emergence response capacity throughout the Doollo zone in order to detect and respond to outbreaks and other medical emergencies in a timelier manner. From September 2017 onward, MSF continued to focus on establishing and enforcing emergency nutritional response through an extended outpatient and inpatient therapeutic feeding centre (ITFC). In 2018, MSF-OCA pulled out from supporting government health facilities and handed over medical and logistics component of its project in Wardher hospital, Danod, Yucub health centre to the RHB.

## MSF surveillance activities in DoolLo zone

MSF-OCA typically sets up one or more of the following types of surveillance systems when it starts at a new project location: facility indicator-based surveillance, community indicator-based surveillance (CIBS) and community event-based surveillance (CEBS). Table 1 compares some characteristics of community indicator- and event-based surveillance systems.

**Table 1: Comparison of some key characteristics of community indicator- and event-based surveillance systems (3)**

|  |  |  |
| --- | --- | --- |
| **Characteristics** | **Community indicator-based surveillance** | **Community event-based surveillance** |
| Type of information | Structured | Structured and/or unstructured (rumours) |
| Process | Routine/systematic | Flexible |
| Active surveillance | Yes | Yes, but can also be passive (via community informants) |
| Trigger of response mechanism | Typically based on observing changes in surveillance data over several weeks | Immediate if specific signal received triggers a response |
| Uses community disease -specific case definitions | Yes | Yes, but may also use more general definitions e.g. clusters of similar illnesses |
| Pre-determined data to be collected | Yes | Often but not always e.g. unusual events category can include many different types of events which are not all pre-determined |

Various forms of community-based surveillance have been implemented in the Dollo zone since the start of the project in 2007, with 15 community health workers (CHWs) present at various locations. During the 2017 emergency, the malnutrition crisis and the cholera outbreak (March-Oct 2017), the CHW team was expanded to 120 individuals spread across more than 30 locations in the Dollo zone. The epidemic situation continued until early 2018 and settled down by the middle of that year. However, there were still many groups of people, especially IDPs and bush communities, who were at particular risk of getting epidemic diseases. This risk was heightened by poor sanitation and hygiene, insufficient health service accessibility and availability, unstable supply of food and clean water, and lack of health-related knowledge and awareness.

After the initial peak of the emergency in 2017 subsided, the project in the Dollo zone decided to adapt its community surveillance strategy and to reduce the number of CHWs and locations under surveillance. It was a decided to create a sentinel community indicator-based surveillance system, which would complement the health facility indicator-based surveillance being done by mobile clinics and Wardher hospital (MSF still present in the hospital at the time of implementation) and enable the project to reduce the number of surveillance locations while still closely monitoring the health status of the population. Specific criteria were used to select the sentinel community surveillance sites (e.g. presence/absence of IDP populations in a village and access or not to health posts/health centres) in order to have a system that was representative of the area. This was implemented in early 2018 and consisted of 100 CHWs spread across 30 sentinel site locations in the Dollo zone. Mobile clinics were in operation in some of the sentinel sites where there were no Ministry of Health facilities that the population could access. The CHWs at sentinel surveillance sites conducted daily household visits and collected information on the following illnesses: suspected measles, suspected acute watery diarrhoea (AWD) and suspected acute jaundice syndrome (AJS). The CHWs also conducted regular mid-upper arm circumference (MUAC) screening and population counts. CHWs were present both at sites with mobile clinics and without. This system was perceived as being too heavy (for the community and for the surveillance team) and resource intensive and was reduced in January 2019.

In 2019, the project re-oriented its objective to reduced morbidity and mortality among local population, including pastoralists, in Doollo zone by early detection and response to disease outbreaks and conflict, while providing primary health care and monitoring humanitarian and medical needs. To help achieve this objective, the ‘Tea Team Surveillance System’ was established (see figure 1 for location of surveillance sites of the system). This is a novel approach for MSF to implement community-based disease and event surveillance. The novel component of this system is the inclusion of community event-based surveillance as the previous system in place also included community indicator-based and health facility indicator-based surveillance components (mobile clinics). OCA staff, community health workers (CHWs), and volunteers from pastoralist and settled populations, were trained to gather disease and emergency surveillance information as well as to hold regular dialogue (‘tea drinking’) with communities to gather information on populations’ health needs, health-seeking behaviours, preferences for healthcare and experience so far with MSF services. Currently, the surveillance system consists of 17 ‘Tea Team surveillance sites’ (with local informants and elders functioning as sources for surveillance) and 15 mobile clinic sites with CHWs (providing community surveillance data as well as clinic consultation data as a health‑facility-based source of surveillance) (see figure 2 below). See table 2 for a summary of the changes to the types of surveillance systems in place in Doollo zone since 2016.

**Table 2: Types of surveillance system implemented in Doollo zone by MSF-OCA since 2016**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Period | No. CHWs involved in surveillance activities | CIBS | Mobile clinic IBS | Wardher hospital IBS | CEBS | No. locations with CHWs conducting CIBS | No. locations with community informants |
| 2016-2017 | ~120 | Yes | Yes | Yes | No | >30 | 0 |
| 2018 | 100 | Yes | Yes | Yes | No | 30 | 0 |
| 2019- present | 15 | Yes | Yes | No | Yes | 15 | 17 |

**Figure 1: MSF-OCA surveillance sites in Doollo zone with purple kettle symbols for the Tea team sites and brown symbols as the mobile clinic sites**



**Figure. 2. “Tea Team surveillance system” components**

Mobile clinics

(15 locations/villages)

Health facility indicator-based surveillance

Community indicator-based surveillance

Tea team sites

(17 locations/villages)

Community event-based surveillance

The “Tea Team surveillance system” thus consists of three components (1) community indicator-based surveillance monitoring suspected acute watery diarrhoea (AWD), measles, suspected AJS, suspected acute respiratory tract infection (ARTI) and, since March 2020 suspect COVID-19 (using specific community case definitions and data are collected by CHWs at mobile clinic sites); (2) community event-based surveillance where information from community volunteers/local informants, on the following events are collected: population movement, clusters of similar illnesses (which could include suspected measles, AWD and others), increase in deaths, concern about food insecurity, livestock illness and die-off, and other unusual events or occurrences such as lack of healthcare, flooding and others, at sites without mobile clinics (called “Tea team sites” ) and (3) health facility indicator-based surveillance collected by nursing staff at mobile clinic sites, which includes collection of data on several diseases including suspected measles, malaria, acute watery diarrhoea, acute bloody diarrhoea, acute flaccid paralysis, suspected meningitis and severe and moderate acute malnutrition.

## Evaluation of surveillance systems

The United States (US) Centers for Disease Control and Prevention (CDC) as well as the European Centre for Disease Prevention and Control (ECDC) have produces guidelines on how to conduct evaluations of surveillance systems (4, 5). These guidelines identify the following attributes of surveillance systems that should ideally be evaluated: completeness and validity, sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), timeliness, usefulness, representativeness, simplicity, flexibility, acceptability, stability, reliability and adequacy (see further down for definitions). These evaluations typically involve a mixed-methods approach using a combination of retrospective analysis of routine surveillance data, document review and interview and/or focus group discussions with key stakeholders of the surveillance system (e.g. data entry staff, epidemiologists, data collectors and others).

A systematic review on community-based surveillance (CBS) activities among crisis-affected populations identified 25 surveillance systems from low- and middle-income countries (LMICs) (6). This review found both community indicator- and event-based systems and only 12 of these systems were formally evaluated. The surveillance systems included active case finding in various refugee camps and for diseases such as measles, cholera, acute jaundice syndrome as well monitoring of births, deaths, and population movements. For example, an evaluation of the community indicator-based surveillance (CIBS) system in the Rohingya refugee camp in Cox’s Bazar, Bangladesh, 2019 concluded that the PPV of the system varied per disease between 41.7%-100%, it had high human resource requirements with 354 full-time staff across ten different roles. The CIBS was sufficiently flexible to integrate dengue surveillance and was representative of the population in the catchment area. This review highlighted that CBS (indicator or event-based) are not often formally evaluated, but can help in the early detection of outbreaks, provide valid data and help to target interventions for communities served by these systems. However, they are not without their challenges due to their often large human resource requirements and need for regular supervision and training. The authors also suggested that use of electronic tools for surveillance such as mobile applications or SMS could improve the timeliness and completeness of data reporting.

Another systematic review specifically on evaluations of event-based surveillance at health facility and community level in LMICs found that (1) “health facility and community-based EBS provide valuable information that can strengthen the early warning function of national surveillance systems”; (2) “each EBS system is only as good as its capacity to respond to verified events to ensure that EBS can lead to meaningful public health action”; (3) EBS was able to detect outbreaks earlier that indicator-based surveillance; (4) EBS were more often found in communities where there were no or fewer health facilities present and (5) the importance of good communication between communities and other stakeholders involved in the surveillance activities was highlighted (7). A total of 13 surveillance system evaluations were included in the review and the authors found that sensitivity of these systems ranged from 4-54%, PPV ranged from 2.4-84% and these findings depended both on the disease under surveillance and the context (7). Moreover, the EBS systems were generally found to be timely, acceptable, and flexible, however, data completeness was challenging for several systems. Nevertheless, a key finding of this review was firstly that there are few evaluations of event-based surveillance systems published from low- and middle income countries, secondly they were often poorly documented and of low overall quality and lastly that there was a general need for more guidance on how to evaluate event-based surveillance systems.

## Rationale

After the emergency of 2017/2018, it was clear that the population in the Doollo zone remains at risk of suffering potential epidemic diseases and malnourishment due to unsanitary and unhygienic situations in addition to unstable and unreliable sources of food and water, poor coverage of health services and regular population movements of pastoralists in the bush and resettlement in IDP sites. Thus, it is necessary to have a system that can early detect and respond to outbreaks, understand health-related behaviours, and enhance health-seeking behaviours, knowledge, and awareness among the vulnerable Doollo zone population. This current period of stability also offers an opportunity to assess whether this new approach to surveillance in the Doollo zone is meeting its objectives, acceptable to the community and to identify any recommendations on how this system can be enhanced.

Despite increasing recognition of the importance of CBS in settings affected by crises, there has been little research into standard approaches, optimal implementation strategies, and its effectiveness (7). There is current limited guidance or systematic review available on what the best system is to detect outbreaks in nomadic populations or how different surveillance systems complement each other. To our knowledge, there has not been an evaluation of a surveillance system primarily serving nomadic populations. Therefore, this evaluation of the surveillance system will use the standardised surveillance evaluation guidelines to provide a detailed description of the conception, implementation, and comparison of the current surveillance and response system components. The following attributes of the surveillance system will be evaluated: acceptability, representativeness, completeness and consistency, sensitivity, positive predictive value, validity of case and event definitions, timeliness, simplicity, flexibility and stability. This study will complement the existing body of research and will serve as a guidance to other MSF missions and other organisations when establishing surveillance and response mechanisms in similar settings.

# OBJECTIVES

## General Objective

* Evaluate the usefulness of data generated by the three components (see below) of the “Tea team surveillance system” in terms of the number and the type and the scale of public health interventions taken as a result of surveillance alerts in Doollo zone between February 2019 and January 2021.
	1. Community event-based surveillance by local informants at ‘Tea Team surveillance sites’;
	2. Community indicator-based surveillance by CHWs working in locations where MSF-OCA has mobile clinics;
	3. Health facility indicator-based surveillance at MSF-OCA mobile clinics

##  Specific objectives

Evaluate the following surveillance attributes of the three components of the surveillance System:

* Acceptability of the three different components of the surveillance system in the community
* Representativeness of the three different components of the surveillance system of the population in Dollo zone
* Completeness and consistency of data generated by the three different components of the surveillance system
* Sensitivity (to detect outbreaks) of the three different components of the surveillance system
* Positive predictive value (alerts/signals) and validity of case and event definitions of the three different components of the surveillance system

# RESEARCH QUESTION

Does the “Tea Team Surveillance System” generate data that is useful for public health action and how do the attributes of the different components of the “Tea Team Surveillance System” compare?

# Definitions

Definitions of the following attributes are taken from the ECDC guidelines on surveillance system evaluations (5)

|  |  |
| --- | --- |
| Attribute | Definition |
| Acceptability | Refers to a rating provided by data providers and implementers on how acceptable they find the surveillance system to be |
| Completeness | Refers to “whether there are missing and/or unknown data fields in a surveillance database and can be defined as 'the number of completed data fields out of the total number of data fields” or “whether the data available to the surveillance system reflect the true number of cases affected by a given condition” |
| Consistency | Refers to how data are recorded in the surveillance system and if there are changes in how the data are recorded over time |
| Flexibility | Refers to the “rating of the ability of the surveillance system to adapt to changing needs, as perceived by the national health managers and evaluators” |
| Positive predictive value | Refers to “the proportion of real cases (a, 'true positive cases') reported through the surveillance system, divided by the total number of cases reported to the surveillance system” for case-based surveillanceRefers to “probability that a detected outbreak is a bona fide outbreak” for event-based surveillance systems |
| Representativeness | “A public health surveillance system that is representative accurately describes the occurrence of a health-related event over time and its distribution in the population by place and person” |
| Sensitivity | In indicator-based surveillance systems, it is the “proportion of cases in a population that are notified through the surveillance system”For event-based surveillance, it refers to “proportion of outbreaks occurring in a community that are picked up by the surveillance system.” |
| Simplicity | Refers to “both the structure and ease of operation” of the surveillance system |
| Stability | Refers to “the reliability (i.e. the ability to collect, manage, and provide data properly without failure) and availability (the ability to be operational when needed) of the public health surveillance system” |
| Timeliness | Refers to “the speed between steps in a public health surveillance system” |
| Validity | Refers to “the ability to capture the 'true value' of the disease burden, such as incidence or prevalence, which is useful for the analysis of surveillance data” |

# STUDY DESIGN

This is an exploratory mixed methods comparative evaluation of surveillance system outcomes.

Step 1: Description of the surveillance system

Description of the **three components** of the surveillance system in terms of document review:

1. Geographical area, population, coverage
2. Events/diseases under surveillance (including case and event definitions)
3. Components of the surveillance system, data flow and frequency of reporting
4. SOPs or guidance documents
5. Data forms, data bases and outputs
6. Response mechanism and use of surveillance data for public health action

Step 2: Quantitative component

This component will involve retrospective analysis (retrospective design) of routine data collected by the three components of the tea team surveillance system (1) the community event-based surveillance at Tea Team sites (TT); (2) the community indicator-based surveillance collected by CHWs in locations where MSF-OCA has mobile clinics and (3) health facility indicator-based surveillance at mobile clinics (MC) in order to evaluate the following attributes : usefulness, representativeness, completeness and consistency of data, validity of case and event definitions, sensitivity, positive predictive value, timeliness, simplicity, flexibility and stability

Step 3: Qualitative component

Focus group discussions will explore multiple narratives on acceptability, usefulness, flexibility and simplicity of different aspects of the surveillance system set up. Interview with key stakeholders including MSF-OCA data encoders, nursing team supervisors and health education supervisors, community health workers, community key informants (“Tea team”) and other community members will also be conducted to inform the description of the system while also providing additional narrative on the simplicity, flexibility and acceptability of the surveillance system.

# STUDY setting

This study will be conducted in MSF-OCA’s Wardher project and its catchment area, in Somali region, Ethiopia. The quantitative component of this study will examine retrospective data collected between February 2019 and January 2021. The qualitative component will include prospective data collection taking place in June 2021.

# STUDY population

The study population for the qualitative component of the evaluation of the surveillance system will include: MSF-OCA data encoders, nursing team supervisors, health education supervisors, community health workers, and community leaders including Tea team key informants and other community members with knowledge of the surveillance system.

# sampling approach

## Quantitative component

No specific sampling strategy will be applied, as the data used for this component will be routinely available data collected between February 2019-January 2021.

## Qualitative component

Participants for interviews and focus group discussions will be selected purposively. For FGDs, two homogeneous groups consisting of 1) MSF-OCA staff including CHWs, data manager/encoders, mobile clinic staff) and 2) local informants, local leaders, women and elders will be recruited by sex, age and role based on their knowledge and experience of the surveillance system.

# Inclusion and exclusion criteria

## Inclusion criteria

* MSF-OCA staff involved in the running of the surveillance systems (mobile clinic or tea team sites) OR
* Male and female community members aged 18 years and over belonging to the communities in which the surveillance systems are operational (mobile clinic sites or tea team sites) OR
* Key community informants (male and female) from the tea team sites

## Exclusion criteria

* Participants who do not give their consent to participate in the study OR
* Community members or MSF-OCA staff unfamiliar with the surveillance systems, which could be due to their length of time in the communities/at the project location

# Data collection

## Quantitative component

Surveillance data that will be used for this component of the evaluation has already been collected. The data collection procedures of the surveillance system will be described under the ‘description of the surveillance system’.

## Qualitative component

Qualitative data will be collected through voluntary informed consent with individuals participating in a total of six to eight focus group discussions (FGD). Each FGD will consists of four-eight participants and will take up to 60 minutes. FGDs will be facilitated by a trained field epidemiologist and a trained member of the outreach team (male or female depending on the group participants). In addition to FGD, individual interviews with key staff including data encoders, health education supervisors and nurse activity supervisors will be performed. Data tools will be tested to refine the topic guide to identify and resolve as many potential problems or issues with data collection.

Transcripts will be prepared verbatim from audio recordings, where permission by participants is given, and/or field notes and will be password protected and stored on the secure MSF-OCA Network drive

# Data analysis

## Quantitative component

Quantitative data analysis will consist of basic descriptive analysis including proportions and median calculations where appropriate (see data analysis outline in annex for further details). T-tests and chi-squared tests will be used as appropriate for the specific indicators to compare the surveillance system evaluation indicators described above between the community event-based surveillance, CIBS and mobile health clinic surveillance. All analyses will be done using R software (R Core Team (2014). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. http://www.R-project.org/.)

## Qualitative component

For qualitative data analysis, all hand-written notes and visuals describing concepts will be documented. For interpretative FGDs, the co-analysis of existing data and co-generation of new data between research participants and evaluators will inform emergent ideas and action about surveillance practice. For transcribed data from individual interviews and FGDs we will use a deductive approach for the analysis in line with the pre-structured topics allowing for new themes emerging from the data. Transcripts will be reviewed and coded and the codes will be grouped under pre-identified themes using a framework approach to facilitate qualitative data synthesis and exploration of patterns across and within articles. Qualitative data coding will be automated with thematic analysis using ©NVivo 12 for windows.

# Data management and storage

## Quantitative component

Surveillance data collected in the Somali region by MSF-OCA between February 2019 and January 2021 (24 months) has been stored in different data bases, including the ‘Tea Team surveillance data base’, a lessons learnt log, an advocacy and actions log and a locations and activity mapping data base. These databases will be combined/merged, as needed, to form complete databases for the analyses. The surveillance data are stored in four password protected data bases and confidentiality will be maintained through the standard procedures in project for such files. No personal identifiable information is collected in any ‘Tea Team surveillance’ databases and therefore will not appear in the combined database used for this analysis. This database will be password protected and stored on the MSF-OCA Ethiopia Mission Epidemiology SharePoint folder where only individuals with access to the Ethiopia SharePoint folder could view it. Data will be stored on the server for a period of five years and then deleted.

## Qualitative component

Data collected, audio files and verbatim transcriptions, will be handled respectfully and confidentially, and used exclusively for the purpose of this assessment. Informed consent records should be stored in good storage conditions until they are authorised for destruction for at least five years after assessment end depending on local regulations. All databases will be secured with password-protected access systems, shared between co investigators for analysis. Data collected will not be shared with others, presented, or published without consent of the Medical Director of MSF-OCA.

# Ethical considerations

Ethics and regulatory review

This protocol will be submitted to the MSF-OCA Research committee and Ethics Review Board. Permission and a supportive letter will be obtained from the Regional Health Bureau.

## Expected risks and potential benefits

Social Value:

Findings will be used to evidence the value of a novel community surveillance system for semi- nomadic population groups in similar contexts. By enhancing the community knowledge during outbreaks, it will help surveillance objectives to be accepted by the community and thus to be more effective. Findings will be discussed with participants and included in the subsequent implementation strategy and project plans. MSF may share externally if of value for other MSF programmes or audiences.

Benefits:

There will not be any individual benefits from these evaluations, but benefits might exist at a community level. The community will have an opportunity to identify strengths and weaknesses of the system and potentially feel a stronger sense of ownership of the service. In addition, the evaluation will help identify lessons learnt and recommendations that can be operationalized including improved cost-efficiency. Further strengthening the surveillance system will help MSF to better meet the objective of timely identification of outbreaks and response. In addition, the evaluation will contribute to the scarce literature of surveillance system evaluation, which can be used by other MSF missions, governments, NGOs and other stakeholders when implementing surveillance systems, especially in similar settings.

Potential Risks:

The main burden for participants will be time taken for the individual interviews. The study does not cause any physical harm to participants. Nevertheless, asking the interviewees about personal information may feel intrusive and in village contexts there may be limited privacy. Pre agreements with participants to respect privacy will be sought to minimise risk of breach of confidentiality and/or stigmatisation. If anxiety about health or other concerns is noted through the interview process, links with existing support teams will be made as needed and attention to expectations raised about other health issues will be dealt with through strong linkage to existing services.

The moral responsibility of inviting people for interviews has been considered, and whilst no remunerations for participation is foreseen, we may consider offering a token of appreciation for support in line with MSF project norms. We do not anticipate people needing to travel for these meetings. Informed consent will be obtained separately from each participant, with privacy and confidentiality respected. MSF health role is well established to participate in outbreaks, so will have communicated with relevant authorities from the outset to ensure correct permission, courtesy, and access to the population.

There is a risk that community members may fear that their feedback may affect their access to services. To mitigate this, prior to the FGDs, participants will be assured that their answers will not impact their access to MSF services in any way. In addition, MSF staff members may fear that their participation in the evaluation and the outcomes of the evaluation may affect their employment, we will lessen this by assuring our staff that their participation will not affect their employment.

As the COVID-19 pandemic is still ongoing, we will ensure the safety of our staff and the study participants through conducting interviews and FGDs outside or in well ventilated rooms, where possible and staff and participants will be required to wear masks during interviews/FGDs particularly if the interviews/FGDs are held indoors.

## Collaborative approach / involvement of relevant local stakeholders

We will include Ministry of Health and Public Health Department partners in concurrent planning and include their ideas and support. Due to involved nature of the work with the population groups, findings will be built on through iteration with participants to produce knowledge and understanding linked to prevention and health care activities for MSF projects.

MSF-OCA is the study sponsor and is responsible for funding. It oversees the field part of the study, the analysis and report writing. Publication will be agreed between MSF-OCA and the MoH.

Study results will belong to MSF-OCA and the Ethiopian Public Health Institute (EPHI). Dissemination plan to share the results with concerned NGOs, other groups working in health and nutrition programmes and the scientific community, should be described explicitly.

## Obtaining informed consent

### Quantitative component

No personal information is collected in any part of the “Tea Team surveillance system”. Data on patients attending the mobile clinics are in aggregate form and it is not possible to link any case of a specific disease with an individual. Community-based data are in the format of disease signals/rumours reported by community informants or community health workers and no identifiable information is collected from community members. We did not ask community members/patients for consent when collecting routine surveillance data during the period of this evaluation.

### Qualitative component:

Consent: Prior to their involvement, all participants will be given detailed information about the objectives and methods of the evaluation (that there is no right or wrong answer; we would like to learn what they think about how we as a health provider manage health information and activities to strengthen and improve our support and care.

Their consent to participate is voluntary, and they can change their mind about participating and/or terminate the interview at any point. We will explicitly clarify that participation is in no way linked to receiving (or not receiving) services or other benefits. Consent will be briefly outlined verbally to ensure respondent comprehension, with voluntary consent being obtained, with a record of this in writing. Consent of FGD participants will be sought for audio recording also.

## Confidentiality and privacy

Privacy and confidentiality for the participants will be ensured both during and after the interviews and FGDs. However, given the nature of FGDs, it is not possible to guarantee complete confidentiality and this will be explained to participants prior to their participation in the FGDs. All participants included in the study will have the investigations explained to them in a language with which they are familiar. Everyone approached for the study is completely free to participate or not. To ensure confidentiality, all data will be kept private and confidential including all audio files, interview transcripts and field notes, data collection tools, and administrative forms. Whilst personal identifiers will be initially collected these will be separated, organised and stored securely. Data collected will be identified by using a unique code number. We will remove immediately all data from devices such as voice recorders if used, and store securely. For example, at the end of a set of group discussion or interview sessions we will transfer the sound files from a voice recorder to our secure storage platform. Names will not be used on any of these documents. Similarly, information including all quotations in subsequent publications and reports we will remove all identifiable detail, and pseudonyms will be used to ensure there is no link to those participating in the study. Audio recordings will be destroyed once translated, transcribed, and checked. All anonymised data will be stored, and password protected on our secure Microsoft SharePoint platform per site using devices that our organisation has approved for storing and processing personal data. Thus, allowing immediate access between assessment teams and the headquarter social science team focal point. We will restrict access to those that need to use the data. We have set up the consent and agreements with the participant acknowledging that they have the right to ask us to access, withdraw or to delete their data at any time.

## Respect for study participants (including how findings are shared with them)

Authorities and communities (such as village heads, religious leaders, opinion makers) in the study area will be consulted about the purpose of the study, an information sheet will be provided, and their approval will be sought. Before data collection, the principal investigator or an appropriate member of the research team will sit respectfully with village chief, religious leader, women representative and two-three community elders (including pastoralist) and explain the objective of the evaluation and what to expect from the results. Feedback and questions will be listened to, and findings will be shared.

MSF-OCA commits to sharing study results with everyone who participated in the study. The local community will inform the best mode to share knowledge visually through posters or similar means in places where this best demonstrates the results.

# Study Implementation

## Study team, training and supervision

Due to remote support requirements, a voice recording on different modules for implementing qualitative methods will be developed and shared alongside live training sessions, (1) focus group discussions and individual interviews, and (2) training on how to carry out coding analysis. This will be shared with the team with accompanying explanatory slides. Time will be arranged for discussion, questions arising and for practical exercises, (e.g. roleplay of interview). Topic guides will be tested and adapted. Supervision will be continuous throughout the assessment via telephone, this will focus on feedback supervision sessions during testing of data tools, and after each focus group with staff with community members. For analysis stage we will compare coding, and the social science focal point will establish theorising on themes arising, including relevant supplementary literature reviews to support findings.

In most instances’ teams will be trained to carry out the assessment in the local language, using visuals for topic guides where indicated.

For documentation including informed consent records:

Step 1: Two translators who are native speakers of the target language and are experienced in translating vocabulary that may relate to public health measures, will independently translate the documents.

Step 2: Both translations will be compared by the same translators to check mistakes and agree on corrections and provide justification within the assessment team. Note takers or transcribers will be used to transcribe the participant led conversations. A confidentially agreement will be signed by translators and note takers or transcribers.

No training will be required for the quantitative component. An epidemiologist experienced in the conduct of surveillance system evaluations will support the project in person and will be supervised by the epidemiology advisor with additional support provided by the principal investigator.

## Resources and support

Research team: A short term field epidemiologist will join the Wardher project staff to support on the analysis of the quantitative data and provide general evaluation support, project field epidemiologist and research assistant (outreach team member) and transcriber for qualitative data. Qualitative data analysis support will be provided from headquarters.

Transportation and logistics will be carried out as part of routine project activities. Explanation of each setting in terms of resources will be submitted separately to the ethics review board.

Equipment: voice recorder, notepads and pens, water bottles.

## Study timeline and planning

Table 1 Study timeline and planning for Comparative evaluation of community event-based and indicator-based components of MSF-OCA’s ‘Tea Team Surveillance System’ in the Somali Region, Ethiopia

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No | Task | Responsibility | Feb | March | April | May | June | July | August |
| W4 | W1 | W2 | W3 | W4 | W1W2W3W4 | W1W2W3W4 | W1 | W2 | W3 | W4 | W1 | W2 | W3 | W4 | W1 | W2 | W3 |
| 1 | Submission of assessment protocol to MSF Research committee | Study coordinator |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | Submit protocol to MSF ERB | Study coordinator |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | Getting supportive letter from SRHB | PI |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | Submitting final protocol to RHB/JigJiga university  | PI |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | Getting ethical clearance for assessment from RHB/JigJiga university | PI |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | Recruitment of data collectors  | MSF-OCA |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | Training of data collectors  | PI |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | Testing data tools  | PI |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | Data collection  |  PI |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | Analysis of data | Epi |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | Writing report  | Epi/PI |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | First draft of research report  |  Epi/PI/Study coordinator |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# Impact and Dissemination of results

## Dissemination and change in practice at field level

The findings of this study will be communicated to local and regional health bureau and other relevant health administration health offices. Study outcomes and practical implications will be shared and discussed in the project and at coordination level. If changes to the surveillance systems are identified, they will be implemented as needed.

## Dissemination at local / national level and change in national policy & guidelines

The findings of this study will be communicated to local and regional health bureau and other relevant health administration health offices. Changes to the surveillance system are more likely to be internal in nature but any recommendations suggesting change could be necessary at national level in terms of policy would be appropriately communicated.

## Dissemination within the MSF movement / influencing MSF policy & guidelines

Study outcomes and practical implications will be shared and discussed also at headquarters level (among the epidemiology and public health team but also with the broader public health department) and recommendations for how community-based surveillance systems are set up, managed and evaluated and particularly for nomadic populations will be used to inform any future similar activities.

## Dissemination in international research & policy communities, including influencing WHO and other international guidelines

Where appropriate, an article based on this work will be submitted to an open access journal for publication in order to share lessons learned with other organisations conducting similar activities. Publication of this work will require authorisation from all researchers involved in the study. The outcome of this work may also be presented at an MSF or other international conference.

# Appendix

Information sheets and Forms to Guide Verbal consent

Name of Organisations responsible for the study:

Médecins Sans Frontières MSF- Operational Centre Amsterdam

The Somali Regional Health Bureau

Study title: Comparative evaluation of community event-based and indicator-based components of MSF’s ‘Tea Team Surveillance System’ in the Somali Region, Ethiopia.

The Informed Verbal Consent has two parts:

•PART 1: Information Sheet (to share information about the research with you)

•PART 2: VERBAL CONSENT PROCEDURE GUIDE-for name and signature of field study investigator to confirm 1) the participant was competent to consent and 2) understood what they were consenting to.

PART 1:

INFORMATION SHEET FOR INDIVIDUAL KEY INFORMANT INTERVIEW PARTICIPANTS

We would like to invite you to participate in this research project because we think you have great awareness and ideas on the topic of community disease surveillance activities in Dollo zone, Somali region, we have selected you because either you are a key person involved as a data encoder, nursing team supervisors and health education supervisors, community health workers, or community informants to inform the description of the simplicity, flexibility and acceptability of the disease “observation” or surveillance system. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part it is important for you to understand why the research is being done and what your participation will involve. Please take the time to read or listen to the following information carefully and discuss it with others if you wish. Ask if there is anything that is not clear or if you would like more information.

Who is collaborating in this study?

This project is being led by researchers from Médecins Sans Frontières (MSF). MSF is an international non-governmental humanitarian organization that aims to help people worldwide where the need is greatest, delivering emergency medical aid to people affected by conflict, epidemics, disasters or exclusion from healthcare. Active in Ethiopia since 1984, where we provide healthcare in Dollo zone, Somali region, we offered basic healthcare in the 24-hour health centre and ran weekly mobile clinics in four villages in the district. The Ethiopian Ministry of health is responsible for health care delivery and quality of care. As indicated in Health Sector Transformation Plan (HSTP) of Ethiopia (2016-2010), improved health services delivery is one of the core activities to be accomplished by the health sector in close collaboration with health development partners like MSF.

Who is the research team?

Médecins Sans Frontières is conducting this research and the principal investigator is Bashir Ali Dubad, epidemiologist. [Field study investigators to be recruited and trained to carry out the interviews in the local language as applicable]

What is the aim of this research project?

To gain a deeper understanding of your opinions and ideas on the current community disease surveillance activities that MSF-OCA is conducting in the Dollo zone including the different health issues (for example, watery diarrhoea, measles, and jaundices) that we systematically watch and observe. We are interested to understand how you think about the system we have set up to watch these diseases. How this is working and accepted? What are the good experiences and what are the difficulties? What may help improve the system? This study aims to describe the staff’s everyday experiences of operating the community disease surveillance system in the Somali region by exploring the real-life experiences relating to diseases that cause problems for the community.

Who can take part?

Eight to 10 interviews with MSF staff involved in the running of the surveillance systems (mobile clinic or tea team sites)

MSF staff who don’t consent to participate in the interview will be excluded.

What will the study involve?

We will ask you to consent voluntarily to a 45 – 60 minutes interview in which we will invite you to talk about your experiences, ideas, and opinion in relation to the community disease surveillance activities. There is no wrong or right answer as we are interested in what you think about the topic of the community disease surveillance activities. We only ask you to be open and honest. We want to learn how we can strengthen our program for diseases we have in the community. This study will result in a report with findings and recommendations. A summary of our findings will be made available to all participants; you may choose if you would like to receive this feedback or not, before the interview. Basic conditions of participation in this research are:

• If you decide to take part you are still free to withdraw at any time and without giving a reason. You also have the choice to stop the interview at any time or decline to answer particular questions. Withdrawing from the interview will not result in any negative effects or consequences to you. If you decide to withdraw information after the interview this is possible for up to 4 weeks post interview by which time the data will have been anonymised, coded, analysed and prepared for writing.

• Your answers and information will be kept private and confidential. Any comments we use will be done so anonymously and not linked to you. Information will be anonymised by use of false names and removal of identifiable detail in the transcripts and reports.

• We will only record interviews and take notes with consent, and information will not be used for any other purposes or be available to any other parties than the purpose of the study , A master file of participants’ names with corresponding identification codes, transcripts and audio recordings will be stored securely with password protection on one designated computer by the principal investigator who will also be responsible for sharing data with other identified researchers who require access to analyse or check data. Audio recordings will be destroyed once translation has been checked with other anonymised data destroyed after five years and/or two years post publication.

What are the risks and benefits of participating?

The main benefit of participating is the opportunity to help to improve the services that MSF provides, this can be directly (patients at risk of disease and malnutrition) or indirectly (family members or social circles) may result in benefit to the participant in the longer term. We aim to speak with people who play an active role in the running of the community disease surveillance and don’t foresee any stigma being associated with participation to this study. However, there is a risk participants may feel distressed by talking about difficult or sad health experiences during the interview. For this, we aim to link with existing support teams should any specific needs for psychosocial support arise. We will treat interviews as anonymous and confidential. Should information be shared in the interview that reveals risk or harm to the participant or others (i.e. concerns that would require response of a medical nature) we will support the participant to inform the relevant authority. We hope that people will feel free to talk openly about their experiences and opinions.

What are the next steps?

If you would like to take part, please inform field study investigators:

We will then arrange a convenient time for the interview. Prior to the interview, we will explain the research project in more detail, discuss any questions you have, and ask you to complete a consent form.

Contact details:

Bashir Ali Dubad

tel:

Name and contact details of \*third party: to be confirmed at study site.

\*Attention to participant’s rights will be addressed through a community member in consultation with local community leaders, local groups and health workers who will help identify such a person to ensure the participants’ feel comfortable to discuss their participation.

PART 2:

VERBAL CONSENT PROCEDURE GUIDE FOR PARTICIPANTS IN INDIVIDUAL INTERVIEWS 18 years of age and older

Ethics Committee Ref: \_\_\_2124\_\_\_\_\_\_\_\_\_\_\_\_\_

Please say that you have fully understood the Information Sheet and/or listened to and understood an explanation about the research.

Study Title:

Comparative evaluation of community event-based and indicator-based components of MSF’s ‘Tea Team Surveillance System’ in the Somali Region, Ethiopia.

Thank you for considering taking part in this research. The person organizing the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this guidance to verbal consent to keep and refer to at any time:

VERBAL CONSENT GUIDE:

1. I have read and understood the information sheet and/or had a full explanation of the research study and what my participation means. Yes/No

2. I have had the opportunity to ask questions and discuss the study Yes/No

3. I understand that I may withdraw from the study at any time without giving a reason and without personal consequence. I understand that I will be able to withdraw my data up to 4 weeks post interview by which time the data will have been anonymised, coded, analysed and prepared for writing. Yes/No

4. I understand that the information I give may form part of a published report and that I can choose to receive a summary copy. Yes/No

5. I understand that confidentiality and anonymity will be maintained by way of removing names and other identifying information from the data as soon as possible by not revealing individuals’ identities in any reports of the study, and by not divulging the information to persons or organizations requesting it without the research participant’s permission. Yes/No

6.I understand that if information shared in the interview indicates a risk of harm to my health or the health of others (for example a notifiable disease such as polio or measles) the investigators will refer to the appropriate medical authority for treatment and advice. Yes/No

7. I agree that the research team may use my anonymised data for future analysis which may lead to further publications; all conditions above would be respected. Yes/No

8. I consent to my interview being recorded. Yes/No

9. Feedback of study findings

I would like to receive a summary of the study findings and undertake to collect them from the MSF Clinic located at ……………………………………….. Yes/No

 I do not need to receive a summary of the study findings. Yes/No

Date and Record of verbal consent:

We have fully explained the research study described in this form. We have answered the participant questions and will answer any future questions to the best of our ability. We have ensured the participant is competent to consent and understood what they were consenting to.

Printed name of field study investigator obtaining verbal consent for participation in the study:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of field study investigator obtaining verbal consent for participation in the study:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Printed name of field study investigator obtaining verbal consent for interview to be audio recorded:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of field study investigator obtaining verbal consent for interview to be audio recorded:

Date:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Key informant topic guide, Focus group discussion topic guide,

Key informant individual interviews:

Data encoders, MTL, health education supervisors and nurse activity supervisors

Background:

We would like to understand better how to detect outbreaks in for populations living in Doollo. If the system being used is accepted, is useful, flexible, and simple in its set up.

Description of the system: Event Based surveillance system also known as the ‘Tea Team Surveillance System’.

Inclusion of community events to investigate disease outbreaks.

Inclusion of health worker staff, community health workers (CHWs), and volunteers from pastoralist and settled populations. Local informants and elders functioning as sources for surveillance.

All are trained to gather disease and emergency surveillance information as well as to hold regular dialogue (‘tea drinking’) with communities to gather information on health needs, health-seeking behaviours, preferences for healthcare and experience so far with MSF services.

Three sources for data – community, mobile clinic consultation and fixed health facility.

|  |  |  |
| --- | --- | --- |
| (1) community indicator | Monitoring suspected Acute watery diarrhoea, measles, suspected Acute Jaundice Syndrome, suspected Acute Respiratory Tract Infection and, since March 2020 suspect COVID19 (using specific community case definitions)  | Data collected at 15 mobile clinic sites by CHWs |
| (2) community event | Information on the following events is collected: population movement, clusters of similar illnesses (which could include suspected measles, Acute watery diarrhoea, increase in deaths, concern about food insecurity, livestock illness and die-off, and other unusual events or occurrences such as lack of healthcare, flooding  | 17 ‘Tea Team surveillance sites’from community volunteers |
| (3) health facility indicator |  | 15 mobile clinic sites with CHWs, collected by nursing staff at mobile clinic sites.  |

Introduction (5 mins max)

•Thank the participant for agreeing to take part in this interview

•Introductions- explain who you are and share some of your experience

•Create a relaxed atmosphere; offer the participant something to drink when this is possible

•Tell each participant:

“I (We) would like to talk to you about your experiences of health and care when there is a disease that spreads in your community and people become unwell in large numbers (such as measles in children or acute watery diarrhoea in adults and children). We would like to hear your stories, what you think is working well and the challenges you face. This interview will contribute to a better understanding of how people living in Dollo experience staying healthy during disease outbreaks. The interview will take approximately 45 - 60 minutes and can be stopped by you at any time without any consequences. If you would like to continue there is a form, we must complete to check that you have all the information you need before we start. Would you like to continue?

•Make sure the participant has been informed and has consented verbally to participate in the research study

•NOTE: Turn on the recorder and test it is recording (avoid placing cell phones close to recorder!)

acceptability, usefulness, flexibility, and simplicity of different aspects of the surveillance system set up.

|  |  |  |
| --- | --- | --- |
| Introduction | - Study aims- Why invited to participate- Consent and respect within the group |  |
| Your role in the project and set up.[usefulness, flexibility, and simplicity] | *We would like you to talk about your role in the health programme. From start to finish what was your day-to-day experience of this?* | What are your experiences in health care?-prompt specific to data gatheringWhat issues do you think are particular to this programme?Can you describe what was different about programme?How is it best to collect information? |
| Knowledge and practice [acceptability] | *How do people usually prefer to learn? What did you do with any training received?* | 1-prompt why?2-What learning is available.-prompt time given to this-actions post learning-decisions on information gathering3-Preventative health- prompt importance of information gathering-knowledge on surveillance system-what does the system look like (any symbolic differences from previous experiences) |
| Relations with the population[acceptability] | *Moments of interaction**Knowledge and practice of the population* | -prompt how did you engage with the population?-prompt what did and did not work-how was this different from your experience before-prompt knowledge and experience of volunteersSeasonal lives in relation to health-who is present-how did volunteer presence look over time |
| Alerts and the surveillance system in action[flexibility, and simplicity] |  | - Main health risks how are these viewed and managed-prompt check knowledge on alert events and timing-prompt relevance of seasonal knowledge Are sick people taken to health facilities?-share experience thoughts on a particular care- usefulness, importance etc. |
| Preventative actions – reactions to surveillance[usefulness]  |  | Experiences of what happened when information suggested health risks.-How frequent?-prompt to describe what happened |
| General observations moderator |  |  |

Information sheets and Forms to Guide Verbal consent

Name of Organisations responsible for the study:

Médecins Sans Frontières MSF- Operational Centre Amsterdam

The Somali Regional Health Bureau

Study title: Comparative evaluation of community event-based and indicator-based components of MSF’s ‘Tea Team Surveillance System’ in the Somali Region, Ethiopia.

The Informed Verbal Consent has two parts:

•PART 1: Information Sheet (to share information about the research with you)

•PART 2: VERBAL CONSENT PROCEDURE GUIDE-for name and signature of field study investigator to confirm 1) the participant was competent to consent and 2) understood what they were consenting to.

PART 1:

INFORMATION SHEET FOR FOCUS GROUP DISCUSSION PARTICIPANTS

We would like to invite you to participate in this research project because we think you have great awareness and ideas on the topic of community disease surveillance activities in Dollo zone, Somali region, we have selected you because either you are a key person involved as a data encoder, nursing team supervisors and health education supervisors, community health workers, or community informants to inform the description of the simplicity, flexibility and acceptability of the disease “observation” or surveillance system. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part it is important for you to understand why the research is being done and what your participation will involve. Please take the time to read or listen to the following information carefully and discuss it with others if you wish. Ask if there is anything that is not clear or if you would like more information.

Who is collaborating in this study?

This project is being led by researchers from Médecins Sans Frontières (MSF). MSF is an international non-governmental humanitarian organization that aims to help people worldwide where the need is greatest, delivering emergency medical aid to people affected by conflict, epidemics, disasters or exclusion from healthcare. Active in Ethiopia since 1984, where we provide healthcare in Somali region, Dollo zone we offered basic healthcare in the 24-hour health centre and ran weekly mobile clinics in four villages in the district. The Ethiopian Ministry of health is responsible for health care delivery and quality of care. As indicated in Health Sector Transformation Plan (HSTP) of Ethiopia (2016-2010), improved health services delivery is one of the core activities to be accomplished by the health sector in close collaboration with health development partners like MSF.

Who is the research team?

Médecins Sans Frontières is conducting this research and the principal investigator is Bashir Ali Dubad, epidemiologist. [Add field study investigators trained to carry out the interviews in the local language are as applicable]

What is the aim of this research project?

To gain a deeper understanding of your opinions and ideas on different health issues (for example, watery diarrhoea, measles, and jaundices) that we systematically watch and observe. We are interested to understand how you think about the system we have set up to watch these diseases. How this is working and accepted? What are the good experiences? and what are the difficulties? What may help improve the system? This study aims to describe the population’s everyday experiences in the Somali region by exploring the real-life experiences relating to diseases that cause problems for the community.

Who can take part?

Six to eight focus group discussions (FGD) with two different FGD groups (1) staff involved in the running of the system, (2) local informants, local leaders, women and elders will be recruited by sex, age and role based on their knowledge and experience of the surveillance system.

Staff or community members who do not consent to take part in the focus group discussion or staff or community members identified by MSF medics as too unwell to participate in the focus group discussion will be excluded.

What will the study involve?

We will ask you to consent voluntarily to a 45 – 60 minutes focus group discussion in which we will invite you to share your experiences, ideas, and opinion in relation to the community disease surveillance activities. There is no wrong or right answer as we are interested in what you think about the topic of the community disease surveillance activities. We only ask you to be open and honest. We want to learn how we can strengthen our program for diseases we have in the community. This study will result in a report with findings and recommendations. A summary of our findings will be made available to all participants; you may choose if you would like to receive this feedback or not, before the interview. Basic conditions of participation in this research are:

• If you decide to take part you are still free to withdraw at any time and without giving a reason. You also have the choice to stop the interview at any time or decline to answer particular questions. Withdrawing from the interview will not result in any negative effects or consequences to you. If you decide to withdraw information after the interview this is possible for up to 4 weeks post interview by which time the data will have been anonymised, coded, analysed and prepared for writing.

• Your answers and information will be kept private and confidential. Any comments we use will be done so anonymously and not linked to you. Information will be anonymised by use of false names and removal of identifiable detail in the transcripts and reports.

• We will only record interviews and take notes with consent, and information will not be used for any other purposes or be available to any other parties than the purpose of the study , A master file of participants’ names with corresponding identification codes, transcripts and audio recordings will be stored securely with password protection on one designated computer by the principal investigator who will also be responsible for sharing data with other identified researchers who require access to analyse or check data. Audio recordings will be destroyed once translation has been checked with other anonymised data destroyed after five years and/or two years post publication.

What are the risks and benefits of participating?

The main benefit of participating is the opportunity to help to improve the services that MSF provides, this can be directly (patients at risk of disease and malnutrition) or indirectly (family members or social circles) may result in benefit to the participant in the longer term. We aim to speak with people who know and experience impact of disease outbreak within the community and don’t foresee any stigma being associated with participation to this study. However, there is a risk participants may feel distressed by talking about difficult or sad health experiences during the focus group discussion. For this, we aim to link with existing support teams should any specific needs for psychosocial support arise. We will treat focus group discussions as anonymous and confidential. Should information be shared in the focus group discussion that reveals risk or harm to the participant or others (i.e. concerns that would require response of a medical nature) we will support the participant to inform the relevant authority. We hope that people will feel free to talk openly about their experiences and opinions.

We would like to inform you that non-monetary token such as a COVID-19 hygiene Kit (Mask hand sanitizer and soap) will be provided and as part of tea team, participants will be provided tea and coffee service during FGD.

What are the next steps?

If you would like to take part, please inform field study investigators:

We will then arrange a convenient time for the focus group discussion. Prior to the focus group discussion, we will explain the research project in more detail, discuss any questions you have, and ask you to complete a consent form.

Contact details:

Bashir Ali Dubad

tel: 0915061277

Name and contact details of \*third party: to be confirmed at study site.

\*Attention to participant’s rights will be addressed through a community member in consultation with local community leaders, local groups and health workers who will help identify such a person to ensure the participants’ feel comfortable to discuss their participation.

PART 2:

VERBAL CONSENT PROCEDURE GUIDE FOR PARTICIPANTS IN FOCUS GROUP DISCUSSIONS 18 years of age and older

Ethics Committee Ref: \_\_\_2124\_\_\_\_\_\_\_\_\_\_\_\_\_

Please say that you have fully understood the Information Sheet and/or listened to and understood an explanation about the research.

Study Title:

Comparative evaluation of community event-based and indicator-based components of MSF’s ‘Tea Team Surveillance System’ in the Somali Region, Ethiopia.

Thank you for considering taking part in this research. The person organizing the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this guidance to verbal consent to keep and refer to at any time:

VERBAL CONSENT GUIDE:

1. I have read and understood the information sheet and/or had a full explanation of the research study and what my participation means. Yes/No

2. I have had the opportunity to ask questions and discuss the study Yes/No

3. I understand that I may withdraw from the study at any time without giving a reason and without personal consequence. I understand that I will be able to withdraw my data up to 4 weeks post interview by which time the data will have been anonymised, coded, analysed and prepared for writing. Yes/No

4. I understand that the information I give may form part of a published report and that I can choose to receive a summary copy. Yes/No

5. I understand that confidentiality and anonymity will be maintained by way of removing names and other identifying information from the data as soon as possible by not revealing individuals’ identities in any reports of the study, and by not divulging the information to persons or organizations requesting it without the research participant’s permission.Yes/No

6.I understand that if information shared in the interview indicates a risk of harm to my health or the health of others (for example a notifiable disease such as polio or measles) the investigators will refer to the appropriate medical authority for treatment and advice. Yes/No

7. I agree that the research team may use my anonymised data for future analysis which may lead to further publications; all conditions above would be respected. Yes/No

8. I consent to my interview being recorded. Yes/No

9. Feedback of study findings

I would like to receive a summary of the study findings and undertake to collect them from the MSF Clinic located at ……………………………………….. Yes/No

 I do not need to receive a summary of the study findings. Yes/No

Date and Record of verbal consent:

We have fully explained the research study described in this form. We have answered the participant questions and will answer any future questions to the best of our ability. We have ensured the participant is competent to consent and understood what they were consenting to.

Printed name of field study investigator obtaining verbal consent for participation in the study:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of field study investigator obtaining verbal consent for participation in the study:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Printed name of field study investigator obtaining verbal consent for interview to be audio recorded:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of field study investigator obtaining verbal consent for interview to be audio recorded:

Date:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Focus group discussion topic guide

Focus Group Discussions:

MSF staff = CHWs, Data manager/encoders, mobile clinic staff

Tea team members = local informants, local leaders, women, and elders

Background:

We would like to understand better how to detect outbreaks in for populations living in Doollo. If the system being used is accepted, is useful, flexible, and simple in its set up.

Description of the system: Event Based surveillance system also known as the ‘Tea Team Surveillance System’.

Inclusion of community events to investigate disease outbreaks.

Inclusion of health worker staff, community health workers (CHWs), and volunteers from pastoralist and settled populations. Local informants and elders functioning as sources for surveillance.

All are trained to gather disease and emergency surveillance information as well as to hold regular dialogue (‘tea drinking’) with communities to gather information on health needs, health-seeking behaviours, preferences for healthcare and experience so far with MSF services.

3 sources for data – community, mobile clinic consultation and fixed health facility.

|  |  |  |
| --- | --- | --- |
| (1) community indicator | Monitoring suspected Acute watery diarrhoea, measles, suspected AJS, suspected Acute Respiratory Tract Infection and, since March 2020 suspect COVID19 (using specific community case definitions)  | Data collected at 15 mobile clinic sites by CHWs |
| (2) community event | Information from community volunteers, on the following events are collected: population movement, clusters of similar illnesses (which could include suspected measles, Acute watery diarrhoea, increase in deaths, concern about food insecurity, livestock illness and die-off, and other unusual events or occurrences such as lack of healthcare, flooding  | 17 ‘Tea Team surveillance sites’ |
| (3) health facility indicator | Collected by nursing staff at mobile clinic sites.  | 15 mobile clinic sites with CHWs |

Introduction (5 mins max)

•Thank the participants for agreeing to take part in this research

•Introduce yourself

•Create a relaxed atmosphere; offer the participants something to drink when this is possible

•Tell the group

“I (We) would like to talk to you about your experiences of health and care when there is a disease that spreads in your community and people become unwell in large numbers (such as measles in children or acute watery diarrhoea in adults and children). We would like to hear your stories, what you think is working well and the challenges you face. This discussion will contribute to a better understanding of how people living in Dollo experience staying healthy during disease events, floods, or hunger. The discussion will take approximately 45 – 60.

The discussion will take approximately 45 - 60 minutes with anyone in the group deciding to leave at any time if they no longer want to contribute at any time without any consequences.

•Make sure the group participants have been informed about the study and have consented verbally prior to as individuals to participate in the research

•Establish group consensus to respect privacy and confidentiality

•NOTE: Turn on the recorder and test it is recording (avoid placing cell phones close to recorder!)

|  |  |  |
| --- | --- | --- |
| Introduction | - Study aim- Why invited to participate- Group respect  |  |
| General views on ‘health’ events[acceptance] | *We would like you to talk about the health events in your community. What is your experience of this?**What do you think we should know?* | prompt- what would be considered an ‘event’ among your people (word for event)What health problems create an ~‘event’ in your communities? Explain what influences these. prompt- how do people react.What influences this? |
| Relationship with the health system[acceptance] | *What do people usually prefer to do and where do they prefer to go when they have health problems?* *Health seeking behaviour of women, men, and children in general when sick* | 1-prompt first response in the family2-What care/help is available.-prompt what happens next and timing -decisions on health seeking3-Preventative health- prompt importance of control of infection, existing knowledge, immunization 4-knowledge on health check ups-what does high risk sickness look like (extra care, seeking help) |
| Knowledge and practice related to data gathering.[flexibility, and simplicity] | *Where and who should gather information?* | -prompt knowledge and experience of a health events-prompt what information is important -who is relevant -what happens to information-what is the best way to communicate information-tell us about the tea meetings |
| Value of training[acceptance, usefulness] | *Translation of training/ instructions*  | Tell us about the training.-What did you learn?-Which parts did you use?-What could be done better? |
| What happens in practice?[usefulness][flexibility, and simplicity] | *Expectations versus reality?* | -prompt: check what led to timely sharing of ‘event’ happening with health system-prompt assumptions- why is sharing ‘event’ information important- who to? -prompt sequence of actions -prompt decisions – who, when, how-On the health system (MSF team) what were the issues- access, communications. Map out what happened using an example.-prompt thoughts on successes and failures |
| General observations moderator |  |  |

2. Data analysis outline for the quantitative component of the evaluation

|  |  |
| --- | --- |
| Attribute  | Indicator |
| Usefulness | Number of alerts of the CEBS that resulted in public health action |
| Number of alerts of the CIBS that resulted in public health action |
| Number of alerts of the health-facility indicator-based surveillance that resulted in public health action |
| Type of response resulting from alert from CEBS |
| Type of response resulting from alert from CIBS |
| Type of response resulting from alert from health facility indicator-based surveillance |
| Proportion of alerts reported by CEBS |
| Proportion of alerts reported by CIBS |
| Proportion of alerts reported by health facility indicator-based surveillance |
| Proportion of alerts picked up by CEBS or CIBS only and not health facility indicator-based surveillance (gold standard) |
| Representativeness | Percentage of the catchment area of the CEBS and CIBS and health-facility indicator-based surveillance included during the period under surveillance |
| Comparison of characteristics of reported events and diseases identified through the CEBS, CIBS and health facility indicator-based surveillance to all such events, including characteristics of the population, such as age, access to health care, and geographic location |
| Completeness and consistency of data | Completeness of reporting by week by CEBS |
| Completeness of reporting by week by CIBS |
| Completeness of reporting by week by health facility indicator-based surveillance |
| Completeness of datasets by CEBS |
| Completeness of datasets by CIBS |
| Completeness of datasets by health facility indicator-based surveillance |
| Consistency of data by CEBS and CIBS compared to health facility indicator-based surveillance (gold standard) |
| Sensitivity | Proportion of outbreaks identified by CEBS out of the total number of outbreaks identified |
| Proportion of outbreaks identified by CIBS out of the total number of outbreaks identified |
| Proportion of outbreaks identified by health-facility indicator-based surveillance out of the total number of outbreaks identified |
| Positive predictive value | Proportion of true alerts identified by CEBS out of the total number of signals identified by CEBS |
| Proportion of true alerts identified by CIBS out of the total number of signals identified by CIBS |
| Proportion of true alerts identified by health-facility indicator-based surveillance out of the total number of signals identified by health-facility indicator-based surveillance |
| Proportion of responses resulting from CEBS out of the total number of signals identified by CEBS |
| Proportion of responses resulting from CIBS out of the total number of signals identified by CIBS |
| Proportion of responses resulting from health-facility indicator-based surveillance out of the total number of signals identified by health-facility indicator-based surveillance |
| Timeliness of signals, assessment and response | Proportion of signals verified within 24 hours after reporting to CEBS |
| Proportion of signals verified within 24 hours after reporting to CIBS |
| Proportion of signals verified within 24 hours after reporting to health-facility indicator-based surveillance |
| Proportion of alerts assessed within 48 hours after reporting to CEBS |
| Proportion of alerts assessed within 48 hours after reporting to CIBS |
| Proportion of alerts assessed within 48 hours after reporting to health-facility indicator-based surveillance |
| Median time to assessment and response (by MSF and non-MSF actors) after reporting to CEBS |
| Median time to assessment and response (by MSF and non-MSF actors) after reporting to CIBS |
| Median time to assessment and response (by MSF and non-MSF actors) after reporting to health-facility indicator-based surveillance |
| Simplicity | Human, financial and logistical resources needed to implement, CEBS, CIBS and health facility indicator-based surveillance |
| Flexibility | Ability of system to adapt to changing information or operational needs (including resources needed to include COVID-19 surveillance into the existing surveillance system) |
| Stability | Percentage of time that the CEBS has been operating fully, without interruptions |
| Percentage of time that the CIBS has been operating fully, without interruptions |
| Percentage of time that the health facility indicator-based surveillance has been operating fully, without interruptions |

## References

1. Ethiopia Population and Housing Census, Central Statistical Agency 2007
2. Displacement Tracking Matrix, Ethiopia March 2018
3. Integrated Disease Surveillance and Response Technical Guidelines, Booklet One: Introduction Section. Brazzaville: WHO Regional Office for Africa; 2019
4. July 2001 MMWR. Recommendations and reports: Morbidity and mortality weekly report. Recommendations and reports / Centers for Disease Control 50(RR-13):1-35;
5. European Centre for Disease Prevention and Control. Data quality monitoring and surveillance system evaluation – A handbook of methods and applications. Stockholm: ECDC; 2014.
6. October 2020 Lancet Planetary Health: People-centred surveillance: a narrative review of community-based surveillance among crisis-affected population. Ratnayake et al. 4: e483095
7. August 2019 BMC Global Health Event-based surveillance at health facility and community level in low-income and middle-income countries: a systematic review. Kuehne et al, 4, e001878