Health-seeking behaviours in Sofala and Manica in relation to cyclone Idai response

Rapid review question:

- What are the health-seeking and nutritional practices of the affected populations? How do they frame, understand and engage in prevention of cholera/AWD, malaria, measles/rubella (or vaccine preventable diseases); infant and child feeding and other relevant diseases? What do these entail in terms of behaviour change communication and community engagement?

1. Health Systems pre-cyclone

The epidemiological picture of Mozambique is dominated by communicable diseases such as malaria, HIV/AIDS, diarrhoea, acute respiratory infections and tuberculosis, but with a significant rise in non-communicable diseases (cardiovascular diseases, cancers, etc.) particularly in urban areas.

Mozambique's health system is pluralistic, with people relying both on formal and informal systems, and seeking treatment from both biomedical clinics and indigenous doctors. During the colonial period and in the first years of FRELIMO's Mozambique, traditional medicine was banned or side-lined. However, in the past two decades the popularity of indigenous medicine and faith-healing has increased amongst service users, and the formal health system now engages with indigenous doctors to expand the reach of health services. The main health providers are the State National Health System, private clinics, clinics run by NGOs and faith-based organisations, indigenous doctors, faith healers, drug vendors and people with particular traditional roles in health knowledge.

State health provision - the National Health System (NHS): the NHS has four levels of service provision: 1) health posts and health clinics for primary health care 2) district hospitals, general hospitals and rural hospitals (which usually serve more than one district); 3) provincial hospitals; and 4) specialised hospitals. This health facility network only reaches approximately half of the population and some health facilities lack the capacity to provide quality health care, whether in terms of human resources, equipment, drugs or other inputs.

Results from the Household Budget Survey (2014-2015) found that 72.1 per cent of women and 72.9 per cent men use the formal healthcare system. Of those users of the formal sector, women and men living in rural areas are less likely to receive quality care, with lower stocks of medicines and longer waiting times. Officially, most state services are free or accessed for nominal fees; however, many state providers reportedly have asked for under-the-table payments. It is not necessarily the cost of healthcare that is a barrier, but rather that in public healthcare payments need to be made upfront, whereas other providers, such as private and indigenous doctors, accept more flexible arrangements.

The NHS relies on Community Health Workers for health provision at the local level. As the community-level arm of the state sector, community health workers still only partially meet basic health needs in those areas not reached by the NHS. Community care providers are mostly volunteers and include Community Health Agents (ACSs, *Agentes Comunitários de Saúde*), Community Health Workers (APEs) and Traditional Birth Attendants (TBAs) (whose role is to signpost to health facilities and provide direct care only in emergencies), but these groups are not uniformly present at community level.

Private clinics: In post-colonial Mozambique, privatised health services were banned as part of the government's attempt to revitalise the public system. The private sector is now growing, but this is limited to urban areas. The private health sector is not well-regulated at the central level and the exact number of facilities is not known.

NGOs and faith-based organisations: Many health facilities used to be run by European Catholic missionaries. A number of national and international NGOs and other faith-based organisations still provide health services, supposedly in close collaboration with the NHS.

Traditional healers or Indigenous doctors (*curandeiros* in Portuguese and *n'anga* or *nyanga* (s.) or *tinyanga* (pl.) in Cindau): These services are very popular and widely accessed. This is particularly true for rural and lower-income households, which have less physical and economic access to formal healthcare. There is one biomedical doctor for every 50,000 inhabitants, whereas there is an indigenous healer for every 200 inhabitants. Many indigenous doctors are organised in professional associations such as AMETRAMO and Aprometra, and mirrored by state health institutions that aim to incorporate traditional knowledge such as the Institute for Tropical Medicine (IMT). The types of indigenous doctors according to treatment practices are:

Indigenous doctors	**Treatment**
Nyangarume	Healing by medicine (mostly herbal)
Nyanga Nyangarume	Diagnosis/divination with *tinholo*[1] (*Kuhlahluva*) Heals with herbal medicine and rituals
Nyamusoro	*Tinhlolo* for diagnosis Herbal medicines and rituals to heal Medium and exorcism (*Kuxokara*)

The value of using medicinal plants is widely recognised across the country and this group includes those who use herbs in their practice. This is generally composed of leaves, roots, seeds, fruits, bulbs, bark of trunks or branches and sap, that are handled and processed (sometimes mixed with vegetable oils and animal fats) for human application. The use of medicinal plants is sometimes accompanied by rituals that involve the chanting of traditional songs, the use of amulets and other protections in the homes and the burning of incense. A key cleansing ritual is the *phungula*, a bath and inhalation with medicinal herbs which serves to cleanse, to protect and even to perform exorcism.

Faith-healers or 'Prophets' (*profetas* in Portuguese): Independent Christian faith-healing churches (sometimes referred to as African Independent (or Indigenous) Churches) have also been popular in Mozambique, the most popular being the Zion Church. These churches combine local Shona religious notions of illness and Pentecostal beliefs in the healing power of the Holy Spirit. These have been documented in Central Mozambique, especially for issues of child health and infertility. *Profetas* position themselves against *nyanga* doctors, and for this reason some of them no longer use herbal treatment but rely mostly instead on prayer. The types of *profetas* depending on the treatment they provide are:

Zion church	
Zion *Nyangarume* (*Muzioni*)	Herbal medicines and prayer
Muprofeti	Medium and exorcism practice (*kuxokara*) Healing through prayer, ritual performance and remedial administration.

Drug sellers: Pharmacies and informal drug sellers can be sought for health advice for particular ailments in Mozambique. For example, in the case of diarrheal disease, 11.7 percent of people attend pharmacies for advice (as well as other providers).

Trusted community experts: In Sena culture, the family and community play a large role in transmitting aspects of health-related information. The godmother (*sankulo* in Cisena*)* or another popular lady in the community has commonly given education to girls around sexual and reproductive health matters (including the performing of initiation rituals).

[1] The *tinhlolo* are a series of small, specific and selected objects (bones of animals, plants, cockles, coins, stones and others) that symbolize the body and its spirit, the household, the family and society. The objects are thrown on a surface and then analysed by *nyanga*, the patient and the spirits.

2. Indigenous models of illness

In Indigenous models, people may differentiate between natural and supernatural causes, as well as between personal and impersonal. For example, healers in central Mozambique use Portuguese words to describe diseases as 'natural', 'from God', or 'from the wind' (*do vento* or *com o vento*), in similar ways as biomedicine would frame a natural disease. Diseases that may be considered as natural are few, for example smallpox, measles, cholera, leprosy, conjunctivitis, cataract, malaria, and abscess.

However, even when natural causes are employed as immediate explanations, other layers of explanation related to social relations can be used. Material explanations explain *how* misfortune happens, but do not explain *why* it happens, and most importantly, why such circumstances have arisen for *that particular person*. There are three common beliefs about non-natural causation of illness: 1) lack of protection by ancestors, 2) spirit intervention and 3) witchcraft and sorcery.

Suspension of protection by ancestors: Severe diseases caused by evil spirits and sorcerers or sorceresses (*feiticeros/as in Portuguese, muroi in Cindau*) can be linked to a lack of protection from the ancestors which results from having neglected ritual ceremonies of respect and memory, or through immoral behaviour, such as infidelity, murder, and intra-family conflicts. Under this logic, it is not enough to cure the illness in order to cure the patient. In addition, social equilibrium with kin, community and ancestors also needs to be restored. If not, the illness will reappear.

Foreign spirit intervention: Spirits play a role in both healing and creating disease. There are spirits linked to a person's lineage called *vahlonga*. A different kind of spirits, called foreign spirits, may play a fundamental role in creating disease and misfortune, yet they also play a central role in resolving the situation through their interaction with healers. Foreign spirits are not ancestor spirits from the patient's own lineage, but rather spirits that collect a debt incurred by an ancestor of the patient in the past (either ancient or recent). For example, the patient's ancestors had failed to bury someone according to tradition, and their spirit comes to seek redress. Untimely deaths and inadequate burials are particularly common in conflict. Hence, 'foreign' spirits (*madhlozi* in Cindau) link closely to Mozambique's history of conflict, as foreign spirits can be Ndau and Nguni warriors who were killed in precolonial times, or participants in the independence or civil wars. Both lineage spirits and foreign spirits are invoked and work through *tinyanga* and faith-healers to identify the cause of the disease and the steps to address it.

Witchcraft and sorcery: Witchcraft and sorcery are, compared to other South-African countries, less prevalent as explanations of disease. These explanations arise particularly in those cases in which wealth and envy play a role. It thrives in urban areas. There are gender dimensions to take into account. Witchcraft in Manica (*uroya*) is often attributed to women. Witches are thought to host a spirit of a maternal ancestor with a special power to cause evil. They are said to cannibalise their young. Thus women with reproductive losses or infertility can be accused of witchcraft, and be subject to violence. Sorcerers are more likely to be men. They harm others for their own wealth and power, and they can be hired by a client to become wealthier or to harm someone that the client dislikes. In these situations, illness may be dealt with in part by a biomedical provider, but a visit to the *nyanga* is necessary to address the sorcery.

3. Health-seeking behaviours

Health-seeking is pluralistic. People consult a combination of biomedical, traditional and faith-based health services, often alongside one another. The sequence of consultation is determined by the illness. Many illnesses are not immediately associated with spiritual activity, and treatment may be sought at the health centre, for example, traditional healers may refer patients to the formal health system for HIV treatment. Signs of mental health and psychosocial distress are usually first addressed by traditional and religious healers. When an illness persists, is especially severe, occurs in combination with other unusual symptoms, or coincides with a social conflict or other events in social life, a spiritual cause might be considered.

Having a health facility nearby which has staff and equipment increases the probability of seeking biomedical care when ill. Ethnographic research has highlighted the potential acceptability of mobile health clinics, on the provision that it is coordinated well with community leaders and traditional healers.

There are successful examples of public health efforts liaising with healers. For example, in the past healers have motivated people to take HIV tests. Similarly, treatments can be complementary, for example, in the case of HIV/ADS, healers have a number of plants to remedy secondary diseases and with anti-viral effects. Furthermore, there is evidence of the psychosocial effect of traditional healing, cleansing and other 'traditional' treatments having a positive effect on health outcomes, as they give meanings to illness and give ways to cope with adversity, particularly when such healing is combined with biomedical or faith-healing. The response should seek these complementarities.

4. Diarrhoeal disease, with a focus on cholera

Taxonomies and causal explanations of diarrhoea: After malaria, diarrhoeas are the most frequent diseases reported by health centres. For example, diarrheal cases spike in the rainy months, as faecal matter is washed to unprotected sources of water. At a country level, only 23.6 per cent of the population have access to improved sanitation facilities, and only 47 per cent use drinking water from improved sources (2017 data). Before cyclone Idai, rates of diarrhoea were 8 per cent in Sofala and 9 per cent in Manica. In Manica province, the indigenous ways of speaking of diarrhoea are:

Local term	Diarrhoea	Causes
Manyoka	General term for diarrhoea, often simple, common, non- dangerous type. (*Nyoka* is a snake in the stomach)	Most often naturalistic: - Eating bad/dirty food or water - Cutting teeth Less often, neglect of tradition (*nyoka kusororoa*), or foreign spirit (*manyoka kuhambisa asinadriru*)
Phiringaniso	More serious watery diarrhoea, sometimes vomiting. Sunken fontanelle, dehydration.	Violations of norms of sexual behaviour by parent- child is contaminated.
Chinhamukaka	Whitish, milky, diarrhoea. Vomiting. Sunken fontanelle, dehydration.	Heat Child ingests dirt
Chikahara	Depressed fontanelle, dehydration.	Believed to be congenital (not associated with diarrhoea) *Nyoka* reacting to contamination
Chikamba	Greenish diarrhoea, and pain in waist.	Related to *chikahara* Violations of norms of sexual behaviour
Ntsanganiko	Chronic diarrhoea mixed with blood, weight loss and fever (dysentery).	Failure of parents to perform funeral rituals Acting too modern- forgetting tradition Visiting families that have had a death without purifying oneself afterwards
Kuamwissira	Child diarrhoea, milky and mucosy. Dry, wrinkled skin.	Nursing a child when newly pregnant, which spoils the milk
Nyongo	Diarrhoea and Greenish or very white eyes. Brown mucus in vomit.	Eating of green leaves Fear stuck in the child's stomach
Colera (Portuguese) *Nyoka djokwenda (Cindau)* *Kolera (Cisena)*	Term used mainly in the cities but expanding. Serious illness, vomiting and diarrhoea, pain and 'heat in the stomach'.	Spirits bringing bad luck or perhaps revenge. Treated as other diarrhoeas.

Cholera

Biomedical and public health explanations of cholera diarrhoea and its transmission predominate in Mozambique. Cholera is mostly attributed to environmental and sanitation related factors linked to contamination of water or food. Other narratives do coexist (witchcraft, spirits), but they are less prevalent.

This is in part explained by the fact that biomedical explanations of risk of transmission of diarrhoeas resonate with indigenous ideas of dirt, contamination, cleansing and purification.

Political explanations of cholera transmission: When cholera outbreaks occur within communities that are politically marginalised, the disease and its spread may be attributed to the government or political parties. In Nampula city in 2015, the State district administrators and health workers were accused of poisoning the water with cholera. The political dynamics in Sofala and Manica (Renamo and MDM strongholds) are similar, hence similar narratives in opposition to the government or along class lines can easily arise.

Reducing risk: In Mozambique, people are generally aware of the risks to cholera transmission, and knowledge or cultural beliefs are not the main constraints on risk reducing behaviour. When given enabling tools, people will engage in risk-mitigating behaviours: safe water points, distribution of soap, water purification, etc. Hygiene promotion activities are likely to be more successful if they convey a feeling of togetherness, build on local concepts of cleanliness, dirt and pollution, and rely on trusted leaders demonstrating new practices and on community peer pressure.

Seeking treatment: Depending on the diarrhoea, people's health-seeking practices will differ. Cholera diarrhoea is understood to be dangerous, and people would seek treatment at a biomedical provider first, whereas for other diarrhoeas they would attempt to rehydrate using home remedies, going to the pharmacies, etc. Community Health Workers can, through their education efforts, encourage home treatment with homemade or purchased ORS in the case of milder presentations of the disease.

Engagement with *tinyanga* and faith-healers should be ensured to allow for the referral to cholera treatment centres in the case of high-risk cases of cholera, and in the milder cases, to incorporate rehydration goals within their treatment. For example, in past outbreaks, healers have distributed ORS sachets, created their own solutions, recommended patients ingest coconut water, as well as administering traditional medicines that facilitate rehydration.

Attitudes towards cholera vaccination: The fact that people may have alternative explanations of what causes cholera or its mode of transmission does not mean that people will not accept the vaccine. According to a study in Nampula city, people's willingness to be vaccinated was very high (95 per cent of respondents). People perceive oral medications to be safer, but they perceived them to be less effective than injectable vaccines.

5. Malaria

According to the World Malaria Report, Mozambique has the third highest number of malaria cases anywhere in the world, or 5 per cent of all cases globally, with the majority of deaths being in children under 5 years. Predictors of malaria in Sofala province include geographical location, socioeconomic status, HIV prevalence and access to malaria-prevention interventions (especially bed nets and spraying). When there is a HIV and malaria co-infection, there is a high risk of complications, in particular anaemia.

Many communities see malaria as part of everyday life and are familiar with most of the disease's symptoms. The most commonly used terms for malaria in both Chókwè and Massinga districts refer to either mosquito or fever. For example, *dzedzedzé, dsedse, mudinhane, muzototó,* and *ximungwamugwane* all refer to mosquito. The term *efevere* references fever. The term 'malaria' is also used in Portuguese. In Cindau, people use an adaptation of the Portuguese term, *mararia,* or the local term *fobiri.*

A study of risk perception showed that caregivers and other community members identified the main household prevention methods for malaria as the use of mosquito nets and the cleaning of living areas. Most linked transmission to mosquitoes, some linked transmission to unclean living areas and poor personal hygiene. Spraying activities can generate suspicion about their purpose and efficacy.

A malaria vaccine would be acceptable if issues related to eligibility, dosage and potential side effects are well-communicated; if channels for two-way communication are open for people to ask questions; and if supply-side issues, such as distance, wait times and service quality (including communication skills of providers), are addressed.

Treatment seeking for malaria is influenced by health beliefs, availability of providers, economic factors, and relational factors (including social status and political connections). People may ascribe malaria-like symptoms to biomedical causes, and therefore recognise that a visit to the health centre or hospital is therapeutically helpful. Many also first try to manage malaria symptoms at home with common treatments including over-the-counter medicine paracetamol and the use of cold water or wet cloths "to cool off the body." Traditional remedies for the treatment for malaria include the drinking of boiled herbs or plant leaves, including avocado and eucalyptus leaves, although these might be less popular. If home remedies or over-the-counter drugs fail, medical treatments might be sought at a hospital.

6. Vaccination of common diseases measles/rubella

Full immunisation (i.e. BCG for TB, measles, pentavalent and polio vaccines) coverage of children 12-24 months is 64 per cent in Mozambique, specifically 75 per cent in urban areas and 60 per cent in rural areas. Sofala and Manica provinces have slightly above average coverage at 78.4 per cent and 64.6 per cent respectively. Children are more likely to be vaccinated if they live in urban areas than in rural areas, if the mother is educated, and if household income is high.

Research from Gaza and Inhambane provinces shows attitudes towards the country's childhood immunisation programme and to vaccines in general are generally positive. Community members did report a lack of information on particular vaccines and expressed fears that an injection or vaccine could potentially harm or kill a child. Community members said they often did not know what discomforts or side effects to expect. Supply-side issues related to vaccine uptake include distance, waiting times and service quality (including communication skills of providers). Decisions related to childhood vaccinations and other issues of child health are generally made within the immediate family by one or both parents, but mostly the mother due to her role as primary caregiver.

Indigenous ideas of protection can be used to promote vaccination. Protection is often sought against sorcery or spirits. Similar to the *phungula* inhalation ritual detailed above, the *bafo is* a kind of sauna treatment with different medicines for each misfortune or disease which serves to protect. As well as inhalation, other ways of ways of granting protection can be through ingestion or baths. There is one technique called *vacina* (vaccine), which consists of applying a medicine in incisions under the skin.

7. Child nutrition and feeding practices

In Mozambique, 43 per cent of children under 5 have moderate chronic malnutrition, 20 per cent suffer severe chronic malnutrition and 8 per cent have acute malnutrition. Malnutrition is deemed responsible for 30 percent of infant mortalities. Chronic malnutrition is more prevalent in rural areas (46 per cent) than in urban areas (35 per cent). In Manica, rates are 41.9 per cent and in Sofala 35.7 per cent. Chronic malnutrition decreases significantly depending on wealth (rates in the poorest quintile are double that of the richest one), mother's nutritional status, mother's education and time between births. Acute malnutrition is 6.7 per cent in Manica and 7.4 per cent in Sofala.

Breastfeeding practices: Almost all children are breastfed (97 per cent), and 92 per cent start breastfeeding within the first day. Only 6 per cent of mothers use substitute milks. The average duration of breastfeeding is 20 months. Duration of breastfeeding is a determinant of positive nutritional outcomes, and weaning too early is a negative factor.

Not breastfeeding one's child carries stigma. *Exclusive* breastfeeding is only practiced by 43 per cent of children under five months. Most mothers breastfeed exclusively in the initial weeks, but after two months rates diminish quickly. After this 19 per cent of children would be fed breastmilk, alternating either with water (19 per cent), or complemented with other foods (25 per cent). It is common for infants to receive water, porridges and traditional medicines before reaching 6 months of age. Traditional medicines consist of baths, smoke, amulets, or oral decoctions in teas. Traditional medicines are used to cure colic, diarrhoea, as well as 'moon disease' (body pain, convulsions, fevers, constipation, and cough - symptoms that overlap with malaria symptoms). Traditional medicines for breastfeeding babies protects the child from illnesses caused by spirits or harm from sorcerers, as well as enabling the re-initiation of sexual relations with the husband without problem. Decision-making on breastfeeding practices is not solely the responsibility of mothers.

Paternal grandmothers and fathers influence these decisions greatly and should be involved in nutrition communication.

Weaning: Weaning has traditionally been done through the preparation of porridges. As mentioned above, the use of porridges often occurs before the 5th month of life. Babies are often weaned with bland, fermented or non-fermented corn flour porridge, called *papa* or *panihna* in Portuguese. Non-fermented porridges have lower energy and protein content and are at risk of contamination, whereas fermented porridges have higher nutrient content and bioavailability, and are safer to eat. Yet use of these traditional weaning foods is decreasing with urbanisation. Some development interventions aim to promote weaning foods that complement the traditional grain (often corn or millet) porridges with other protein-rich foods grown locally. For example, the WFP is promoting weaning dishes made from pumpkin, cassava and sweet potatoes, and their leaves, yam, and *malambe* yogurt.

8. Recommendations

Health systems

- Health communication must be in local languages, ideally audio messaging, with graphic-heavy visual aids to ensure comprehension.
- Explore alternative forms of biomedical provision such as mobile health clinics, and ensure these are coordinated well with communities, community leaders and traditional healers.
- Engage with alternative health providers (private clinics, community and NGO providers, drug vendors, indigenous doctors and faith-healers) by providing training and tools for the identification of diseases, and create mechanisms for the referral to biomedical centres when necessary. Indigenous doctors and faith-healers can be trusted vehicles for health communication. Beware that faith-healers and *tinyanga* may be opposed to each other and hence should be approached separately.
- Use local language and indigenous causal concepts of diseases (e.g. *nyoka*) in order to communicate more effectively, particularly when biomedical and local ideas resonate, for example ideas of pollution and contamination.
- Facilitate synergistic natural and non-natural care, for example, work with indigenous doctors and faith healers in the administration of complementary treatments, and facilitate spaces for chiefs and healers to redress non-natural causes of disease or misfortune (e.g. offerings to ancestors, purifying rituals to repair breaking of norms or tradition, etc.).
- Protect those who are at risk of being accused of witchcraft or sorcery (e.g. young women in cities).
- Engage with local branches of AMETRAMO and Aprometra, as well as the National Institute for Tropical Medicine (IMT) for community engagement activities
- Work with community care providers including Community Health Agents (ACSs, *Agentes Comunitários de Saúde*) and Community Health Workers (APEs) and Traditional Birth Attendants (TBA). Ensure that they are adequately remunerated and their work is publicly recognized.

Cholera

- Use the local word for cholera in messaging during an outbreak, and communicate the urgency and need to refer to cholera treatment units.
- Identify and work with alternative health providers, helping them identify the symptoms of cholera, and work with them to refer severe cases to hospitals or cholera treatment centres, and to treat mild and moderate cases with purchased or homemade ORS.
- When promoting ORS, where possible, work using the local disease concepts and frameworks and recommend variations on traditional treatments that serve as rehydration solutions.
- Work with local understandings of hygiene, e.g. building on ideas of dirt and pollution to shape hygiene messaging. Use positive measures that convey a feeling of control, appealing to visual and emotional triggers.
- Work with community leaders and trusted individuals to mobilise the population in hygiene prevention measures with them actively and publicly doing hygiene prevention practices (e.g. drinking chlorinated water, having the vaccine).
- Basic WASH infrastructure must be put into place at the same time that hygiene promotion programmes are rolled out.

Malaria

- Use local words for malaria, mosquitoes and other related concepts.
- Communicate the purpose and effectiveness of insecticide spraying, and consider negative and suspicious interpretations of spraying.
- Work with informal health providers, indigenous doctors and faith-healers to identify acute malaria cases and create systems for referral to biomedical centres which build on indigenous treatments of malaria.
- Create spaces and opportunities for communities to ask questions about the disease, its aetiology and its possible treatments and prevention which acknowledge multiple causal models in indigenous frameworks.

Vaccination

- Assess the populations' previous historical experience with vaccination, and clearly explain the side effects and protection rates of the vaccine.
- Communicate clearly who is eligible, information on dosage and potential side effects. Reliable processes to promote vaccination include: government relaying dates for vaccinations to community and block leaders, health care providers, and chiefs, who then make announcements at community gatherings or through mobile brigades, by going door to door to reach parents at home with their children, or through a village secretary.
- Use ideas and local terms and concepts for protection' in messaging for vaccination programmes.
- Radio and mobile units with megaphones are useful tools for vaccine communication, as well as TV in the cities. Hospitals and alternative health providers are also good interlocutors.

Nutrition and feeding practices

- Promote exclusive breastfeeding until 6 months as a way of protecting and strengthening children in local terms.
- Promote the purchase and consumption of a variety of protein-rich local foods, and recover traditional weaning foods (e.g. fermented weaning foods), through communication, livelihood opportunities and social protection programmes.

For references please see the accompanying full report

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