



THE REPUBLIC OF UGANDA

# National One Health Risk Communication Strategy

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## ACRONYMS

CAHW	Community Animal Health Workers
CBO	Community-based Organization
CCHF	Crimean-Congo Hemorrhagic Fever
CDC	Centers for Disease Control and Prevention
CFR	Case Fatality Rate
CSO	Civil Society Organization
EVD	Ebola Virus Disease
FAO	Food and Agriculture Organization of the United Nations
HPAI	Highly Pathogenic Avian Influenza
IGAD	Inter-Governmental Authority on Development
KAP	Knowledge, Attitudes and Practices
LC	Local Council
LPAI	Low Pathogenic Avian Influenza
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MoH	Ministry of Health
MoGLSD	Ministry of Gender, Labour and Social Development
MWE	Ministry of Water and Environment
MVD	Marburg Hemorrhagic Fever
NGO	Non-Governmental Organization
NOHP	National One Health Platform
NOHRCS	National One Health Risk Communication Strategy
NTF	National Task Force
OH	One Health
OHTWG	One Health Technical Working Group
OPM	Office of the Prime Minister
RVF	Rift Valley Fever
SBCC	Social Behavior Change Communication
TV	Television
UWA	Uganda Wildlife Authority
VHF	Viral Hemorrhagic Fever
VHT	Village Health Team
WHO	World Health Organization
ZDCO	Zoonotic Diseases Coordination Office

## FOREWORD

Uganda has recently experienced several outbreaks of emerging and/or re-emerging zoonoses with Plague, Ebola Virus Disease and Anthrax being the most notable; but cases of endemic zoonoses such as Bovine Tuberculosis, Trypanosomiasis, Echinococcosis, Rabies, and Brucellosis are frequently reported. Uganda can thus be categorized as a "hotspot" for emerging and re-emerging zoonotic infections.

In a bid to contextually address these emerging and re-emerging zoonotic diseases, Uganda has embraced the concept of 'One Health' (OH) which recognizes that the health of people is connected to the health of animals and the environment. This has necessitated establishment of a multi-sectoral and multidisciplinary National One Health Platform (NOHP) to effectively manage them. The membership of the NOHP was widened from the four key ministries that include Health; Agriculture and Animal Industry and Fisheries; Water and Environment and Tourism, Wildlife and Antiquities through the Uganda Wildlife Authority (UWA) by forming strategic partnerships with other stakeholders including development partners, Non-Governmental Organisations (NGOs), and academic institutions. Through the guidance of the NOHP, Uganda has developed a One Health Communication Strategy (NOHRCS) which articulates the communication structures and the mandates of the key stakeholders during the implementation of the OH approach. It also provides guidance on how the different sectors will work together to strengthen communication, avoid interference with each other's mandates and build confidence through recognizing complementarity of activities and the power of sharing information and resources.

This NOHRCS is intended to support behavior change efforts at the community level as part of disease preparedness, response, and control. It is aligned to the National One Health Strategic Plan (2018-2022) and responds to two of the five strategic objectives, namely: to strengthen prevention, preparedness and response to zoonotic diseases, antimicrobial resistance and bio-security threats (Objective 3) and to enhance behavior change communication and awareness of the value of One Health approach (Objective 5). It is anticipated that this Strategy will guide multi-sectoral and multidisciplinary risk communication efforts before, during and after disease outbreaks, with a specific focus on Uganda's seven priority zoonotic diseases. Specifically, the NOHRCS framework will provide strategic oversight; quality control; and also coordinate and mobilize resources for the delivery of appropriate risk communication interventions. This will result in timely and effective epidemic response and control of disease outbreaks in the country.

The successful implementation of this Strategy will depend on the joint commitment of the government sectors, stakeholders, partners, communities and individuals at national and sub-national levels.



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The development of the National One Health Risk Communication Strategy has been largely consultative and participatory at national and regional levels. These consultations would not have been possible without the collective effort, involvement and participation of partners.

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Addressing cultural, traditional and religious factors that prevent and affect the response and control of zoonotic disease outbreaks is crucial for effective designing and implementing effective interventions to outbreaks. Therefore, the NOHP are grateful to cultural and traditional leaders, as well as religious leaders for sharing their pearls of wisdom during their participation in the regional consultation workshops.

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## 1.0 INTRODUCTION

### 1.1 Historical Perspective

Over the last 30 years, new infectious agents and diseases affecting humans have emerged at a rate of more than one per year. An estimated 335 emerging infectious diseases were identified between 1940 and 2004. Seventy-five percent of all emerging or re-emerging diseases have been caused by pathogens originating from animals or animal products. These diseases are referred to as zoonotic diseases. Zoonotic diseases (or *Zoonoses* in brief) are diseases that are naturally transmissible between animals (domestic and wildlife) and humans. Around 60% of all human diseases and 75% of emerging infectious diseases are zoonotic (Woolhouse & Gowtage-Sequeria, 2005). In aggregate, zoonoses have high impacts on human health, livelihoods, animals, and ecosystems. In the first global synthesis of the impact of zoonotic diseases, Molyneux et al. (2011) estimated that in the least developed countries, 20% of human sickness and death were due to zoonoses or diseases that recently jumped species from animals to human beings. Besides, 24% of infectious diseases reported in the African Region were zoonotic in nature. Rapid deforestation, mining, hunting and other human activities leading to encroachment into new ecological areas have resulted in the increased interface among domestic, wild animals and humans; this is one of the important drivers of zoonotic diseases.

In Uganda, several outbreaks of emerging/re-emerging zoonoses have recently occurred, with Plague (CDC 2009), Ebola virus disease (Mbonye et al. 2012; WHO 2012a, 2012b) and anthrax (Bazeyo et al. 2009) being the most notable; but cases of endemic zoonoses such as bovine tuberculosis, trypanosomiasis, echinococcosis, rabies, and brucellosis are frequently reported (Fevre et al. 2005; Kasiita et al. 2012; Makita et al. 2008; Oloya et al. 2008; von Wissmann et al. 2014). Uganda can thus be categorized as a "hotspot" for emerging and re-emerging zoonotic infections. It is not surprising therefore that in the last fifteen years; Uganda has had a number of zoonotic disease outbreaks such as Ebola virus disease (EVD), Marburg Virus Disease (MVD), Yellow fever, Crimean Congo hemorrhagic fever (CCHF), pandemic influenza H1N1 and more recently Rift Valley fever (RVF). The latest EVD outbreak was in Kasese June 2019 where three Congolese nationals died. Before that there was a confirmed case in November 2012, in Luweero district about 60 kilometers from Kampala, the capital city of Uganda. This was the fifth recorded EVD outbreak in Uganda with the previous ones occurring in July 2012, in Kibaale district resulting in at least 16 deaths. The first EVD outbreak was reported in the year 2000 in Gulu, Mbarara and Masindi districts in which 425 people were infected and 224 - more than 50% - died (>50% Case fatality rate). EVD surfaced again in 2007 in Bundibugyo and in 2011 in Luweero district. Three outbreaks of MVD in Uganda, the first in Ibanda (2007) the second in Kabale district (2012). Two more incidents of MVD were reported among foreign tourists. One tourist was infected in December 2007 and another one in July 2008 after they had separately visited python caves in Imaramagambo forest in current Rubirizi district. One of the tourists died abroad of MVD in 2008. The latest MVD outbreak happened in Kween and Kapchorwa (2017). In August 2013 an outbreak of CCHF was reported in Agago district with one death reported in Kampala. In 2009 an outbreak of pandemic influenza H1N1 occurred resulting in over 300 cases. However, no deaths were reported.

Besides, there are several endemic zoonotic diseases of major public health concern that have occurred in Uganda including rabies, brucellosis, foodborne parasitosis, and sleeping sickness. Uganda is the only country in the world with both *Trypanosoma brucei gambiense* and *T.B rhodesiense*;

the two forms of sleeping sickness. Another serious concern is that these two forms hitherto occurring in different foci are threatening to merge in the same geographical areas. Sporadic zoonoses such as anthrax have also been reported in the country during the last 10 years in wildlife mainly affecting hippopotami and zebras in conservation areas in 2004 and 2010 and in cattle in 2010/11 and 2017/18. Sporadic plague outbreaks were common in the 1990s and 2000s but have now reduced in frequency and extent after a “One Health” Approach was implemented with closer collaboration between human, animal and wildlife sectors. In communities neighboring national parks, there is a further risk of zoonotic disease spill-over from wildlife to humans directly, or from wildlife to domestic animals and then to humans (Calvignac-Spencer et al. 2012). Studies have shown a general lack of knowledge about zoonotic diseases among people who are most vulnerable to them, including their transmission and prevention. For instance, a study in Tanzania among livestock keeping communities revealed that households practiced at least one risk activity for transmission of zoonoses, there was general lack of knowledge about the diseases (Shirima et al. 2003). In Uganda, a recent study among pastoral communities of Nyabushozi, Kiruhura district, showed only a moderate general knowledge of the endemic disease, brucellosis (Kansiime et al. 2014). These findings call for a need for health education campaigns to educate the population about the known risk factors for acquisition of zoonotic diseases, including what the people can do to control them when they eventually occur. Hence, the need for a health communication strategy to address these risks.

## **1.2 Knowledge, Attitudes and Practices Regarding Zoonotic Diseases in Uganda**

The design of a communication strategy is strongly informed by the knowledge, attitudes, and practices of the population at risk. In line with this observation, we conducted a review of the literature to identify people’s knowledge about zoonotic diseases in general and knowledge of specific zoonotic diseases, including how they are transmitted from animals to humans, their signs and symptoms, as well as their causative agents. The findings provided (baseline data) the basis upon which the success of the communication strategy will be evaluated. These findings were also crucial in the design of health risk messages since no Knowledge, Attitudes, and Practices (KAP) study was conducted prior to the development of this strategy.

### **1.2.1 Knowledge of zoonotic diseases among human health workers**

Health workers are key stakeholders in the management and control of zoonotic diseases. Despite this role, available evidence suggests that there is generally poor knowledge of zoonotic diseases among human health workers. In a study of 140 health workers’ knowledge of zoonotic diseases in an endemic region of Western Uganda, Asiimwe et al. (2018) found that majority (81.4%, n=114) had ever heard about zoonoses. The most accurately identified zoonoses were anthrax (91.4%, n=128) closely followed by rabies (90%, n=126). Up to 12.8% (n=18) thought that HIV was a zoonotic. There was poor overall knowledge of the endemic disease brucellosis among all the participants, where only 1.4% (n=2) knew its causative agent, clinical symptoms and transmission. There was a total lack of knowledge (0%) among health workers about anthrax and Ebola. None of the 140 health workers knew all the three aspects required to be knowledgeable for each of the two diseases. Although some of the zoonotic diseases have occurred more frequently than others, overall knowledge of zoonotic diseases among health workers remains generally low.

### 1.2.2 Knowledge of, attitudes about and practices regarding zoonotic diseases in the general population

The following sub-sections present knowledge, attitudes, and practices regarding each of the seven priority zoonotic diseases.

- a) ***Anthrax***: Anthrax is an infection caused by bacteria called *Bacillus anthracis*. People can get sick with anthrax if they come in contact with infected animals or contaminated animal products. Globally, community knowledge about anthrax is limited to arid areas where outbreaks are common (Hoffmann et al. 2017). In a study conducted to assess awareness and attitudes towards anthrax and meat consumption practices among affected communities in Zambia, Sitali et al. (2017) found that 85.1% were aware that anthrax is transmitted by eating infected meat and 64.2% knew that animals and humans can be infected with anthrax. However, while 82% of respondents indicated that they reported animal deaths to veterinary officers, only 13.5% of respondents buried infected carcasses. The majority (78.1%) of respondents ate, sold or shared meat from dead animals with other community members. Similar findings were reported in a One-Health, participatory epidemiology study of anthrax management in Kasese and Sheema districts in western Uganda (Coffin et al. 2015). Coffin observed that the complex connections between social needs and the economic context of these communities seem to undermine current anthrax control and education measures. Strategies employed to offset losses and avoid quarantine or infection included quick sales of suspect animals and “over-cooking” or smoking suspect meat to “make it safer” which, unfortunately, do not reduce the risk of contracting the disease. Even those with full knowledge of disease risks and the value of reporting preferred to manage risk in their own creative ways such as burning suspect animal carcasses with petrol.
- b) ***Zoonotic Influenza Viruses***: Zoonotic influenza viruses are influenza type A viruses that are transmitted from animals to humans and rarely transmitted from human to human. Examples of zoonotic influenza include *avian influenza*, also known as “bird flu”, and *swine influenza*, also known as “swine flu”. Avian influenza or bird flu is a disease caused by a virus that occurs naturally among birds and at times infects pigs. The virus spreads easily in poultry like chicken, ducks, and turkeys. If infected, birds get very sick and can die rapidly. Sometimes this virus can also infect humans. In 2017, Uganda faced its first-ever reported outbreak of highly pathogenic avian influenza in migratory birds when about 10,000 white-winged black terns died unexpectedly in the Lake Victoria island and lakeshore districts of Kalangala, Masaka, and Wakiso. There are virtually no studies that have been done to assess people’s knowledge, attitudes, and practices regarding avian influenza. However, evidence from a few behavioral and epidemiological studies provides some insight into people’s practices that may predispose them to the risk of contracting avian influenza. For instance, a study conducted in 108 live bird markets in 37 districts of Uganda found that dead birds were disposed of in the open and birds were introduced in the markets without initial quarantine (Kirunda et al. 2014). A high proportion of markets (86.1%) lacked a dedicated site for unloading of birds or a program for disinfection (99.1%). Ninety-four percent of the markets had dirty feed/water troughs, 97.2% were accessed by stray animals; 96.3% had sick and healthy birds sold together while 86.1% had different species of birds sold together (Kirunda et al. 2014). These practices increase the risk of spreading and/or contracting avian influenza by market workers and other people who interact with them, e.g. poultry buyers.

- c) **Viral Hemorrhagic Fevers:** Viral hemorrhagic fevers (VHFs) are a diverse group of animal and human illnesses in which fever and hemorrhage (bleeding) are caused by a viral infection. These illnesses include EVD, MVD, CCHF, and RVF, among others. There are no studies that have explored knowledge, attitudes, and practices regarding CCHF and RVF in Uganda. However, since EVD and MVD have occurred more frequently than the others, many people report that they have ever heard of them. In a study conducted to assess community knowledge and attitudes about EVD and MVD diseases in Luweero, Ibanda and Kamwenge districts (districts that have suffered from frequent outbreaks of EVD and MVD) in Uganda, Nyakarahuka et al. (2017) found that 96.2% of 740 respondents had ever heard of the two diseases. However, when the team assessed knowledge of disease causation, modes of transmission and clinical manifestations, only 48.5% (n=359) were categorized as being knowledgeable about the two diseases. Worse still, only 43.5% of those who were knowledgeable about Ebola and Marburg knew the signs and symptoms of the two diseases.

When the questions were zeroed down to modes of EVD and MVD transmission specifically, Nyakarahuka et al. (2017) found that slightly more than half (51%) of respondents knew how Ebola and Marburg diseases are transmitted: 54.2% reported body contact with an infected person, 30.3% mentioned contact with infected animals, 25.1% mentioned contact with body fluids of a sick person, while 22.9% mentioned contact with a person who died of the disease. These findings suggest that knowledge of the modes of EVD and MVD transmission is fairly high, although misconceptions still abound. For instance, 16.9% thought that both diseases can be transmitted through the air. Other studies have found that EVD survivors often experience fear, ostracism, and stigmatization from their community (Matua & Wal 2015; Nyakarahuka et al. 2017). For instance, Nyakarahuka et al. (2017) found that 52.7% (n=386) of respondents would not relate with a survivor of EVD or MVD largely because of fear of contracting the disease from them. Indeed, in qualitative interviews conducted as part of the same study, participants indicated that they did not believe that a person who has suffered from EVD or MVD can heal completely unless they have seen a letter from a health officer or another health authority saying that they have fully recovered. It is probably for this reason that a quarter of the participants (24.7%, n=182) would not welcome a survivor of EVD or MVD back into their community (Nyakarahuka et al. 2017). In an earlier study, de Vries et al. (2016) found that Ebola or Marburg outbreaks are usually characterized by anger and fear among community members, and that Ebola or Marburg patients tend to run away from hospitals in search of spiritual healing as they associate EVD or MVD with witchcraft also locally known as “*amayembe*”. These actions are counterproductive towards efforts to control the spread of VHFs.

- d) **Brucellosis:** Brucellosis is a disease caused by a group of bacteria from the genus *Brucella*. These bacteria can infect both humans and animals. Brucellosis is often spread when people eat contaminated food, which can include raw meat and unpasteurized milk. The bacteria can also be spread through the air or contact with an open wound. There are not many studies that have explored knowledge, attitudes, and practices regarding brucellosis in Uganda. However, evidence from a few studies conducted on this subject (particularly in districts that have had multiple Brucellosis disease outbreaks) suggests that many people have ever heard about the disease and know some of its signs and symptoms. In a study conducted to assess knowledge and perceptions of brucellosis in the pastoral communities adjacent to Lake Mburo National Park in Kiruhura district, south-western Uganda, Kansiime et al. (2014) found that 99.3% (n=370) had

ever heard about brucellosis. Of these, 222 (59.8%) reported that they had a household member who had ever suffered from the disease. Two-thirds of the participants (67.7%,  $n=251$ ) mentioned that close proximity to wild animals is the major factor that contributes to the increase of brucellosis in the study areas. The main source of information was from friends (42.4%), health workers (19.7%) and the media (10.3%) in that order.

Kansiime et al. (2014) found that, overall, slightly more than half (53.1%,  $n=197$ ) of the participants had a *moderate* overall knowledge on brucellosis symptoms, transmission, treatment, prevention and associated risk factors in human beings. However, 81% ( $n=299$ ) participants did not know about the symptoms of brucellosis in animals although three-quarters of participants (75.2%,  $n=279$ ) mentioned joint and muscle pain as the major symptom of brucellosis in humans. When asked about the modes of transmission from animals to humans, majority of participants mentioned consumption of unpasteurized dairy products, especially milk (97%,  $n=360$ ) and eating of raw or half-cooked meat (91.4%,  $n=333$ ). When asked what can be done to protect people from contracting brucellosis, two main methods were mentioned: 98.8% ( $n=330$ ) reported pasteurization of dairy products while 95.5% ( $n=319$ ) mentioned proper cooking of meat. Regarding how transmission of brucellosis can be prevented from spreading from one animal to the other, 67.9% ( $n=230$ ) mentioned isolation of infected animals from healthy ones (although majority said this is not usually practiced because of limited land) while 57.2% ( $n=194$ ) mentioned testing to identify infected animals before mating and artificial insemination (Kansiime et al. 2014). In an earlier study conducted in Kampala by Makita et al. (2008), participants attributed infection with *Brucella* to consumption of raw milk transported from rural and peri-urban areas. Makita et al. (2008) found that females and slum dwellers were more likely to contract brucellosis than their counterparts. While no reasons were given for slum dwellers, a study by Kansiime et al. (2015) supported the finding that females were more likely to contract the disease than men. This finding may be attributed to the specific gender roles in households in the Ugandan setting. For example, Ugandan females are more involved in the handling of milk and other dairy products, which are transmission routes for the disease.

- e) **Human African Trypanosomiasis:** Human African Trypanosomiasis (HAT), also known as “sleeping sickness,” is caused by microscopic parasites of the species *Trypanosoma brucei*. It is transmitted by the tsetse fly (*Glossina* species), which is found only in rural Africa. Similar to the other diseases, only a handful of studies have explored people’s knowledge, attitudes, and practices relating to Human African Trypanosomiasis in Uganda. For instance, in one study conducted at the Kenya-Uganda trans-boundary, Rutto et al. (2013) found that 97.9% of the people on the Kenyan side ( $n=376$ ) and 82.7% of the people on the Ugandan side ( $n=317$ ) knew the cause of Human African Trypanosomiasis as tsetse flies. This was likely because the study was conducted in tsetse flies endemic areas. Rutto et al. (2013) found that male adults (28.4%) were at a higher risk of contracting the disease than their female counterparts (22.9%). This is because men engage in activities (e.g. herding animals) which are performed in habitats that are conducive for tsetse flies infestation. Indeed, Rutto et al. (2013) found that individuals involved in looking after livestock (51.8%) were at greatest risk of contracting the disease compared to other groups (14.2% among those bathing at the river and 10.6% among those involved in fishing). The study identified cultural practices related to marriage as a risk factor for infection with Human African Trypanosomiasis: these involve the bride and her age-mates hiding in the bushes to be offered gifts before being presented to the groom’s home, which increases their exposure to tsetse fly

bites. Inadequate knowledge among health workers on the cycle and intervention measures have been cited to contribute to recurrent outbreaks of Human African trypanosomiasis (Rutto et al. 2013; Acup et al. 2017). This has been attributed to the lack of formal training of health workers about zoonotic diseases (Acup et al. 2017).

- f) **Plague:** Plague is an infectious disease caused by the bacterium *Yersinia pestis*, a zoonotic bacterium usually found in small mammals and their fleas. It is transmitted between animals by infected fleas. Humans can be infected by the bite of infected fleas, through direct contact with infected materials or by inhalation. Plague is less-studied of the seven priority zoonotic diseases. So, there is little scholarly work in the extant literature. Nevertheless, in a study that assessed the knowledge and practices related to plague among 420 participants in West Nile, a plague-endemic area of Uganda, Krugeler et al. (2017) found that 84% were able to correctly describe plague symptoms. Approx. 75% of the respondents linked plague with fleas and rats dying in large numbers. Overall, family members and friends were the most commonly reported source of information on plague (53%). Radio (37%), health clinics (32%) and village health workers (32%) were the other sources of information mentioned. In East Africa, economic, social, cultural and environmental practices have been linked to the plague outbreaks in the region (Krugeler et al. 2017).
- g) **Rabies:** Rabies is an infectious viral disease that is almost always fatal following the onset of clinical symptoms. In up to 99% of cases, domestic dogs are responsible for rabies virus transmission to humans. Yet, rabies can affect both domestic and wild animals. It is spread to people through bites or scratches, usually via saliva. A knowledge, attitudes, and practices survey conducted by Wallace et al. (2017) to understand dog population, rabies vaccination, and human rabies risk factors in Uganda estimated that there were 175 owned dogs in Kampala, Wakiso, Mbale, Kabarole and Bundibugyo districts combined. Of these, **only 55.6% (n=99) of the dogs had a history of vaccination**; still below the target for effective herd immunity (70%). Overall, **74.3% of the dogs were allowed to roam freely to some degree**, which increases their ability to bite human beings and infect them with rabies if they are already rabid. On average 52.4% of dog-owning households reported owning at least one dog that was not vaccinated against rabies (range 0–56.7%). In another study that assessed the long-term trends and spatial distribution of animal bite injuries and deaths due to human rabies infection in Uganda between 2001 and 2015, Masiira et al. (2018) found that **males and persons aged above five years were significantly more likely to have been bitten by animals** (59% and 81%, respectively) than their counterparts. Males were more likely to be bitten by animals because they usually engage in activities that involve close interaction with dogs such as hunting and herding. On the other hand, children are at higher risk of rabies because they often play with animals; are more likely to receive a bite to the face or neck and may not report bites or scratches received during play. Four hundred eighty-six suspected rabies deaths were documented in the study conducted by Masiira and his colleagues.

An earlier study of the epidemiology of animal bite injuries in Uganda by Fevre et al. (2005) found that **94% (n=480) of respondents with a history of animal bite injuries were bitten by dogs** and that **in 77% of cases, the biting dog was suspected to be rabid either because of its strange behavior or the fact that it had subsequently died** (34% of the biting dogs were reported to have eventually died). Forty percent (n=202) of the participants reported that the biting animal had subsequently bitten at least one other person. It is generally recommended that the biting animal

is reported to animal health officials and observed for 10 days to determine whether it has rabies (WHO 1992). Despite this recommendation, **only 23% of participants reported the biting animal to a veterinary officer**. Regarding the recommended practices after an animal bite, Fevre et al. (2005) found that only **63%** (n=319) of those who had ever been bitten by animals **washed the wound prior to presentation at the health center**; of these, 231 (72%) used soap. The use of soap in washing animal bite wounds as a means of inactivating the virus at the bite site is a WHO recommendation (WHO 1992). Fevre et al. (2005) found that individuals with a history of animal bite injuries took an average of two days, from the time they were injured, to report to a health center (range: 0-327 days). Almost 40% of all bites recorded in this study were inflicted on children below 10 years of age.

## **2.0 DEVELOPMENT OF THE NATIONAL ONE HEALTH RISK COMMUNICATION STRATEGY**

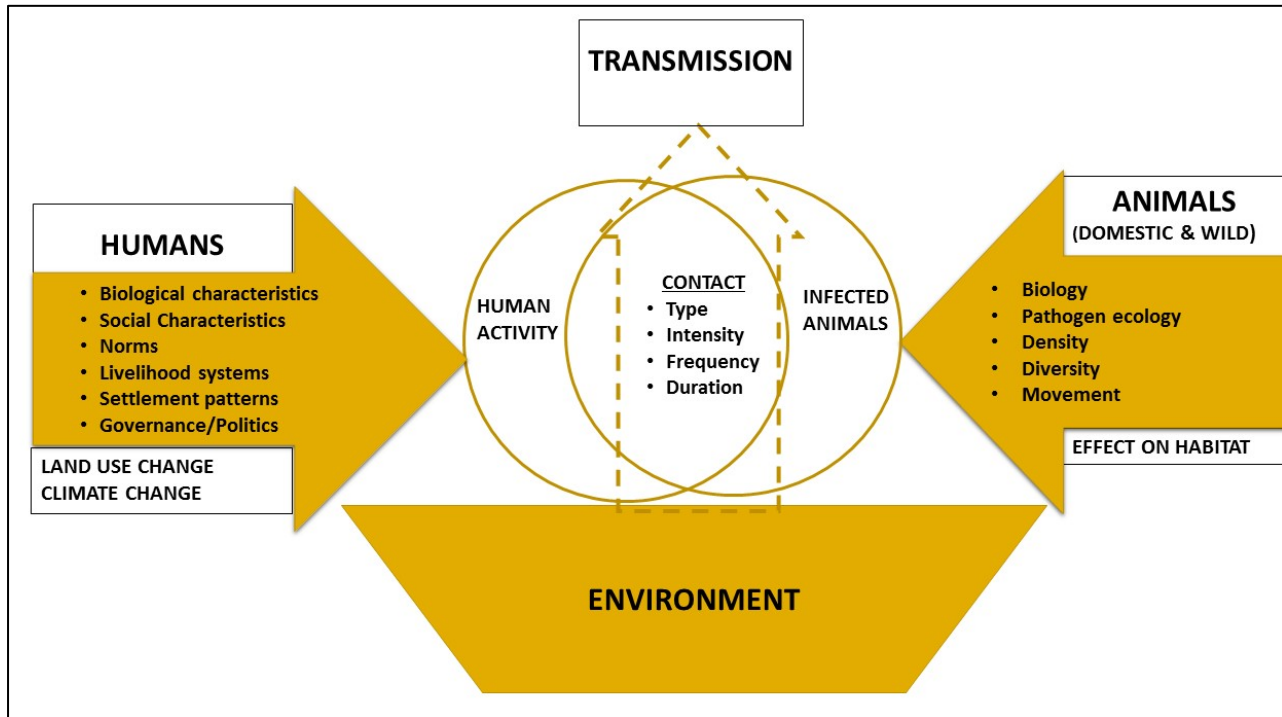
The process of developing the One Health Risk Communication Strategy combined extensive literature reviews on the seven priority zoonotic diseases and consultations at national and regional levels. At the national level, participants were drawn from the respective sectors that constitute the National One Health Platform (NOHP). These include the Ministry of Health; Ministry of Agriculture, Animal Industry and Fisheries; Ministry of Water and Environment, and Uganda Wildlife Authority; donor agencies and civil society. At the regions, the consultations drew adequate representations from district technical and political leadership, civil society organizations, traditional and religious leaders, women and youth groups and the media fraternity. Seven regional consultation meetings were conducted in Mbarara, Gulu, Arua, Moroto, Mbale and Fort Portal. This strategy is built on key deliberations obtained from both regional and national-level consultations, augmented with existing literature. This One Health Risk Communication Strategy has been reviewed by One Health Partners.



### 3.0 THEORETICAL FRAMEWORK FOR THE RISK COMMUNICATION STRATEGY

This risk communication strategy will be informed by the Expanded One-Health Model of Zoonotic Disease Transmission adopted from the work by Woldehanna and Zimicki (2015) [Figure 1].

Figure 1: Expanded One-Health Model Of Zoonotic Disease Transmission



The expanded one-health model of zoonotic disease transmission presumes that the probability of zoonotic disease spillover is a function of contact between humans engaging in different activities and infected animals they encounter during those activities (Woldehanna & Zimicki, 2015). From the animal side, the probability of transmission to humans is primarily affected by the prevalence of infected animals, which could be wild or domestic. On the human side of the model, the probability of spillover transmission from animals is primarily affected by the likelihood of someone encountering an infected animal or its excreta, determined by the frequency with which people come in contact with specific types of animals that might carry infections and the type of contact they have with animals; that is, by the types of activities in which they engage.

Complex social dynamics determine the type and frequency of engagement of any individual, family or community in specific activities involving possible interactions with animals, as well as the intensity of interactions and thus potential exposure to pathogens. At the simplest level, socially-determined roles for individuals of a specific gender, age and education affect both the range of possible occupations and division of labor; for instance, women may cook and men slaughter. Individuals engaged in occupations related to animals (hunting, butchering and caring for animals, etc.) or working in agricultural areas or forests are obviously at increased risk compared to the general population. Household characteristics, including family structures and socio-economic status, can determine if and how families are exposed. These relationships can be complex. For example, while families that hunt for food tend to be poorer and less educated than families that purchase food, poverty is a predictor of only one kind of interaction with specific types of wild animals. Wild animal

meat purchased in markets is frequently more expensive than domestic animal meat. These complex notions of exposure leave humans at risk of zoonotic diseases that the risk communication strategy strives to address through emergency preparedness and response.

## 4.0 FOCUS, PURPOSE, AIMS, OBJECTIVES AND GUIDING PRINCIPLES

### 4.1 Focus of the National One Health Risk Communication Strategy

This National One Health Risk Communication Strategy is intended to support behavior change efforts at national and community level as part of disease preparedness, response and control. It is aligned with the One Health Strategic Plan (2018-2022) and responds to two of the five strategic objectives, namely: to strengthen prevention, preparedness and response to zoonotic diseases, antimicrobial resistance and bio-security threats (*objective 3*) and to enhance behavior change communication and awareness of the value of One Health approach (*objective 5*). The One Health Strategic Plan places emphasis on seven priority zoonotic diseases that were prioritized in March 2017 using the United States Centers for Disease Control and Prevention (CDC) One Health Zoonotic Diseases Prioritization Tool. The five criteria used to prioritize and rank the zoonotic diseases included: 1) Severity of disease in humans, 2) Availability of effective control strategies, 3) Potential to cause an epidemic or pandemic in humans or animals, 4) Social and economic impact and 5) Bioterrorism potential. These criteria yielded seven priority zoonoses: *Anthrax, Zoonotic Influenza Viruses, Viral Hemorrhagic Fevers, Brucellosis, African Trypanosomiasis, Plague and Rabies*. For Uganda, these are zoonotic diseases whose prevention, early detection and response can be effectively implemented through application of One Health principles.

### 4.2 Purpose of the National One Health Risk Communication Strategy

Until recently, each of the four sectors that form the National One Health Platform had their own arrangements for dealing with outbreaks. However, the establishment of the National One Health Platform will address this anomaly by making it a requirement that all communications pertaining to all disease outbreaks be centrally handled by this coordinating entity. The purpose of the One Health Risk Communication Strategy is to provide the framework that will guide communication efforts before, during and after disease outbreaks to achieve timely and effective epidemic response and control at all levels.

### 4.3 Aims and Objectives of the National One Health Risk Communication Strategy

#### 4.3.1 Aims

The overall programmatic goal of this strategy is to contribute to the implementation of the National One Health Strategic Plan of building resilient, sustainable systems that can prevent, detect and respond to zoonotic diseases in a timely manner.

#### 4.3.2 Communication Objectives

The overall all arching strategic objectives of this strategy are to:

- a) To ensure that communication and social mobilization interventions implemented by the government; donors; international and local civil society organizations; the media and private sectors are effectively coordinated
- b) To strengthen strategic risk communication information and knowledge management systems to improve preparedness, response and recovery of disease outbreaks at all levels
- c) To strengthen the institutional and technical risk communication capacities of organizations and implementing partners at different levels

- d) To improve access by population to evidence-based messages and information to enable them to make informed decisions to protect themselves, their peers and their communities
- e) To establish functional coordination mechanisms which bring together government; donors; international and local civil society organizations; the media and private sectors and communities for effective preparedness and response interventions to outbreaks of zoonotic diseases.

### 4.3.3 Communication Objectives

This strategy is intended to achieve the following risk communication objectives:

- f) To equip individuals, families and communities with knowledge and skills necessary to protect themselves before, during and after outbreaks of zoonotic diseases
- g) To increase the proportion of the population that seeks prompt medical treatment when they contract any of the seven priority zoonotic diseases
- h) To increase the proportion of the population that rejects risky behavioral, cultural and religious practices that propagate the outbreak
- i) To increase the proportion of the population that accept people who have suffered from any of the seven priority zoonotic diseases

## 4.4 Guiding Principles and Cardinal Rules of Risk Communication

### 4.4.1 Guiding Principles

Effective risk communication aims to offer correct and consistent information needed by the public on a timely basis. This helps to address any harmful behaviors that occur before, during and after a disease outbreak. Risk communication, as envisaged in this strategy, should be implemented with the following guiding principles:

- a. **Be First:** Crises are time-sensitive. Communicating information quickly is almost always important. For members of the public, the first source of information often becomes the preferred source.
- b. **Be Right:** Accuracy establishes credibility. Information can include what is known, what is not known, and what is being done to fill in the gaps.
- c. **Be Credible:** Honesty and truthfulness should not be compromised during crises.
- d. **Express Empathy:** Crises create harm, and the suffering should be acknowledged in words. Addressing what people are feeling, and the challenges they face builds trust and rapport.
- e. **Promote Action:** Giving people meaningful doable actions calms anxiety, helps restore order, and promotes a restored sense of control.
- f. **Show Respect:** Respectful communication is particularly important when people feel vulnerable. Respectful communication promotes cooperation.
- g. **Plan early:** To be effective, outbreak communication cannot be a last-minute, add-on feature to announce decisions. Central features include answering questions such as: *What needs to be done? Who needs to know? Who is the spokesperson? What agency has the lead? And who needs to act?* These steps are also placed in context, so they are linked to other ministries and, if need be, the international community. This does not mean that outbreak communication which has not been planned is doomed to failure. Trust, for example, can develop during an outbreak. But it is far easier to build trust before it is needed.

#### 4.4.2 The Seven Cardinal Rules of Risk Communication

Risk communicators should take the following cardinal rules into consideration when communicating to the public during the time of the outbreak. These rules have been adopted from the Environmental Protection Agency's Seven Cardinal Rules of Risk Communication<sup>1</sup>:

**a. *Accept and involve the public as a legitimate partner.*** Two basic tenets of risk communication in a democracy are generally understood and accepted. First, people and communities have a right to participate in decisions that affect their lives, their property, and the things they value. Second, the goal should be to produce an informed public that is involved, interested, reasonable, thoughtful, solution-oriented, and collaborative. You should not try to diffuse public concerns and avoid action.

*Guidelines:* Demonstrate respect for the public by involving the community early, before important decisions are made. Clarify that decisions about risks will be based not only on the magnitude of the risk but on factors of concern to the public. Involve all parties that have an interest or a stake in the particular risk in question. Adhere to the highest moral and ethical standards: recognize that people hold you accountable.

**b. *Listen to the audience.*** People are often more concerned about issues such as trust, credibility, control, benefits, competence, voluntariness, fairness, empathy, caring, courtesy, and compassion. They are not as interested in mortality statistics and the details of a quantitative risk assessment. If your audience feels or perceives that they are not being heard, they cannot be expected to listen. Effective risk communication is a dialogical/two-way activity that must give the people space to express their concerns and recommendations for preparing and/or responding to an outbreak.

*Guidelines:* Do not make assumptions about what people know, think or want to be done about risks. Take time to find out what people think: use techniques such as individual interviews or focus group discussions. Let all parties that have an interest or a stake in the issue be heard. Identify with your audience and try to put yourself in their place. Recognize people's emotions. Let people know that what they said has been understood, addressing their concerns as well as yours.

**c. *Be honest, frank, and open.*** Before a risk communication message can be accepted, the messenger must be perceived as trustworthy and credible. Therefore, the first goal is to establish trust and credibility. Short-term judgments of trust and credibility are based largely on verbal and nonverbal communications. Long-term judgments are based largely on actions and performance. Once made, trust and credibility judgments are resistant to change. In communicating risk information, these are your most precious assets. Once lost, they are difficult to regain.

*Guidelines:* If an answer is unknown or uncertain, express willingness to get back to the questioner with answers. Make corrections if errors are made. Disclose risk information as soon as possible, emphasizing appropriate reservations about reliability (This will prevent rumors, myths, misconceptions, and misinformation). Do not minimize or exaggerate the level of risk, for research has shown that negative messages that invoke extreme fear and hopelessness may not trigger positive behavior change required. Speculate only with great caution. If in doubt, lean toward

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<sup>1</sup> Available at: [https://archive.epa.gov/care/web/pdf/7\\_cardinal\\_rules.pdf](https://archive.epa.gov/care/web/pdf/7_cardinal_rules.pdf). Accessed: December 3, 2018

sharing more information, not less - or people may think something significant is being hidden. Discuss data uncertainties, strengths, and weaknesses - including the ones identified by other credible sources. Identify worst-case estimates as such and cite ranges of risk estimates when appropriate.

- d. Coordinate and collaborate with other credible sources.* Allies can be effective in helping communicate risk information. Few things make risk communication more difficult than public conflicts with other credible sources.

*Guidelines:* Take time to coordinate all communications among and within organizations. Devote effort and resources to the slow, hard work of building bridges, partnerships, and alliances with other organizations. Use credible and authoritative intermediaries. Consult with others to determine who is best able to answer questions about risk. Try to release communications jointly with other trustworthy sources. This will reduce confusion arising from parallel communications, especially if each sector decided to issue their own communication.

- e. Meet the needs of the media.* The media personnel are primary transmitters of risk information. They play a critical role in setting agendas and in determining outcomes. As primary transmitters, they act as the primary source of information to the public before, during and after the outbreaks. It is important that the media does not politicize or sensationalize the crisis but report accurately.

*Guidelines:* Be open with and accessible to reporters. Respect their deadlines. Provide information tailored to the needs of each type of media, such as sound bites, graphics and other visual aids for television. Agree with the reporter in advance about the specific topic of the interview; stick to the topic in the interview. Prepare a limited number of positive key messages in advance and repeat the messages several times during the interview. Provide background material (and examples) on complex risk issues. Do not speculate. Say only those things that you are willing to have repeated: everything you say in an interview is on the record. Keep interviews short. Follow up on stories with praise or criticism, as warranted. Try to establish long-term relationships of trust with specific editors and reporters.

- f. Speak clearly and with compassion.* Technical language and jargon are barriers to successful communication with the public. In low-trust, high-concern situations, empathy and caring carry more weight than numbers and technical facts. Thus, strive to use general messages for the wide population and relevant messages to specific groups.

*Guidelines:* Use clear, non-technical language. Be sensitive to local norms, such as speech and dress. Strive for brevity, but respect people's information needs and offer to provide more information. Use graphics and other pictorial material to clarify messages. Personalize risk data: use stories, examples, and anecdotes that make technical data come alive. Avoid distant, abstract, unfeeling language about deaths, injuries, and illnesses. Acknowledge and respond (both in words and with actions) to emotions that people express, such as anxiety, fear, anger, outrage, and helplessness. Acknowledge and respond to the distinctions that the public views as important in evaluating risks. Use risk comparisons to help put risks in perspective, but avoid comparisons that ignore distinctions that people consider important. Always try to include a discussion of actions that are underway or can be taken. Promise only that which can be delivered and follow

through. Acknowledge, and say, that any illness, injury or death is a tragedy that should be avoided.

- g. Plan carefully and evaluate performance.* Different goals, audiences and media require different risk communication strategies. These aspects need to be in-built by establishing quality control systems and structures especially for the messages and communication materials developed and disseminated. Risk communication will be successful only if it is carefully planned and evaluated.

*Guidelines:* Begin with clear, explicit objectives - such as providing information to the public, providing reassurance, encouraging protective action and behavior change, stimulating emergency response, or involving stakeholders in dialogue and joint problem-solving. Evaluate technical information about risks and know its strengths and weaknesses. Identify important stakeholders and subgroups within the audience. Aim communications at specific stakeholders and subgroups in the audience. Recruit spokespersons with effective presentation and human interaction skills. Train staff - including technical staff - in communication skills: recognize and reward outstanding performance. Pretest messages. Carefully evaluate efforts and learn from mistakes.

#### **4.5 Capacity Building is Crucial for Sustained Risk Communication Efforts**

The behavior change results sought through this communication strategy require sustainable interventions. Sustained communication is vital to secure vigilance against zoonotic diseases and any other emerging and re-emerging diseases. Critical to ensuring sustainability and providing effective communication during an outbreak is the need for building communication capacity and strategic partnerships in risk communication interventions. Appointed spokespersons, senior officials, relevant technical personnel, field workers, and the media will need to be further equipped to communicate effectively in response to the sudden, intensified and/or sustained demand for information.

#### **4.6 Need for a Risk Communication Spokesperson**

The most important role in responding to a crisis is the formal, designated spokesperson. The spokesperson brings the organization to life. He or she embodies the organization and personifies the response. A spokesperson takes the organization from an “it” to a “we” and is a critical human connection to the various audiences. In an ideal world, every organization would have a caring and articulate spokesperson who exhibits charisma and confidence. In many cases, there is little choice about who ultimately speaks for the organization during a crisis. One thing the communication staff can control is to insist that spokespersons are trained. Few people are born crisis spokespersons. In a crisis, even the most skilled communicator can make mistakes. No person should represent the entire organization in these situations unless he or she has invested time and energy in developing the appropriate skills. What is important is not how a person looks on television but the ability to effectively connect with the audience, either using the media or in person. Spokespersons allow the public to put a face to the act of responding to, investigating, and resolving a crisis. How a spokesperson handles public and media inquiries, in addition to what he or she says, helps establish credibility for an organization. It also contributes to the public’s transition from the crisis stage to resolution and recovery stages. An organization should carefully choose spokespersons. The selection



should be based on the individual's familiarity with the subject matter and his or her ability to talk about it in a way that is understandable and conveys confidence. Underlying the 'One Health' concept is the need to identify spokespersons from the human and animal health sector so that these two can supplement each other.

### ***Role of the spokesperson***

The spokesperson during an emergency should communicate information that the public wants or needs to hear. This information should empower people, build trust, and reduce the level of harm. This includes short-term and long-term psychological and physical harm. The spokesperson should seek to accomplish several goals and be prepared to respond to a variety of questions, such as the following:

- What is the incident and how severe is its magnitude (e.g., who, what, where, when, why, and how)?
- What are the health and safety risks for individuals and communities?
- Who is managing the event and what are they doing to respond to the incident?

The spokesperson can orient the larger audience at the beginning of a response by following these suggestions:

- Establish an appropriate level of concern and empathy, which can help create rapport with the audience.
- Remain calm while acknowledging uncertainty and avoiding the tendency to over-reassure.
- Show competence and consistency in responding to help build confidence and trust.
- Demonstrate openness and transparency.
- Panic is less common than most people imagine and does not come from bad news but from mixed messages or a feeling that people are not being told the truth.



## 5.0 NATIONAL ONE HEALTH RISK COMMUNICATION STRATEGY

Different diseases have different audiences and require different messages and channels of communication. To address this variety of needs, the strategy presents disease-specific aspects pertaining to target audiences, key messages and channels of communication. It is important to note that the strategy does not attempt to provide information on all audiences but uses selected target audiences to present the messages and channels of communication that pertain to the specific disease in question. The presentation of messages has been stratified to respond to the need to have messages during the preparedness, response and recovery phases of an outbreak.

### 5.1 Audience Types

Like in all communication efforts, this strategy focuses on three audience types, namely:

- a) **Primary audience:** A primary audience refers to people or groups of people who are directly affected by the disease. These include members of the general population; heads of households or families with individuals suspected to have the diseases; individuals who are suspected or those who have been confirmed to have the disease; and other categories of people at risk of contracting the disease including children, students, youth and health workers, among others.
- b) **Secondary audience:** A secondary audience refers to people or a group of people who influence the primary audience to act in a certain way. This audience includes influential and respected community members who shape normative behaviors such as cultural and religious practices. While this segment of the population tends to be smaller than the primary audience, their collective influence helps to reinforce preventive measures.
- c) **Tertiary audience:** Tertiary audiences are those who influence the secondary actors in the decision-making process in promoting protective norms at the community level. In Uganda, these include District Health Management Teams, District Social Mobilization Teams, District Councils and members of the Civil Society. While this audience is far removed from taking the immediate actions necessary to curtail the outbreaks, it can influence important decisions affecting the promotion of preventive measures before, during and after the outbreaks.

### 5.2 Phases of Outbreak Response and Control

This strategy recognizes the need to focus on the three phases of outbreak response and control including the preparedness phase; the response phase, and the recovery phase.

- a) **Preparedness phase:** The preparedness phase is the phase before the outbreak occurs, also known as the pre-epidemic or pre-outbreak period. During this period, risk communicators should focus on some of the following aspects:
  - Mobilize and sensitize the communities
  - Educate the public about the risks.
  - Prepare the public for the possibility of an adverse event.
  - Increase self-efficacy by suggesting actions that reduce the likelihood of harm.
  - Provide warning messages regarding an imminent threat.

- Collaborate and cooperate by developing alliances with agencies, organizations, and groups.
- Develop consensus recommendations by experts and first responders.
- Create messages and test them for use in later stages.

b) **Response phase:** The response phase can be divided into two sub-phases: the *initial phase* (when the outbreak has just occurred) and the *maintenance phase* (when the disease is getting under control). During the *initial phase*, the focus is on providing information to the affected groups so that they know what to do to reduce rumors that may contribute to the continued spread of the outbreak. The initial phase is usually characterized by confusion and anxiety. People want timely and accurate facts about what happened, what is being done, and most importantly, what they should do. People will question the immediate threat to them, the duration of the threat, and who is going to fix the problem. Specifically, during the initial phase, risk communicators should focus on the following aspects:

- Convey empathy and reassurance. Reduce emotional turmoil.
- Designate agency spokespersons and identify formal channels and methods of communication.
- Establish a general and broad-based understanding of the outbreak circumstances, consequences, and anticipated outcomes based on available information.
- Reduce crisis-related uncertainty as much as possible.
- Help the public understand the responsibilities of the various organizations involved in the response.
- Promote self-efficacy (explain to people that they can help themselves or reach a goal) through personal response activities and share how and where they can get more information.

During the *maintenance phase*, risk communicators should help the affected populations by continuing to share information about the outbreak as it becomes available. Specifically, risk communicators should focus on the following aspects:

- Ensure that the public is updated, understands ongoing risks, and knows how to mitigate these risks.
- Provide background and supportive information to those who need it.
- Encourage broad-based support and cooperation with the response and recovery efforts.
- Gather feedback from the affected public – listen, learn, and assess.
- Correct misunderstandings, rumors, or unclear facts.
- Continue to help people believe they can take steps to protect themselves, their families, and their community. Continue to explain those steps.

c) **Recovery phase:** During the recovery phase (when the outbreak has been controlled), the focus of the communication will shift to the need to keep healthy and avoid getting in contact with contaminated places. Specifically, during this phase, communicators should do the following:

- Explain ongoing cleanup, remediation, recovery, and rebuilding efforts to your audience.
- Motivate them to act if needed.

- Facilitate broad-based, honest, and open discussion about causes, blame, responsibility, resolutions, and adequacy of the response.
- Improve individual understanding of new risks.
- Promote behaviors that avoid risks
- Promote personal preparedness.
- Promote the activities and capabilities of agencies and organizations by reinforcing positive identities and images.
- Persuade the public to support public policy and resource allocation to the problem

This strategy provides disease-specific general health risk messages, and messages that communicators should use during the preparedness, response and recovery phases of the outbreak. The messages provided in this risk communication strategy are short messages that will need to be developed into fully-fledged messages that will be communicated through the different channels of communication.

### 5.3 Disease-specific Key Messages, Communication and Distribution Channels

This strategy deals with seven priority zoonotic diseases discussed one by one below. For each disease, a specific profile is included to guide the readers in understanding the causes, modes of transmission, and their signs and symptoms, as well as key messages, communication and distribution channels. This information is particularly important for readers and users of this strategy who are intending to contribute to addressing these zoonotic diseases.

#### 5.3.1 ANTHRAX

**Disease profile:** Anthrax is an infection caused by bacteria (a type of germ) called *Bacillus anthracis*. These bacteria make **spores**, a form of the germ covered by a protective shell. The spores can live for years in the soil, and they cause anthrax when they enter the body. Anthrax can be found naturally in soil and commonly affects domestic and wild animals around the world. People can get sick with anthrax if they come in contact with infected animals or contaminated animal products (meat, milk, blood, ghee, hides) Contact with anthrax can cause severe illness in both humans and animals. The incubation period is usually 1 to 7 days but can be up to 2 months. Its spores can be viable in the soil for a period of up to 60 years. There are **four** types of anthrax: cutaneous anthrax, inhalation anthrax, gastro-intestinal anthrax, and injection anthrax.

##### 5.3.1.1 Cutaneous Anthrax

*Cutaneous anthrax* occurs when anthrax organisms get into the skin, usually through a cut. This can happen when a person handles infected animals or contaminated animal products like wool, hides, or hair. Cutaneous anthrax is most common on the head, neck, forearms, and hands. It affects the skin and tissue around the site of infection. Cutaneous anthrax is the most common form of anthrax infection, and it is also considered to be the least dangerous. Infection usually develops from 1 to 7 days after exposure. Without treatment, up to 20% of people with cutaneous anthrax may die. However, with proper treatment, almost all patients with cutaneous anthrax survive. The signs and symptoms of cutaneous anthrax include:

- A group of small blisters or bumps that may itch
- Swelling can occur around the sore

- A painless skin sore (ulcer) with a black center that appears after the small blisters or bumps. Most often the sore will be on the face, neck, arms, or hands

### 5.3.1.2 Inhalation Anthrax

*Inhalation anthrax* occurs when a person breathes in anthrax spores. People who work in places such as wool mills, slaughterhouses, and tanneries may breathe in the spores when working with infected animals or contaminated animal products from infected animals. Inhalation anthrax starts primarily in the lymph nodes in the chest before spreading throughout the rest of the body, ultimately causing severe breathing problems and shock. Inhalation anthrax is considered to be the deadliest form of anthrax. Infection usually develops within a week after exposure, but it can take up to 2 months. Without treatment, only about 10 – 15% of patients with inhalation anthrax survive. However, with aggressive treatment, about 55% of patients survive. The signs and symptoms of inhalation anthrax include:

- Fever and chills
- Chest discomfort
- Shortness of breath
- Confusion or dizziness
- Cough
- Nausea, vomiting, or stomach pains
- Headache
- Sweats (often drenching)
- Extreme tiredness
- Body aches

### 5.3.1.3 Gastro-intestinal Anthrax

*Gastro-intestinal anthrax* occurs when a person eats raw or undercooked meat from an animal infected with anthrax. Once ingested, anthrax spores can affect the upper gastrointestinal tract (throat and esophagus), stomach, and intestines. Infection usually develops from 1 to 7 days after exposure. Without treatment, more than half of patients with gastrointestinal anthrax die. However, with proper treatment, 60% of patients survive. The signs and symptoms of gastro-intestinal anthrax include:

- Fever and chills
- Swelling of neck or neck glands
- Sore throat
- Painful swallowing
- Hoarseness
- Nausea and vomiting, especially bloody vomiting
- Diarrhea or bloody diarrhea
- Headache
- Flushing (red face) and red eyes
- Stomach pain
- Fainting
- Swelling of abdomen (stomach)

### 5.3.1.4 Injection Anthrax

*Injection anthrax* is another type of anthrax infection that has been identified in heroin-injecting drug users especially in Northern Europe. Symptoms may be similar to those of cutaneous anthrax, but there may be infection deep under the skin or in the muscle where the drug was injected. Injection anthrax can spread throughout the body faster and be harder to recognize and treat. Lots of other more common bacteria can cause skin and injection site infections, so a skin or injection site infection in a drug user does not necessarily mean the person has anthrax. The signs and symptoms of injection anthrax include:

- Fever and chills
- A group of small blisters or bumps that may itch, appearing where the drug was injected
- A painless skin sore with a black center that appears after the blisters or bumps
- Swelling around the sore
- Abscesses deep under the skin or in the muscle where the drug was injected

#### How Animals and Humans Get Infected with Anthrax

Domestic and wild animals such as cattle, sheep, goats, antelope, and deer can become infected when they breathe in or ingest spores in contaminated soil, plants, or water. In areas where domestic animals have had anthrax in the past, routine vaccination can help prevent outbreaks. On the other hand, people get infected with anthrax when spores get into the body and become “activated.” When they become active, the bacteria can multiply, spread out in the body, produce toxins (poisons), and cause severe illness. This can happen when people breathe in spores, eat food or drink water that is contaminated with spores, or get spores in a cut or scrape in the skin. All types of anthrax have the potential, if untreated, to spread throughout the body and cause severe illness and even death. The primary, secondary and tertiary audiences of anthrax disease are shown below.

**Table 1: Primary, Secondary and Tertiary Audiences of Anthrax Disease**

<i>Primary Audiences</i>	<i>Secondary Audiences</i>	<i>Tertiary Audiences</i>
<ul style="list-style-type: none"> <li>- Shepherds/herdsmen</li> <li>- Cattle owners</li> <li>- Livestock farmers</li> <li>- Cattle traders</li> <li>- Skinners of animals/Butchers</li> <li>- Meat handlers</li> <li>- Meat and animal product consumers</li> <li>- Dealers in skins and hides</li> <li>- Dealers in animal products like milk and meat</li> </ul>	<ul style="list-style-type: none"> <li>- Animal health workers e.g. Veterinary officers</li> <li>- Human health workers</li> <li>- Factory workers</li> <li>- Community leaders (Elected, customary and religious leaders)</li> <li>- Traders e.g. transporters food vendors</li> </ul>	<ul style="list-style-type: none"> <li>- Media</li> <li>- Partners</li> <li>- Pharmaceutical companies</li> <li>- Community Social services workers</li> </ul>

### 5.3.1.5 Current and Desired Behaviors of Target Audiences

*Audience profile:* The target audiences for anthrax include people who look after the animals, those who carry out milking, those who feed on animal products and others who use them as a means of transport e.g. donkeys. They also include people who buy, cook and serve meat, especially adult females. These people have heard of anthrax, but they don’t have specific knowledge about its causes, modes of transmission and clinical manifestations of the disease.

**Current behavior:** The target audience engages in risk behaviors that predispose them to the risk of contracting anthrax. They also engage in cultural practices that can heighten the risk of contracting, spreading or perpetuating the further spread of anthrax.

#### ***Behavioral risks***

- Not taking animals for vaccination
- Drinking un-boiled milk and eating raw/ half cooked meat
- Sharing shelter with animals
- Using cow dung for construction
- Patting animals
- Consuming meat from dead animals
- Sleeping and sitting on skins and hides
- Collection of animal remains as manure especially urine.
- Smoking meat and sending it to distant relatives or for use during days of food scarcity

#### ***Cultural risks***

- Slaughtering animals, drinking fresh blood and eating the meat. This exposes them to infection if the blood or meat is of a diseased animal.
- In some cultures when an outbreak strikes, people hold sticks and beat dry skins and hides in the morning as a way of 'sending away' the disease to other communities. This is not effective in controlling the epidemic.
- In other cultures, there is a belief that burying a dead cow is like burying one's own wealth. This affects the way they manage animals that have died of anthrax.

#### ***Desired behavior***

- Shepherds/herdsmen are able to change behavioral practices and attitudes that are associated with anthrax.
- Livestock farmers know the risk factors for anthrax and have the correct knowledge and ability to identify diseased animals and report immediately to Veterinary Officers.
- Meat handlers have correct knowledge about anthrax and its causes and buy, cook and serve meat that is bought from inspected places.
- Stopping consumption of meat from dead animals both domestic and game
- Change belief that drying of meat by smoking kills of the games

#### ***Communication objectives***

- To increase the target audience's knowledge about the risk factors for transmission of anthrax and increase perception of anthrax as a health threat
- To equip the target audience with anthrax preventive techniques
- To sensitize people about the local cultural practices that can put them at risk of contracting anthrax

**Table 2: Key Messages, Communication and Distribution Channels**

	General Health Risk Messages	Preparedness Phase Messages	Response Phase Messages	Recovery Phase Messages
<b>Key Messages</b>	<ul style="list-style-type: none"> <li>- Anthrax is a bacterial infection that affects animals mainly, but can be transmitted to humans through contact with infected animal or animal products (e.g. meat, skin, hides, milk, cow dung, urine etc.)</li> <li>- An infected animal presents with weight loss, failure to feed, restlessness, and swellings on the body</li> <li>- Infected persons present flu-like illness, coughing blood, diarrhea, headaches skin patches, sore throat, mild fever, fatigue and muscle aches, painful swallowing nausea, mild chest discomfort and difficulty in breathing</li> <li>- You cannot catch anthrax from another person the same way you might catch a cold or the flu</li> <li>- Do not eat meat from carcasses of animals; instead burn it or bury an animal that dies suddenly</li> <li>- Stop direct watering of animals in water sources</li> <li>- such as rivers, streams and ponds</li> </ul>	<ul style="list-style-type: none"> <li>- Anthrax spores stay in the environment for decades and animals can easily pick them.</li> <li>- Vaccinate all your animals against Anthrax annually</li> <li>- Both animals and humans can contract anthrax</li> <li>- Do not share accommodation with animals</li> <li>- Conduct animal checks regularly through a veterinary doctor</li> <li>- Construct animal watering troughs</li> <li>- People who are suspected of contracting anthrax should report to health facilities</li> <li>- Have community laws and regulations on bush burning.</li> <li>- Avoid over grazing, cultivation of anthrax infected animal burial grounds as it will expose the spores to the surface</li> <li>- Seek relevant information on anthrax seasonality from animal health workers</li> <li>- Control surface runoff and floods levels in the communal grazing areas</li> <li>- Secure all the community grazing animals from wildlife areas</li> </ul>	<p><i>In Animals</i></p> <ul style="list-style-type: none"> <li>- All affected animals should be isolated from the rest of healthy animals.</li> <li>- All the uninfected animals in the affected herd should be vaccinated immediately</li> <li>- All cattle on neighboring premises/farms should also be vaccinated</li> <li>- Affected premises should be quarantined for at least 20 days after the last case</li> <li>- A buffer zone, 20-30 Km radius should be established around the infected area within which all cattle and exposed sheep should be vaccinated and quarantined</li> <li>- Reduce the number of animals per truck during transport to other localities.</li> <li>- Avoid stopover of animals in the outbreak areas.</li> <li>- Avoid sharing grazing lands and watering of animals</li> <li>- Any milk collected from animals showing signs of anthrax within 8 hours of milking should be destroyed, along with any other milk that may have been mixed with the suspected milk.</li> <li>- In case your animal passes dung-stained with blood, report to a veterinary doctor immediately</li> </ul>	<ul style="list-style-type: none"> <li>- Continue to vaccinate your animals regularly</li> <li>- Do not share accommodation with animals</li> <li>- Report any suspected case of anthrax in animals and humans to the health workers or your leaders</li> <li>- Always buy properly inspected meat by first observing presence of the inspection stamp on the meat</li> <li>- Conduct animal checks regularly through a veterinary doctor</li> <li>- If recovering from anthrax, go for regular medical checkups at the health facility</li> <li>- Adhere to the quarantine period and guidelines to avoid re-occurrence and spread of the disease.</li> <li>- Initiate laws and regulations on animal and meat trade in the affected communities.</li> </ul>

**Table 2: Key Messages, Communication and Distribution Channels (Cont....)**

	General Health Risk Messages	Preparedness Phase Messages	Response Phase Messages	Recovery Phase Messages
<b>Key Messages</b>	<ul style="list-style-type: none"> <li>- Have only manageable number of the heard.</li> <li>- Do not graze animals in wildlife protected areas as this can be reserves for disease outbreaks.</li> <li>- Use fit for purpose Personnel protective gear (PPE)</li> <li>- People should not crowd during burial of both human and animal carcass</li> <li>- Provide hand washing and sanitizing additives.</li> <li>- Immediately inform a trained veterinary officer in case of any sudden animal deaths</li> </ul>	<ul style="list-style-type: none"> <li>- Communities adjacent to wildlife should report of any dead wild animals to local authorities for better management.</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure all sick animals are treated.</li> <li>- Report sudden deaths in animals to Veterinary Officers</li> <li>- Burial should be supervised by animal health workers</li> <li>- Never open the carcass before burials as this exposes the environment to the bacteria</li> <li>- Burial of animals that have died suddenly must be supervised by a veterinary officer</li> <li>- Animal burials should be handled using fit for purpose personnel protective gear (PPE).</li> </ul> <p><i>In Human Beings</i></p> <ul style="list-style-type: none"> <li>- People entering infected premises should wear protective clothing and footwear, which should be disinfected before leaving the premises.</li> <li>- People entering infected premises should avoid any contact with other persons or animals without first changing clothing, washing hands and taking appropriate disinfection measures</li> <li>- Always buy properly inspected meat by first observing presence of the inspection stamp on the meat</li> <li>- Do not eat meat from dead animals or meat from unknown sources</li> <li>- Report/bring persons infected with anthrax to the nearest health facility</li> </ul>	



**Table 2: Key Messages, Communication and Distribution Channels (Cont....)**

	<b>General Health Risk Messages</b>	<b>Preparedness Phase Messages</b>	<b>Response Phase Messages</b>	<b>Recovery Phase Messages</b>
<b>Communication Channels</b>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- TV</li> <li>- Print media (Leaflets, booklets, flyers, distributed in schools, workshops, bars, markets, and other public areas)</li> <li>- Announcements in public places of worship (churches, mosques, temples, shrines etc.) and markets</li> <li>- Newspapers</li> <li>- Have outdoor media bill boards especially in towns and protected communities</li> </ul>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- TV</li> <li>- Print media</li> <li>- Announcements in public places of worship (churches, mosques etc.) and markets</li> <li>- Leaflets distributed in schools, workshops</li> <li>- Newspapers</li> </ul>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- TV</li> <li>- Print media</li> <li>- Announcements in public places in of worship (churches mosques etc.) and markets</li> <li>- Leaflets distributed in schools, workshops</li> </ul>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- TV</li> <li>- Print media</li> <li>- Announcements in public places in of worship (churches, mosques etc.) and markets</li> <li>- Leaflets distributed in schools, workshops</li> <li>- Newspapers</li> </ul>
<b>Distribution Channels</b>	<ul style="list-style-type: none"> <li>- Community meetings/ dialogues.</li> <li>- Markets</li> <li>- Places of worship</li> <li>- Burial events</li> <li>- Schools</li> <li>- Workshops</li> <li>- Social gatherings</li> <li>- Religious institutions</li> <li>- Opinion leaders</li> <li>- Extension service providers</li> <li>- VHTs</li> <li>- Community drive through barazas and activations</li> <li>- Community one on one discussion,</li> <li>- Points of entry into the country (border posts). And other public places.</li> <li>- Use of posters and billboards.</li> <li>- Use of drama groups</li> </ul>	<ul style="list-style-type: none"> <li>- Community meetings/ dialogues.</li> <li>- Markets</li> <li>- Places of worship</li> <li>- Burial events</li> <li>- Schools</li> <li>- Workshops</li> <li>- Social gatherings</li> <li>- Religious institutions</li> <li>- Opinion leaders</li> <li>- Extension service providers</li> <li>- VHTs</li> <li>- Community drive through barazas and activations</li> <li>- Community one on one discussion,</li> <li>- Points of entry into the country (border posts). And other public places.</li> <li>- Use of posters and billboards.</li> </ul>	<ul style="list-style-type: none"> <li>- Community engagement / dialogues.</li> <li>- Markets</li> <li>- Places of worship</li> <li>- Burial events</li> <li>- Schools</li> <li>- Workshops</li> <li>- Social gatherings</li> <li>- Religious institutions</li> <li>- Opinion leaders</li> <li>- Extension service providers</li> <li>- VHTs</li> <li>- Community drive through barazas and activations</li> <li>- Points of entry into the country (border posts). And other public places.</li> <li>- Use of posters and billboards.</li> <li>- Use of drama groups</li> </ul>	<ul style="list-style-type: none"> <li>- Community meetings/ dialogues.</li> <li>- Markets</li> <li>- Places of worship</li> <li>- Burial events</li> <li>- Schools</li> <li>- Workshops</li> <li>- Social gatherings</li> <li>- Religious institutions</li> <li>- Opinion leaders</li> <li>- Extension service providers</li> <li>- VHTs</li> <li>- Community drive through barazas and activations</li> <li>-</li> </ul>

The messages shown in *Table 2* apply to all types of audiences. So, the communication team will have to identify specific messages that target specific audiences and apply them to the local context. It is important for the communication team to take into consideration cultural, gender, occupation, and geographical differences that may affect the design, delivery and content of messages to ensure that they are well accepted. Overall, these aspects apply to all messages outlined in this strategy.

### 5.3.2 ZONOTIC INFLUENZA VIRUSES

Zoonotic influenza refers to a disease caused by animal influenza viruses that cross the animal-human divide to infect people. People can be infected with influenza viruses that are usually circulating in animals, such as *avian influenza virus* subtypes A(H5N1) and A(H9N2) and *swine influenza virus* subtypes A(H1N1) and A(H3N2). Even though these viruses may be named as the same subtype as viruses found in humans, all animal influenza viruses are distinct from human influenza viruses and do not easily transmit between humans. Some zoonotic influenza viruses may occasionally infect humans and can cause diseases in people ranging from mild conjunctivitis to severe pneumonia and death. Usually these human infections of zoonotic influenza are acquired through direct contact with infected animals or contaminated environments, and do not spread quickly between people. If such a virus acquired the capacity to spread sustainably from one person to another, it could start a pandemic because it would be so new that humans would have little immunity to it. Just like birds and pigs, other animals such as horses and dogs, can be infected with their own influenza viruses (canine influenza viruses, equine influenza viruses, etc.).

#### *Key Facts*

- Humans can be infected with avian, swine and other zoonotic influenza viruses, such as avian influenza virus subtypes A(H5N1), A(H7N9), and A(H9N2) and swine influenza virus subtypes A(H1N1), A(H1N2) and A(H3N2).
- Human infections are primarily acquired through direct contact with infected animals or contaminated environments, and not from humans because these viruses have not acquired the ability of sustained transmission among humans.
- Avian, swine and other zoonotic influenza virus infections in humans may cause disease ranging from mild upper respiratory tract infection (fever and cough), early sputum production and rapid progression to severe pneumonia, sepsis with shock, acute respiratory distress syndrome and even death. Conjunctivitis, gastrointestinal symptoms, encephalitis and encephalopathy have also been reported to varying degrees depending on subtype.
- Most of human cases of influenza A (H5N1) and A(H7N9) virus infection have been associated with direct or indirect contact with infected live or dead poultry. Controlling the disease in the animal source is critical to decrease risk to humans.
- Zoonotic influenza infection in humans will continue to occur because Influenza viruses, with the vast silent reservoir in aquatic birds, are impossible to eradicate. To minimize public health risk, therefore quality surveillance in both animal and human populations, thorough investigation of every human infection and risk-based pandemic planning are essential.

### 5.3.2.1 Avian Influenza

**Disease profile:** Avian influenza refers to the disease caused by infection with avian (bird) influenza (flu) Type A viruses. Birds are the natural hosts for avian influenza viruses. After an outbreak of A(H5N1) virus in 1997 in poultry in Hong Kong SAR, China, this avian and other influenza virus have spread from Asia to Europe and Africa. These viruses occur naturally among wild aquatic birds worldwide and can infect domestic poultry and other bird and animal species. Avian flu normally affects birds but infections in humans have also been registered. In Uganda, highly pathogenic Avian influenza A(H5N8) was reported in January 2017 where a high level of mortality occurred among migratory birds; the white-winged terns. The mortalities started in late 2016 along the shores of Lake Victoria in Lutembe bay in Wakiso District and in Kachanga village in Masaka village where 1200 deaths occurred.

#### **Key Facts**

- Avian influenza is essentially an animal disease with some of the avian influenza virus types, like H5N1, having the capability to infect humans
- There is a greater risk that if proper care is not taken, the virus can change into a form that is highly infectious to humans. It could then spread easily from human to human which would lead to a global outbreak.
- When the virus passes from birds to humans, it could result in very severe illness that may lead to death.
- In previous outbreaks, more than half of the people who got infected died.
- Most of the deaths have occurred in previously healthy children and young adults.
- Poultry is the primary source of the virus transmitted to humans
- Bird flu can result in loss of livelihoods for farmers leading to a huge economic loss for the country

#### **Avian influenza viruses**

Avian influenza A viruses are classified into the following two categories: Low Pathogenic Avian Influenza (LPAI) A and Highly Pathogenic Avian Influenza (HPAI) A viruses. The categories refer to molecular characteristics of a virus and its ability to cause disease and mortality in chicken in a laboratory setting. Infection of poultry with LPAI viruses may cause no disease or mild illness (such as ruffled feathers and a drop-in egg production) and may not be easily detected. Infection of poultry with HPAI viruses can cause severe disease with high mortality. Both HPAI and LPAI viruses can spread rapidly through poultry flocks. However, some ducks can be infected without any signs of illness.

**Avian Influenza in Aquatic Birds:** Wild aquatic birds can be infected with avian influenza A viruses in their intestines and respiratory tract, but usually do not get sick. However, avian influenza A viruses are very contagious among birds and some of these viruses can infect and even kill certain domesticated bird species including chicken, ducks, and turkeys. Infected birds can shed avian influenza A viruses in their saliva, nasal secretions and feces. Susceptible birds become infected when they have contact with the virus as it is shed by infected birds. They also can become infected through contact with surfaces that are contaminated with virus from infected birds.

**Avian Influenza in Wild Birds:** Avian Influenza A viruses have been isolated from more than 100 different species of wild birds. Most of these viruses have been LPAI viruses. Most of the wild birds from which these viruses have been recovered represent gulls, terns and shorebirds or waterfowl such as ducks, geese and swans. These wild birds are often viewed as reservoirs (hosts) for avian influenza A viruses.

**Avian Influenza in Poultry (Domesticated Birds):** Domesticated birds (chickens, turkeys, etc.) may become infected with avian influenza A viruses through direct contact with infected waterfowl or other infected poultry, or through contact with surfaces that have been contaminated with the viruses. HPAI virus infection in poultry (such as with HPAI H5 or HPAI H7 viruses) can cause disease that affects multiple internal organs with mortality of 90% to 100%, often within 48 hours.

**Bird Flu in Humans:** Human infections with bird flu viruses can happen when many viruses get into a person’s eyes, nose or mouth, or are inhaled. This can happen when a virus is in the air (in droplets or possibly dust) and a person breathes it in, or when a person touches something that has the virus on it and then touches their mouth, eyes or nose. The spread of avian influenza A viruses from one ill person to another is very rare, and when it happens, it is inefficient and not sustained. However, because of the possibility that avian influenza viruses can change and gain the ability to spread easily between people, monitoring for human infection and person-to-person spread is extremely important for public health.

**Modes of Transmission**

- Contact with diseased birds and their products such as meat, eggs
- Handling sick or dead bird
- Contact with blood, feathers and secretions from sick or infected birds
- Contact with contaminated surfaces and fomites (e.g. clothes, gumboots, rugs, bird cages, egg trays, vehicles, etc.)
- High risks of transmission during slaughtering and or plucking of feathers from sick or dead birds.

**Table 3. Signs and Symptoms of Avian Influenza**

<i>Signs and Symptoms in Birds</i>	<i>Signs and Symptoms in Humans<sup>2</sup></i>
<ul style="list-style-type: none"> <li>- Fever, diarrhea, sneezing and coughing</li> <li>- Discharges from the nose</li> <li>- Acute respiratory distress syndrome</li> <li>- Swelling of the head, eyelids, combs and legs</li> <li>- Bluish or purple coloring of the legs, combs and wattle</li> <li>- Dying of wild and/or domestic birds in large numbers</li> </ul>	<ul style="list-style-type: none"> <li>- Severe fever, cough, difficulty in breathing, coughing out blood</li> <li>- Sore throat</li> <li>- General body/ muscle pains</li> </ul> <p>Unlike common cold, symptoms of bird flu are more severe and disabling</p>

<sup>2</sup> Fever, cough, sore throat and muscle pains are common symptoms of other infections, so confirmation must be sought from the nearest health facility.

**Table 4. Target Audiences for Avian Influenza Risk Communication**

<i>Primary Audiences</i>	<i>Secondary Audiences</i>	<i>Tertiary Audiences</i>
<ul style="list-style-type: none"> <li>- Free range and intensive poultry farmers</li> <li>- Poultry traders (butchers, processors, handlers and transporters)</li> <li>- Consumers</li> <li>- Poultry attendants (including children)</li> <li>- Garbage collectors/cleaners/sorters</li> <li>- Fishermen (in the case of migratory birds)</li> </ul>	<ul style="list-style-type: none"> <li>- Animal healthcare providers</li> <li>- Human health care providers</li> <li>- Hatchery agents</li> <li>- Non-government organization (NGO) staff (in direct contact with farmers, e.g. in micro-credit)</li> <li>- Wildlife staff (zoo, sanctuary and national park staff)</li> <li>- Tourists</li> <li>- Local community members</li> </ul>	<ul style="list-style-type: none"> <li>- Local government leadership e.g., district veterinary officers, local council chairpersons and sub-county chiefs</li> <li>- Poultry Industry Associations</li> <li>- National level policy makers, e.g., relevant line government ministries and agencies, MAAIF, MOH, etc.</li> <li>- International organizations Including: FAO, OIE, WHO and other donor and bilateral organizations</li> </ul>

### 5.3.2.2 Current and Desired Behaviors of Targeted Audiences

**Audience profile:** Target audiences include poultry producers, intermediaries, live bird market workers, and consumers. These individuals are usually in daily encounter with poultry and poultry products and use minimal or no form of protection. Members of the target audience have little knowledge about avian influenza.

**Current behavior:** Members of the target audience (those described above) engage in risky practices that predispose them to the risk of contracting avian influenza. They also engage in cultural practices that help to propagate the spread of the disease.

Some of the behavioral risks include sleeping in the same room with poultry, eating half/poorly cooked poultry meat, eating dead birds, hunting wild birds and buying breeding stock from markets. Other risk factors include mixing domestic and wild birds in the same cages and mixing diseased and healthy birds together at market places. Poultry farmers and market workers do not disclose information regarding the health of their birds due to fear that their birds will be quarantined or that their birds will be sold cheaply or rejected in the markets or even culled by the authorities. Poultry farmers have the perception that wild birds cannot transmit the disease to domestic birds. Market workers usually buy cheaper birds from farmers to maximize profits (farmers are likely to sell diseased birds cheaply before they die).

Some communities believe that disposing of a dead bird/animal without consuming it is a curse to the remaining flock. Some communities also use local herbs to treat affected birds which results in the sick birds not healing properly.

**Desired behavior:**

- Poultry farmers should be able to isolate all sick birds from those that are not yet diseased to minimize further spread
- Poultry farmers should be able to properly handle, cull and dispose of sick and dead birds

- Poultry farmers should not sleep in the same house with birds; mix wild birds with domestic birds or buy sick birds from the markets or other farmers
- Poultry farmers should report suspected cases to authorities promptly
- Poultry farmers should institute sufficient biosecurity measures on the farm, e.g. fencing the farms to keep unwanted animals and visitors out; disinfect vehicles before they enter the farm; restrict access to the farm; establish disinfection areas (footbaths) before entering the farm/each poultry house; use boots/clothing that can easily be cleaned or changed between houses/farms; clean and disinfect all surfaces regularly using detergents/hypochlorite solutions and not borrow equipment from other farms as these may be contaminated
- Poultry farmers should apply the principle of “*all in all out*”, meaning all birds should be taken off the farm at the same time (for the market), the house and ground must be cleaned and disinfected, and only then can young stock be introduced into the house
- Poultry farmers should avoid keeping chicken, ducks and turkeys in the same yard
- Replace birds from within the flock or from controlled and healthy flock
- Farmers, traders and consumers should be able to identify a diseased bird
- Consumers of poultry products should not eat sick or dead birds neither should they feed sick/dead birds to other animals
- Consumers should buy poultry products from a trusted source

***Communication objectives:***

- To increase the target audiences’ knowledge of the signs, symptoms, risk factors and reporting channels for bird flu in both animals and humans as well as how to prevent/control its introduction and spread in humans and animals.
- To increase the target audiences’ risk perception of bird flu as a serious disease to people and birds/poultry.
- To increase the target audiences’ ability to identify and report cases of avian influenza.
- To enable policy makers and community leaders to use the knowledge and information to prevent and contain bird flu, to ensure full systemic and institutional preparedness for rapid roll out of appropriate interventions to control localized outbreaks or the emergence of a pandemic.

**Table 5. Key Messages, Communication and Distribution Channels**

	<b>General Health Risk Messages</b>	<b>Preparedness Phase Messages</b>	<b>Response Phase Messages</b>	<b>Recovery Phase Messages</b>
<b>Key Messages</b>	<ul style="list-style-type: none"> <li>- Avian influenza affects both birds and human beings</li> <li>- Don't share houses with poultry</li> <li>- Use personal protective equipment (PPE) when handling sick birds</li> <li>- Take affected persons to the nearest health facilities</li> <li>- Keep poultry in closed places where wild birds cannot access</li> <li>- Prevent children from playing with birds</li> <li>- People with exposure to potentially infected birds should practice proper personal hygiene, especially frequent hand washing and if sick immediately seek medical care</li> <li>- Keep poultry away from water or feeding sources that may have been contaminated by wild birds.</li> <li>- Clean compound and coops daily to remove droppings and uneaten feed.</li> <li>- Avoid moving chicks and ducklings from one homestead to another</li> </ul>	<ul style="list-style-type: none"> <li>- Obtain birds from reliable sources</li> <li>- Avoid keeping chicken, ducks, turkeys in the same yard and avoid their contact with wild birds.</li> <li>- Do not transport birds without adequate disinfection of vehicles, cages, equipment, and clothing</li> <li>- Keep children away from all birds</li> <li>- Avoid all unnecessary contact with birds, their feathers, feces, and other wastes</li> <li>- If you have to touch birds/their liquid wastes, use personal protective wear</li> <li>- Wash hands thoroughly with soap and water after any contact</li> <li>- Keep birds away from living areas</li> <li>- Cook poultry products thoroughly at high temperatures</li> <li>- Do not mix raw and cooked poultry. Do not use the same knives/chopping board etc.</li> <li>- If you fall sick with fever after close contact with birds, seek immediate treatment from the nearest health center.</li> </ul>	<ul style="list-style-type: none"> <li>- Report all affected birds to the district veterinary officer and local authorities</li> <li>- Avoid eating dead birds</li> <li>- Avoid touching dead birds without protection</li> <li>- Burn or bury dead birds and wash hands with soap or ash immediately afterwards.</li> <li>- Isolate affected birds from healthy ones and cull all affected birds</li> <li>- Restrict access to your farm</li> <li>- Clean and disinfect poultry houses, equipment and protective clothing regularly</li> <li>- Wash hands and feet with soap before entering and immediately after leaving poultry houses</li> <li>- Observe quarantine measures</li> <li>- Do not buy, slaughter or eat sick birds</li> <li>- Sick or dead birds must not be left lying in the homestead (proper disposal).</li> <li>- Dead birds must not be thrown into rivers, ponds or other waterways. (proper disposal).</li> <li>- Infected birds must be placed in plastic bags and taken away for examination by qualified personnel</li> </ul>	<ul style="list-style-type: none"> <li>- Remain vigilant and alert</li> <li>- Continue to practice good hygiene habits</li> <li>- Try to return to normal as best as you can</li> <li>- Burn or bury all dead animals</li> <li>- Do not visit farms where birds have had disease problems</li> <li>- Wash hands, feet and shoes or sandals with soap and water before entering and after leaving poultry farms</li> <li>- Restrict entry to the poultry premises</li> <li>- Always disinfect poultry houses before introducing new flock</li> <li>- Buy birds from only certified or disease-free sources</li> <li>- If you have bird flu, take all prescribed treatment until you are completely healed</li> <li>- Continue to wear protective equipment before you get in contact with wild or domesticated birds</li> </ul>

Table 5. Key Messages, Communication and Distribution Channels (Cont....)

	General Health Risk Messages	Preparedness Phase Messages	Response Phase Messages	Recovery Phase Messages
<b>Key Messages</b>		<ul style="list-style-type: none"> <li>- Minimize access to your poultry unit.</li> <li>- Separate sick birds from human living areas</li> <li>- Put a footbath in front of your farm and a bucket of water and soap in front of your poultry house. Wash hands, feet, boots, and shoes with soap before entering and immediately after leaving poultry houses</li> <li>- Clean market places and dispose of market wastes properly</li> <li>- Do not hunt or eat wild birds, some of them may be diseased</li> <li>- Report high fever to health workers if you have been around poultry in the last seven days</li> <li>- Separate raw poultry meat and eggs from cooked or ready-to-eat foods</li> <li>- Wash all butchering and cooking knives and materials in soapy water immediately after use</li> <li>- Wash both hands with soap or ash frequently during and after preparation of poultry and eggs</li> <li>- Ensure children's hands and clothes are thoroughly washed with soap immediately after contact with poultry or poultry products</li> </ul>	<ul style="list-style-type: none"> <li>- Only eat well/thoroughly cooked poultry (there should be no pink parts), meat or eggs with no blood or raw parts</li> <li>- Keep children away from birds</li> <li>- Eggs can contain the virus on the shell so wash hands with soap and clean water after touching eggs.</li> <li>- Wash all knives, plates, bowls, pots and pans that have been used for raw poultry with soap and clean water or disinfectant</li> <li>- If infected with Avian influenza, stay at home as much as possible and avoid crowded places</li> <li>- Seek early medical care when you experience: high fever, cough, sore throat, running nose and muscle aches</li> </ul>	
<b>Communication Channels</b>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- Television</li> <li>- Posters</li> <li>- Print media</li> </ul>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- Television</li> <li>- Posters</li> <li>- Flyers</li> </ul>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- Television</li> <li>- Posters</li> <li>- Flyers/ Pamphlets</li> </ul>	<ul style="list-style-type: none"> <li>- Print media</li> <li>- Radio</li> <li>- Television</li> </ul>



**Table 5. Key Messages, Communication and Distribution Channels (Cont....)**

	General Health Risk Messages	Preparedness Phase Messages	Response Phase Messages	Recovery Phase Messages
<b>Distribution Channels</b>	<ul style="list-style-type: none"> <li>- Community meetings</li> <li>- Markets</li> <li>- Places of worship Churches, Mosques</li> <li>- Burial places</li> <li>- Schools</li> <li>- Community gatherings</li> <li>- Faith-based organizations</li> <li>- Extension service providers</li> <li>- Village health teams</li> </ul>	<ul style="list-style-type: none"> <li>- Community meetings</li> <li>- Markets</li> <li>- Places of worship Churches, Mosques</li> <li>- Burial places</li> <li>- Schools</li> <li>- Community gatherings</li> <li>- Faith-based organizations</li> <li>- Extension Service providers</li> <li>- Village health teams</li> </ul>	<ul style="list-style-type: none"> <li>- Community meetings</li> <li>- Markets</li> <li>- Places of worship Churches, Mosques</li> <li>- Churches</li> <li>- Burial places</li> <li>- Schools</li> <li>- Community gatherings</li> <li>- Faith-based organizations</li> <li>- Extension service providers</li> <li>- Village health teams</li> </ul>	<ul style="list-style-type: none"> <li>- Community meetings</li> <li>- Markets</li> <li>- Places of worship Churches, Mosques</li> <li>- Burial places</li> <li>- Schools</li> <li>- Community gatherings</li> <li>- Faith-based organizations</li> <li>- Extension service providers</li> <li>- Village health teams</li> </ul>

### 5.3.3 VIRAL HEMORRHAGIC FEVERS

The term 'Viral Hemorrhagic Fever' (VHF) refers to a group of illnesses that are caused by several distinct families of viruses including *Arenaviridae* (Lassa fever, Junin and Machupo), *Bunyaviridae* (Crimean-Congo hemorrhagic fever, Rift Valley Fever, Hantaan haemorrhagic fevers), *Filoviridae* (Ebola and Marburg) and *Flaviviridae* (yellow fever, dengue, Omsk hemorrhagic fever, Kyasanur forest disease). In general, the term "VHF" is used to describe a severe multisystem syndrome (multisystem in that multiple organ systems in the body are affected). Characteristically, the overall vascular system is damaged, and the body's ability to regulate itself is impaired. VHFs have common features: they affect many organs, they damage the blood vessels, and they affect the body's ability to regulate itself. While some types of hemorrhagic fever viruses can cause relatively mild illnesses, many of these viruses cause severe, life-threatening disease. Examples of VHFs include: Ebola Virus Disease, Marburg Haemorrhagic Fever, Crimean Congo Haemorrhagic Fever and Rift Valley Fever. Since VHFs have common features, we have used one disease - Ebola Virus Disease - to highlight the target audiences, key messages and channels of communication as shown below.

#### 5.3.3.1 Ebola Virus Disease

**Disease profile:** Ebola Virus Disease (EVD) is a deadly disease that usually affects people and non-human primates (monkeys, gorillas, and chimpanzees). It is caused by an infection with a group of viruses within the genus *Ebolavirus*:

1. Zaire virus (species Zaire ebolavirus)
2. Sudan virus (species Sud)
3. Reston virus (species Reston ebolavirus)
4. Bombali *virus* (species Bombali ebolavirus)
5. Taï Forest virus (species Taï Forest ebolavirus, formerly Côte d'Ivoire ebolavirus)
6. Bundibugyo virus (species Bundibugyo ebolavirus)

Of these, only four (Zaire, Sudan, Taï Forest, and Bundibugyo viruses) are known to cause disease in people. *Reston* virus is known to cause disease in nonhuman primates and pigs, but not in people. It is unknown if the *Bombali* virus, which was recently identified in bats, causes disease in either animals or people. Ebola virus was first discovered in 1976 near the Ebola River in what is now the Democratic Republic of Congo. Since then, the virus has been infecting people from time to time, leading to outbreaks in several African countries. Scientists do not know where the Ebola virus comes from. However, based on the nature of similar viruses, they believe the virus is animal-borne, with bats being the most likely source. The bats carrying the virus can transmit it to other animals, like apes, monkeys, duikers, and humans. The source of infection of the EVD outbreaks in all the outbreaks that have occurred in Uganda has never been conclusively determined.

Ebola virus spreads to people through direct contact with bodily fluids of a person who is sick with or has died from EVD. This can occur when a person touches the infected body fluids (or objects that are contaminated with them), and the virus gets in through broken skin or mucous membranes in the

eyes, nose, or mouth. The virus can also spread to people through direct contact with the blood, body fluids and tissues of infected fruit bats or primates. People can get the virus through sexual contact as well. Ebola survivors may experience difficult side effects after their recovery, such as tiredness, muscle aches, eye and vision problems and stomach pain. Survivors may also experience stigma as they re-enter their communities. It has an incubation period of 2-21 days.

### ***Key Messages about EVD***

- Ebola is real and kills. But you can protect yourself, your family, and your community.
- Be alert – help stop the spread of Ebola. Speak with your local community leader if you suspect someone with Ebola in your community or call the toll-free Ebola Hotline **0800 100066** for advice.
- Do not touch a sick person with Ebola-like symptoms such as fever, headache, body ache, diarrhea (with or without blood), vomiting (with or without blood) etc; An Ebola patient; or a body of a person who has died of Ebola or Ebola-like disease. Do not touch their belongings like clothes, bed sheets, or other household items either.
- Ebola causes sudden high fever, extreme tiredness, headache, body pain and loss of appetite. If you have a sudden high fever after contact with a person with Ebola or suspected Ebola or after attending a funeral, go to the nearest health facility immediately.
- Early treatment of Ebola at an Ebola Treatment Unit (ETU) increases your chance of survival. By going to a health facility as soon as you have symptoms, you protect your family and community and help stop the spread of the disease.
- Wash your hands frequently with soap and water after every any touching or physical contact (e.g. hugging, shaking hands, sex etc.)

### ***Signs and symptoms***

- Fever
- Severe headache
- Joint and muscle aches
- Weakness
- Fatigue
- Diarrhea (with or without blood)
- Vomiting (with or without blood)
- Abdominal (stomach) pain
- Unexplained hemorrhage (bleeding or bruising)
- Sore throat
- Lack of appetite

**Table 6. Primary, Secondary and Tertiary Audiences of Ebola Virus Disease**

<i>Primary Audiences</i>	<i>Secondary Audiences</i>	<i>Tertiary Audiences</i>
<ul style="list-style-type: none"> <li>- General population</li> <li>- Persons who are sick</li> <li>- Heads of households/families with individuals suspected to have contracted EVD or suspected to have died of Ebola-like symptoms</li> <li>- Contacts of persons who are sick or died and are classified as EVD or probable EVD cases</li> <li>- Individuals who are suspected/at risk to have contracted EVD: i.e. individuals who have exhibited signs and symptoms of EVD; or been in contact (directly/indirectly) with a suspected/confirmed EVD patient; or participated in the burial ceremony of a suspected/probable/confirmed EVD victim)</li> <li>- Health care workers</li> <li>- Burial workers</li> <li>- EVD survivors</li> <li>- Public transportation operators, traders and market vendors</li> <li>- People routinely moving across borders</li> <li>- Traditional and alternative healers</li> <li>- Hunters</li> <li>- Special groups (children/students, adolescents/youth, religious leaders)</li> </ul>	<ul style="list-style-type: none"> <li>- Personnel in pharmacies, dispensaries and mobile drug vendors</li> <li>- Religious leaders</li> <li>- Cultural and traditional leaders</li> <li>- Media Fraternity</li> <li>- Teachers</li> <li>- Boarder control and patrol workers</li> <li>- Cross boarder workers (cultivators, )</li> </ul>	<ul style="list-style-type: none"> <li>- Political leaders</li> <li>- Security forces</li> <li>- Tourists</li> <li>- Refugees</li> <li>- Both Emigrants and Immigrants</li> </ul>

**Current and Desired Behaviors of Target Audiences**

*a) Members of the general public and individuals affected by EVD*

**Audience profile:** Target audiences are members of the general population who live in a country or community where there is an outbreak of EVD or at a high risk of an outbreak. They also include the household head or household members living in families with individuals who are suspected to have contracted EVD (e.g. heads of the family (husband and wife), children and caretakers (maids), individuals who are suspected or have confirmed EVD, health workers who treat people with EVD and their families as well as travelers. The target audience also includes contacts of persons suspected or confirmed to have EVD such as individuals who slept in the same household with a person suspected of having Ebola; those who touched a person with suspected Ebola (alive or dead); those who had sexual contact with a person with suspected Ebola; touched the blood or bodily fluids of a person with suspected Ebola (alive or dead); touched the personal belongings of a person with suspected Ebola, including their clothes, towels and bed linen; a breastfeeding mother with Ebola and one who wet-nursed a baby with Ebola. These individuals are at risk because they can interact with people who have the disease. Some members of the target audience have poor knowledge of EVD and engage in practices that may increase risk of contracting or spreading EVD.

### ***Behavioral risks***

- Family members/contacts of persons with EVD take care of sick patients and in the process get exposed to bodily fluids or other contaminated objects that infect them with Ebola virus
- Family members/contacts sharing household facilities/items with a person with EVD
- Touching persons who are suspected of having EVD, patients or people who have or have died of EVD
- Direct involvement in burial practices
- Eating wild animals especially monkeys, bats and chimpanzees
- Hunting and handling wild animals
- Eating fruits that bats or wild animals have partly eaten
- Grazing in lowland areas with plenty of grass and caves. They settle in caves, mine rock salt for the animals and practice some hunting. This increases their vulnerability to filoviruses. This exposes them to bats or other animals that harbor the Ebola virus.

### ***Cultural behavioral risks***

- Washing dead bodies
- Traditional and spiritual healing practices involving close physical contacts between the healer and the patient
- Staying around and touching the dead body before or during burial
- Application of cultural herbs or other artifacts to the dead body as a formal send-off of the deceased member of the family

### **Desired Knowledge and Behavior**

- Members of the general public are aware of the causes and transmission methods of EVD and avoid practices that can increase their risk of contracting the disease, e.g. do not touch a person with or have died of Ebola-like symptoms such as fever, headache, body ache, diarrhea (with or without blood), vomiting (with or without blood)
- Families with a patient with Ebola-like symptoms do not touch them, their belongings or for people who have died of Ebola-like symptoms
- That people are able to identify Ebola-like symptoms and raise an alert immediately.

### **Communication objectives**

- To increase people's knowledge about EVD, its causes, how it is spread how to prevent and control it
- To increase people's efficacy in reducing practices that expose them to EVD
- To reduce panic among the people when an outbreak of EVD occurs by providing clear and correct information about the disease and doable actions for control of spread.
- To decrease misconceptions about EVD, its causes, how it spreads, and how to prevent and get treatment for it
- To reduce community stigma and discrimination about EVD patients who have healed in order to encourage seeking of prompt treatment and reporting of household deaths
- To increase prompt reporting and isolating of sick people exhibiting Ebola-like symptoms and deaths occurring within communities

**Table 7. EVD Key Messages, Communication and Distribution Channels**

	<b>General Health Risk Messages</b>	<b>Preparedness Phase Messages</b>	<b>Response Phase Messages</b>	<b>Recovery Phase Messages</b>
<b>Key Messages</b>	<ul style="list-style-type: none"> <li>- Ebola enters your body through your mouth, nose and eyes, or broken skin when you get in contact with an infected person's bodily fluids and then touch your eyes nose or mouth. Bodily fluids include sweat, stools, vomit, urine, semen, vaginal fluid and blood.</li> <li>- You cannot spread Ebola disease until symptoms like sudden high fever and headache appear. A person who does not have physical symptoms cannot infect others.</li> <li>- Ebola is spread to humans from some animals like bats and monkeys.</li> <li>- People can catch the disease through touching or eating a sick or dead animal or meat from unknown sources</li> <li>- Do not visit caves or other places that are usual habitats of fruit bats</li> <li>- Avoid interaction with primates whether as pets or in the wild.</li> </ul>	<p><i>EVD prevention:</i></p> <ul style="list-style-type: none"> <li>- Do not visit caves or other places that are usual habitats of fruit bats</li> <li>- Avoid preparation and consumption of meat from sick or dead animals and meat from unknown sources</li> <li>- Avoid contact with bats and non-human primates or blood and fluid</li> <li>- Ebola spreads easily amongst people through contact with body fluids.</li> <li>- Practice good hand hygiene, especially when travelling, to avoid all kinds of illnesses.</li> <li>- Ebola can be transmitted from used sharp instrument like razors, needles, that used by an infected person.</li> <li>- Be alert to notice the symptoms of Ebola early on and go to a health facility or the Ebola Treatment Unit immediately if available</li> <li>- You cannot get Ebola by talking to people, walking in the street or shopping in the market.</li> </ul>	<p><i>In case an Ebola Case has been confirmed:</i></p> <ul style="list-style-type: none"> <li>- You can protect yourself and your loved ones from Ebola by avoiding contact with a person who has EVD or is suspected to have EVD.</li> <li>- Avoid travelling to Ebola-affected areas</li> <li>- Always report cases of bleeding from body openings or other symptoms of Ebola immediately</li> <li>- Wash your hands frequently with soap and water after every social contact</li> <li>- Report any case with Ebola-like symptoms and ensure they are taken to the Emergency Treatment Unit immediately</li> <li>- Ebola can be transmitted between a baby and their mother through breastfeeding if one of them is infected. If one has any symptoms of Ebola, they should be rushed to the Emergency Treatment Centre.</li> <li>- Breast-feeding should only be stopped if a trained health worker determines there is a risk to continue nursing or if either mother or child shows symptoms of Ebola.</li> </ul>	<p><i>After the last EVD case</i></p> <ul style="list-style-type: none"> <li>- There is a risk of reoccurrence of Ebola outbreak or new outbreaks</li> <li>- Maintain preventive measures such as avoiding close contact with animals and not consuming sick or dead animals</li> <li>- Health workers may ask an Ebola survivor to report the status of your health or visit you every day for 21 days until they are sure you do not show signs and symptoms of Ebola.</li> <li>- If you have recovered from Ebola, you cannot catch it again during the same outbreak.</li> <li>- You cannot get Ebola by touching an Ebola survivor or their belongings.</li> <li>- Men who recover from Ebola should wear a condom during sexual contact for at least 3 months after recovery Ebola is present in the semen up to this time and can spread the virus.</li> </ul>

Table 7. EVD Key Messages, Communication and Distribution Channels (Cont....)

	General Health Risk Messages	Preparedness Phase Messages	Response Phase Messages	Recovery Phase Messages
Key Messages	<ul style="list-style-type: none"> <li>- Seek medical care immediately if you develop fever, headache, muscle pain, diarrhea, vomiting, stomach pain, or unexplained bruising or bleeding</li> <li>- Wildlife officers should designate wild primate watering and foraging grounds to reduce contact</li> <li>- Protect the natural ecosystem barriers between protected areas and community lands.</li> <li>- Plant unpalatable crops at the edges of protected areas to reduce primate foraging in community croplands</li> </ul>		<p><i>Care and treatment</i></p> <ul style="list-style-type: none"> <li>- If attended to early, a person with EVD has chance of survival. Free treatment for Ebola is available at Ebola treatment units (ETU)</li> <li>- If you or someone you know falls sick with fever, extreme tiredness, headache, body pain and loss of appetite, go or take them to the nearest health facility immediately.</li> </ul> <p><i>Safe burial<sup>3</sup> and other practices</i></p> <ul style="list-style-type: none"> <li>- A person who has died of Ebola is still highly infectious and should not be touched. Pay your respects without touching, kissing, cleaning or wrapping the body.</li> <li>- If a person has died of Ebola, their clothes and bedding are contagious and must be burnt. The house, latrine and person's room must be thoroughly disinfected by trained personnel</li> <li>- The body of a person with Ebola should only be handled by people who are trained in safe burial practices.</li> <li>- Under no circumstances should a body be touched or moved after burial.</li> </ul>	

<sup>3</sup>*Safe burial practices* entail the following: a) burial should take place as soon as a person with EVD has died; b) the body should be prepared for burial by health care workers who have access to and use PPEs; c) family members should be counseled to avoid touching or washing the body; and d) the body should be wrapped and all areas in contact with the body need to be cleaned with a bleach solution, per the WHO guidance

Table 7. EVD Key Messages, Communication and Distribution Channels (Cont....)

	General Health Risk Messages	Preparedness Phase Messages	Response Phase Messages	Recovery Phase Messages
<b>Communication Channels</b>	<ul style="list-style-type: none"> <li>- Press conferences</li> <li>- Radio/Radio talk shows</li> <li>- TV</li> <li>- Radio spots messages</li> <li>- Print media</li> <li>- Posters at health facilities</li> <li>- Social media</li> <li>- Interpersonal communication</li> <li>- Community dialogues</li> <li>- Mobile cinemas</li> <li>- IEC materials</li> <li>- Use of religious leaders, opinion leaders, cultural leaders, councilors, and other key stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>- Radio/Radio talk shows</li> <li>- Radio spots messages</li> <li>- TV</li> <li>- Print media</li> <li>- Posters at health facilities</li> <li>- Social media</li> <li>- Interpersonal communication</li> <li>- Community dialogues</li> <li>- IEC materials</li> <li>- Use of religious leaders, opinion leaders, cultural leaders, councilors, and other key stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>- Press conferences</li> <li>- Radio spots</li> <li>- TV</li> <li>- Print media</li> <li>- Brochures/posters (IEC materials)</li> <li>- Social media</li> <li>- Interpersonal communication</li> <li>- Mobile phones</li> <li>- Use of religious leaders, opinion leaders, cultural leaders, councilors, and other key stakeholders</li> <li>- Community dialogues</li> </ul>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- TV</li> <li>- Telephone</li> <li>- Print media</li> <li>- Brochures/posters</li> <li>- Social media</li> <li>- Interpersonal communication</li> <li>- Use of religious leaders, opinion leaders, cultural leaders, councilors, and other key stakeholders</li> <li>- Community dialogues</li> </ul>
<b>Distribution Channels</b>	<ul style="list-style-type: none"> <li>- Community meetings</li> <li>- Schools</li> <li>- Places of worship (Churches, Mosques)</li> <li>- Health facilities</li> <li>- Village health teams</li> </ul>	<ul style="list-style-type: none"> <li>- Community meetings</li> <li>- Schools</li> <li>- Places of worship (Churches, Mosques)</li> <li>- Health facilities</li> <li>- Village health teams</li> </ul>	<ul style="list-style-type: none"> <li>- Schools</li> <li>- Places of worship (Churches, Mosques)</li> <li>- Health facilities</li> <li>- Village health teams</li> </ul>	<ul style="list-style-type: none"> <li>- Community meetings</li> <li>- Schools</li> <li>- Places of worship (Churches, Mosques)</li> <li>- Health facilities</li> <li>- Village health teams</li> </ul>

These messages are deliberately generic and will require adaptations to local contexts/languages feedback, rumors and questions, particularly as they are shared through local community networks and organizations.



**Table 7. EVD Key Messages, Communication and Distribution Channels**

	<b>General Health Risk Messages</b>	<b>Preparedness Phase Messages</b>	<b>Response Phase Messages</b>	<b>Recovery Phase Messages</b>
<b>Key messages</b>	<ul style="list-style-type: none"> <li>- Viral hemorrhagic fevers (VHFs) are illnesses caused by several groups of viruses. They can be mild or life-threatening. Many have no known cure.</li> <li>- VHFs include Ebola, Marburg, Crimean-Congo Hemorrhagic Fever and Rift Valley Fever, among others</li> <li>- The Ebola virus comprises five distinct species: <i>Bundibugyo</i>, <i>Tai Forest</i>, <i>Reston</i>, <i>Sudan</i>, and <i>Zaire</i>. Of these, only four (<i>Zaire</i>, <i>Sudan</i>, <i>Tai Forest</i>, and <i>Bundibugyo</i> viruses) are known to cause disease in humans.</li> <li>- Currently there is no widely available treatment for Ebola. However, there is an experimental drug known as ZMAPP that is currently administered to protect people during outbreaks<sup>4</sup>. There is also a vaccine VSV-EBOV that has been proved to be 70–100% effective against the Ebola virus, making it the first proven vaccine against the disease</li> </ul>	<ul style="list-style-type: none"> <li>- Human-to-human Ebola transmission occurs through contact with infected blood, body fluids, and contaminated objects</li> <li>- Always use personal protective equipment correctly when dealing with patients</li> <li>- Chances of getting well for those infected with Ebola increases if they get treatment at an Ebola treatment unit early.</li> </ul>	<ul style="list-style-type: none"> <li>- Always use personal protective equipment correctly when dealing with patients</li> <li>- Avoid direct contact with people alive or dead with Ebola or suspected Ebola.</li> <li>- Notify health officials if you have had direct contact with the blood or body fluids, such as but not limited to, feces, saliva, urine, vomit, and semen of a person who is sick with Ebola or suspected to have Ebola.</li> <li>- If you get sick, go to a health facility immediately. Your chances of surviving increase the sooner you get treatment.</li> </ul>	<ul style="list-style-type: none"> <li>- Human-to-human Ebola transmission occurs through touching infected blood, body fluids, and contaminated objects</li> <li>- Strict compliance with infection prevention and control guidelines is required to protect yourself and your patients and prevent virus spread</li> </ul>

<sup>4</sup>**ZMapp**, developed by Mapp Biopharmaceutical Inc., is an experimental treatment for use with persons infected with Ebola virus. The product is a combination of three different monoclonal antibodies that bind to the protein of Ebola virus. It is too early to know if ZMapp is effective because the drug is still in an experimental stage and has not yet been tested in humans for safety or effectiveness. Some patients infected with Ebola virus do get better spontaneously or with supportive care.

**Table 7. EVD Key Messages, Communication and Distribution Channels (Cont....)**

	<b>General Health Risk Messages</b>	<b>Preparedness Phase Messages</b>	<b>Response Phase Messages</b>	<b>Recovery Phase Messages</b>
<b>Communication Channels</b>	<ul style="list-style-type: none"> <li>- Radios</li> <li>- TV</li> <li>- Direct text messages</li> <li>- Internet based communication</li> </ul>	<ul style="list-style-type: none"> <li>- Radios</li> <li>- TV</li> <li>- Direct text messages</li> <li>- Internet based communication</li> </ul>	<ul style="list-style-type: none"> <li>- Radios</li> <li>- TV</li> <li>- Direct text messages</li> <li>- Internet based communication</li> </ul>	<ul style="list-style-type: none"> <li>- Radios</li> <li>- TV</li> <li>- Direct text messages</li> <li>- Internet based communication</li> </ul>
Distribution channels	<ul style="list-style-type: none"> <li>- Posters</li> <li>- Brochures</li> <li>- Meetings/workshops</li> <li>- Health Units</li> </ul>	<ul style="list-style-type: none"> <li>- Posters</li> <li>- Brochures</li> <li>- Meetings/workshops</li> <li>- Health Units</li> </ul>	<ul style="list-style-type: none"> <li>- Posters</li> <li>- Brochures</li> <li>- Meetings/workshops</li> <li>- Health Units</li> </ul>	<ul style="list-style-type: none"> <li>- Posters</li> <li>- Brochures</li> <li>- Meetings/workshops</li> <li>- Health Units</li> </ul>

### 5.3.4 BRUCELLOSIS

**Disease profile:** Brucellosis is an infectious disease caused by *Brucella* bacteria. The bacteria can spread from animals to humans. It has an incubation period of 5-60 days in humans and 2 weeks -1 year in animals but highly variable. People can get the disease when they are in contact with infected animals or animal products contaminated with the bacteria. Animals that are most commonly infected include sheep, cattle, goats, pigs, and dogs, among others. In Uganda the disease is known to have different names among different tribes for example *Za azo* in Lugbara and *Ayani* in Aringah. There are many sub-species of *Brucella* which tend to be species-specific with differing virulence levels:

- 1) *B. melitensis* for sheep and goats (Highly virulent).
- 2) *B. abortus* for cattle and camel (moderately virulent).
- 3) *B. canis* for dogs (moderately virulent)
- 4) *B. suis* for pigs (very rare)

#### **Key Facts**

- Cattle, sheep, goats and pigs are the main reservoirs of *Brucella*. Generally, there is cross infection among species for example cattle can also be infected with *B. melitensis*
- Most cases of Brucellosis in humans are caused by *B. melitensis*.
- Transmission to humans occurs through consumption of contaminated animal products, occupational and environmental contact with infected animals or their products.
- Blood or organ/tissue transfer is a possible source of infection.
- Person-to-person transmission is extremely rare.
- Human brucellosis usually presents as on and off febrile illness.
- All age groups are affected.
- Complications may affect any organ system.
- The disease may persist as relapse, chronic localized infection or delayed convalescence<sup>5</sup>.

#### **Modes of transmission**

The most common way of contracting brucellosis is by eating or drinking unpasteurized/raw dairy products. When sheep, goats, cows, or camels are infected, their milk becomes contaminated with the bacteria. Breathing in the bacteria that cause brucellosis (inhalation) may also lead to infection. This risk is generally greater for people in laboratories that work with the bacteria. In addition, slaughterhouse and meat-packing employees have also been known to be exposed to the bacteria and ultimately become infected. Bacteria can also enter the body through skin wounds or mucous membranes when individuals get in contact with infected animals, such as through assisted calving by farmers without protective gear. This poses a problem for workers who have close contact with animals or animal excretions (newborn animals, fetuses, and birth fluids).

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<sup>5</sup>**Convalescence** is the gradual recovery of health and strength after illness or injury. It refers to the later stage of an infectious disease or illness when the patient recovers and returns to previous health, but may continue to be a source of infection to others even if feeling better.

## *Signs and Symptoms of Brucellosis*

### *In humans*

- Undulating Fever – high grade in nature, worse in the evening hours
- Sweats
- Headache
- muscles, joint, and/ back pain
- Fatigue
- Night sweat
- Poor appetite and weight loss
- Swollen liver, spleen
- General malaise (weakness)
- Abortion/ miscarriage, birth defect among females (rare)
- Paralysis of lower limbs/joint swelling
- Chills
- Formation of localized lesions in all organs, like testicles, bones etc.

### *In animals*

- Abortion in the third trimester
- Fever
- Still births
- Retention of fetal membranes
- Weak calves born
- Swollen testicles in bulls
- Knee swellings (hygromas)
- Swollen udders

**Table 8. Primary, Secondary and Tertiary Audiences**

<i>Primary Audiences</i>	<i>Secondary Audiences</i>	<i>Tertiary Audiences</i>
<ul style="list-style-type: none"> <li>- Meat handlers</li> <li>- Livestock traders</li> <li>- Poachers</li> <li>- Livestock farmers including cattle keeping households as they get ready supply of milk/ meat; housewives who prepare food with bare hands and family members who get involved in assisted deliveries</li> <li>- Butchers</li> <li>- Consumers of animal products</li> <li>- Slaughter house workers</li> </ul>	<ul style="list-style-type: none"> <li>- Veterinarians</li> <li>- Health workers especially laboratory staff.</li> <li>- Local leaders</li> <li>- Consumers of animal products</li> <li>- Livestock traders</li> <li>- Game Rangers</li> </ul>	<ul style="list-style-type: none"> <li>- Traditional healers</li> <li>- Administrators</li> <li>- Policy makers at national and local levels)</li> <li>- Local leaders including clan, religious, traditional.</li> </ul>

### *Current and Desired Behaviors of Targeted Audiences*

**Audience profile:** Targeted audiences are people who get into contact with animals and animal products. Most of these people have little knowledge on how Brucellosis is transmitted, signs and symptoms and control measures. Some of them, such as livestock farmers, value their animals so highly that they find it hard to bury diseased ones. Instead, they slaughter them, smoke the meat and eat it.

#### **Current behaviors**

Members of the target audience take raw unpasteurized milk and half cooked meat. Some of them prefer to use cow dung for smearing houses or help animals to delivery without using gloves. These behaviors increase the risk of infection with Brucellosis.

#### **Desired behaviors:**

- Livestock farmers should be able to handle animals and animal products in a way that prevents acquisition or transmission of Brucellosis disease.
- Butchers reporting sick animals with signs and symptoms and not allowing slaughtering of any sick animals.
- Meat and milk consumers should be able to properly handle animals and animal products.

#### **Communication Objectives**

- To increase target audience's knowledge of the causes, clinical manifestations and modes of transmission of Brucellosis
- To increase the proportion of target audience members who know that buying or selling meat or other animal products from a diseased animal can increase risk of transmission of Brucellosis.

**Table 9. Brucellosis Key Messages, Communication and Distribution Channels**

	<b>General Health Risk Messages</b>	<b>Preparedness Phase Messages</b>	<b>Response Phase Messages</b>	<b>Recovery Phase Messages</b>
<b>Key messages</b>	<ul style="list-style-type: none"> <li>- Brucellosis is spread through contact with infected animals, infected animal products and birth fluids.</li> <li>- Use protective gears (PPE) while handling animal products.</li> <li>- Pasteurize milk and properly cook meat before consumption.</li> <li>- Brucellosis is a deadly disease and once contracted, it can result into irreversible illness and prolonged treatment.</li> <li>- Use trained personnel to help with animal deliveries and avoid exposure to animal bodily fluids</li> </ul>	<ul style="list-style-type: none"> <li>- Report diseased animals to veterinarians</li> <li>- Use protective gears (PPE) while handling animal products.</li> <li>- Pasteurize milk and properly cook meat before consumption</li> <li>- Avoid buying sick/diseased animals</li> <li>- Buy meat/milk from certified dealers</li> <li>- Avoid direct contact with birth fluids, infected animals and animal products</li> <li>- Vaccinate all animals annually</li> </ul>	<ul style="list-style-type: none"> <li>- Report all suspected animals to Veterinarians</li> <li>- Treat infected cases promptly (humans and animals)</li> <li>- Disposal of animal carcasses and aborted fetuses safely</li> <li>- Restrict animal movements through a quarantine</li> <li>- Educate affected communities about the disease</li> <li>- Do not slaughter any animals that carry some of the signs and symptoms of Brucellosis</li> <li>- Do not buy meat from unlicensed butcheries</li> <li>- Avoid eating raw meat or drinking raw milk or products made from raw milk</li> <li>- Meat should be adequately cooked.</li> </ul>	<ul style="list-style-type: none"> <li>- Control movement of animals through issuing of health certificates</li> <li>- Continue to sensitize communities about Brucellosis</li> <li>- Confirm the disease status of animals with qualified personnel before you slaughter them</li> <li>- Slaughter animals that have been checked and cleared of disease by qualified personnel</li> <li>- Buy meat from licensed butcheries</li> </ul>
<b>Communication Channels</b>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- Religious institutions</li> <li>- Opinion leaders</li> <li>- Information, education and communication (IEC) materials in local languages</li> <li>- Social media</li> </ul>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- Religious institutions</li> <li>- Opinion leaders</li> <li>- Information, education and communication (IEC) materials in local languages</li> <li>- Social media</li> </ul>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- Religious institutions</li> <li>- Opinion leaders</li> </ul>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- Religious institutions</li> <li>- Opinion leaders</li> </ul>
<b>Distribution Channels</b>	<ul style="list-style-type: none"> <li>- Extension staff</li> <li>- VHTs</li> <li>- Community gatherings (Social, Religious, Political, Cultural)</li> </ul>	<ul style="list-style-type: none"> <li>- Extension staff</li> <li>- VHTs</li> <li>- Community gatherings (Social, Religious, Political, Cultural)</li> </ul>	<ul style="list-style-type: none"> <li>- Extension staff</li> <li>- VHTs</li> </ul>	<ul style="list-style-type: none"> <li>- Extension staff</li> <li>- VHTs</li> </ul>

### 5.3.5 AFRICAN TRYPANOSOMIASIS

**Disease Profile:** African Trypanosomiasis is caused by microscopic parasites of the genus *Trypanosoma* with several species. It is transmitted by the tsetse fly (*Glossina* species), which is found mainly in rural Africa. There are two types of African Trypanosomiasis; human African trypanosomiasis (HAT) or “sleeping sickness” and animal trypanosomiasis or “nagana”. The human trypanosomiasis also takes two forms, each named after the region of Africa in which it is historically found. The two forms of Sleeping sickness are curable with medication and can be fatal if left untreated.

Trypanosomiasis experienced in eastern and southern Africa is caused by the parasite *Trypanosoma brucei rhodesiense*. A person will get this type of Trypanosomiasis if he or she is bitten by a tsetse fly infected with the *Trypanosoma brucei rhodesiense* parasite. It is an acute infection with the first signs and symptoms observed a few months or weeks after infection. More than 95% of cases are reported from Uganda, Tanzania, Malawi, and Zambia. Tsetse flies are found in woodland and savannah areas and they bite during daylight hours. The persons most likely to be exposed to the infection are tourists, hunters, farmers, pastoralists, fishermen, people washing clothes, bathing/swimming in areas along streams and rivers and others working in or visiting game parks. Villagers with infected cattle herds are also at higher risk.

Individuals can become infected with Trypanosomiasis if they receive a bite from an infected tsetse fly carrying a parasite called *Trypanosoma brucei gambiense*. A person can be infected for months or even years without major signs or symptoms of the disease hence it is a chronic infection. Occasionally a pregnant woman may pass the infection to her unborn baby. Most of the reported cases are found in Democratic Republic of Congo, Angola, Sudan, South Sudan, Central African Republic, Chad, and Northern Uganda.

Animal trypanosomiasis (Nagana) is transmitted to animals through a bite of an infected tsetse fly. Other parasite species and sub-species of the *Trypanosoma* genus are pathogenic to animals and cause animal trypanosomiasis in wild and domestic animals. In cattle the disease is called *Nagana*. Trypanosomiasis in domestic animals, particularly in cattle, render livestock sick and unproductive and, can cause death and is therefore a major obstacle to the economic development of affected rural areas. Animals can host the human pathogen parasites, especially *T.B. rhodesiense*, of which domestic and wild animals are an important reservoir. Animals can also be infected with *T.B. gambiense* and act as a reservoir to a lesser extent.

#### Key Facts

- Sleeping sickness occurs in 37 sub-Saharan Africa countries where there are tsetse flies that transmit the disease.
- The people most exposed to the tsetse fly and therefore the disease live in rural areas and depend on agriculture, fishing, animal husbandry, hunting, and people washing clothes, bathing/swimming in areas along streams and rivers.
- Human African trypanosomiasis takes two forms, depending on the parasite involved: *Trypanosoma brucei gambiense* accounts for more than 98% of reported cases in Africa and *Trypanosoma brucei rhodesiense*
- Diagnosis and treatment of the disease is complex and requires specifically experienced staff.

- Sustained control efforts have reduced the number of new cases. In 2009 the number reported dropped below 10,000 for the first time in 50 years, and in 2015 there were 2,804 cases recorded in Africa. In Uganda there has been a progressive reduction in the number of cases from 1,248 in the year 2000 to only 6 in 2018 due to sustained control efforts aimed at HAT elimination in 2020 as shown below:

Year	2000	2005	2015	2017	2018
g-HAT	948	311	28	13	4
r-HAT	300	473	4	2	2
<b>Total</b>	<b>1,248</b>	<b>784</b>	<b>32</b>	<b>15</b>	<b>6</b>

Source: National Sleeping Sickness Control Programme, Ministry of Health

**Table 10. Signs and Symptoms of African Trypanosomiasis**

Animals	Humans
<ul style="list-style-type: none"> <li>- Fluctuating body temperature</li> <li>- Weight loss to emaciation</li> <li>- Swollen lymph nodes</li> <li>- Starry hair coat</li> <li>- Diarrhea</li> <li>- Lacrimation (Tearing)</li> <li>- Anorexia (Loss of appetite)</li> <li>- Anemia</li> <li>- Abortions</li> </ul>	<ul style="list-style-type: none"> <li>- Headache</li> <li>- Abdominal pain</li> <li>- Excessive sleep</li> <li>- Fever</li> <li>- Fatigue</li> <li>- Aching muscles</li> <li>- Swollen lymph nodes</li> </ul>

**Table 11. Primary, Secondary and Tertiary Audiences**

Primary Audiences	Secondary Audiences	Tertiary Audiences
<ul style="list-style-type: none"> <li>- Herdsmen</li> <li>- Community members living in infested areas</li> <li>- Game rangers</li> </ul>	<ul style="list-style-type: none"> <li>- Community leaders (Village Health Teams, Local Council leaders, Religious leaders)</li> <li>- Opinion leaders</li> <li>- Community associations</li> <li>- Health workers</li> <li>- Veterinary staff</li> </ul>	<ul style="list-style-type: none"> <li>- Cultural leaders</li> <li>- Religious leaders</li> <li>- Technical staff (district, line ministries and international organizations)</li> <li>- Political leaders (district and national levels)</li> <li>- Civil Society Organizations</li> </ul>

### *Current and Desired Behaviors of Targeted Audiences*

**Audience profile:** The target audience includes cattle keepers (herdsmen) who are always in constant contact with tsetse fly habitants in the grazing fields. They interact with wild animals and Tsetse flies due to numerous activities they carry out. Rural families are in constant contact with domestic animals which are reservoirs of trypanosomes

### **Current behavior**

#### *Behavioral risks*

- Hunting wild animals, bush burning, fetching of fire wood and charcoal burning from the forests
- Attributing strange diseases in animals and humans to witchcraft instead of seeking treatment
- Camping in forests as part of tourism and recreation.

#### *Cultural risks*

Some tribes in Uganda practice nomadism and sometimes settle in areas infested with Tsetse flies.



**Desired behavior**

Members of the target audience avoiding tsetse fly infested areas and activities that expose them to Trypanosomiasis transmitting vectors.

**Communication objectives**

- To create awareness about African Trypanosomiasis among herdsmen and rural communities
- To increase the target audience's knowledge of what they should do to avoid contracting African Trypanosomiasis or what they should do once they have contracted the disease

**Table 12. Key Messages, Communication and Distribution Channels**

	<b>General Health Risk Messages</b>	<b>Preparedness Phase Messages</b>	<b>Response Phase Messages</b>	<b>Recovery Phase Messages</b>
<b>Key messages</b>	<ul style="list-style-type: none"> <li>- While in the areas infested by Tsetse flies, cover exposed skin by wearing long-sleeved shirts, trousers and hats to minimize bites.</li> <li>- While in Tsetse flies infested areas, avoid wearing blue-colored clothes. The Tsetse fly is attracted to blue colors</li> <li>- Avoid bushy areas during the day because the tsetse fly rests in bushes and will bite if disturbed.</li> <li>- While in a heavily tsetse infested area, inspect vehicles for tsetse flies before entering and keep windows shut as the flies are attracted to moving vehicles</li> <li>- Although there is limited evidence that insect repellents work against tsetse flies, you should use an appropriate insect repellent as directed</li> </ul>	<ul style="list-style-type: none"> <li>- Spray animals with appropriate acaricides to limit tsetse bites.</li> <li>- Clear bushes near homesteads to destroy tsetse habitans.</li> <li>- Give prophylactic treatment to susceptible animals.</li> <li>- Mobilize and sensitize communities at risk.</li> <li>-Set tsetse traps in tsetse fly infested areas.</li> </ul>	<ul style="list-style-type: none"> <li>- Report cases of body weakness, headache associated with unusual sleeping pattern to a healthcare provider</li> <li>- Report cases of Tsetse fly bites to a health facility.</li> <li>- Spray animals with appropriate acaricides to limit Tsetse bites.</li> <li>- Give prophylactic treatment to susceptible animals.</li> <li>- Report cases of suspected or infected animals to veterinary officer for treatment</li> </ul>	<ul style="list-style-type: none"> <li>- Report persistent and new cases of body weakness, headache associated with unusual sleeping pattern to a healthcare provider</li> <li>- Always give your animals prophylactic drugs to help prevent the disease from occurring</li> <li>- Confirmed cases should endeavor to complete their dozes of treatment to prevent relapses</li> <li>- Continued surveillance by health workers and animal health workers</li> <li>- Continuous spraying of animals with appropriate acaricides</li> <li>- Continuous sensitization of communities at risk</li> </ul>
<b>Communication Channels</b>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- TV</li> <li>- IEC materials</li> <li>- Social events</li> <li>- Community announcements</li> <li>- Extension workers</li> <li>- Social media</li> </ul>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- TV</li> <li>- IEC materials</li> <li>- Social events</li> <li>- Community announcements</li> <li>- Extension workers</li> <li>- Social media</li> </ul>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- TV</li> <li>- IEC materials</li> <li>- Social events</li> <li>- Community announcements</li> <li>- Extension workers</li> <li>- Social media</li> </ul>	<ul style="list-style-type: none"> <li>- Radio</li> <li>- TV</li> <li>- IEC materials</li> <li>- Social events</li> <li>- Community announcements</li> <li>- Extension workers</li> <li>- Social media</li> </ul>

**Table 12. Key Messages, Communication and Distribution Channels (Cont....)**

	<b>General Health Risk Messages</b>	<b>Preparedness Phase Messages</b>	<b>Response Phase Messages</b>	<b>Recovery Phase Messages</b>
<b>Distribution Channels</b>	<ul style="list-style-type: none"> <li>- VHT</li> <li>- Community gatherings</li> <li>- Health facilities</li> <li>- Places of worship (Churches, Mosques)</li> <li>- Markets</li> <li>- Home visits</li> <li>- Community outreaches</li> </ul>	<ul style="list-style-type: none"> <li>- VHT</li> <li>- Community gatherings</li> <li>- Health facilities</li> <li>- Places of worship (Churches, Mosques)</li> <li>- Markets</li> <li>- Home visits</li> <li>- Community outreaches</li> </ul>	<ul style="list-style-type: none"> <li>- VHT</li> <li>- Community gatherings</li> <li>- Health facilities</li> <li>- Places of worship (Churches, Mosques)</li> <li>- Markets</li> <li>- Home visits</li> <li>- Community outreaches</li> </ul>	<ul style="list-style-type: none"> <li>- VHT</li> <li>- Community gatherings</li> <li>- Health facilities</li> <li>- Places of worship (Churches, Mosques)</li> <li>- Markets</li> <li>- Home visits</li> <li>- Community outreaches</li> </ul>

### 5.3.6 PLAGUE

**Disease profile:** Plague is a disease that affects humans and other mammals. It is caused by the bacterium, *Yersinia pestis*. It is transmitted between rodents by rodent fleas and can be transmitted to people when infected rodent fleas bite them. Cats usually become very ill from plague and can directly infect humans when they cough infectious droplets into the air. Dogs are less likely to be ill, but they can still bring plague-infected fleas into the home. In addition to flea bites, people can be exposed while handling skins or flesh of infected animals. As with many primarily zoonotic diseases, plague is a very severe disease in people, with case fatality rates of 50-60% if left untreated. Plague symptoms depend on how the patient was exposed to the plague bacteria. A person usually becomes ill with bubonic plague 2 to 6 days after being infected. Someone exposed to *Yersinia pestis* through the air would become ill within 1 to 3 days. When bubonic plague is left untreated, plague bacteria can invade the bloodstream where they multiply and spread rapidly throughout the body and cause a severe and often fatal condition called septicemic plague. Untreated bubonic plague can also progress into an infection of the lungs, causing pneumonic plague. If plague patients are not given specific antibiotic therapy, all forms of plague can progress rapidly to death. In animals, the incubation period is between 2-7 days after a bite.

#### **Key Facts**

- Plague is caused by the bacterium *Yersinia pestis*, a zoonotic bacterium usually found in small mammals and their fleas.
- People infected with *Yersinia pestis* often develop symptoms after an incubation period of one to seven days.
- Plague is transmitted between animals and humans by the bite of infected fleas, direct contact with infected tissues, and inhalation of infected respiratory droplets.
- Plague can be a very severe disease in people, with a case-fatality ratio of 30% to 60% for the bubonic type while the pneumonic type is always fatal when left untreated.
- Antibiotic treatment is effective against plague bacteria, so early diagnosis and early treatment can save lives.
- From 2010 to 2015, there were 3,248 cases reported worldwide, including 584 deaths.
- Currently, the three most endemic countries are the Democratic Republic of the Congo, Madagascar, and Peru.
- In Uganda, the West Nile region in northwestern Uganda encompasses the current plague focus (Joseph D Forrester et al) with a total of 255 human plague cases reported during 2008–2016. However due to sustained control efforts only 18 cases of plague were documented between 2014 to May 2019. (Prof. Julius J. Lutwama, UVRI/CDC- Uganda; personal communication).

#### **Signs and Symptoms in Humans**

Plague can take different clinical forms, but the most common are *bubonic*, *pneumonic* and *septicemic* plague.

**Bubonic plague:** Patients develop sudden onset of fever, headache, chills, and weakness and one or more swollen, tender and painful lymph nodes (called buboes). This form usually results from the bite of an infected flea. The bacteria multiply in the lymph node closest to where the bacteria entered the human body. If the patient is not treated with the appropriate antibiotics, the bacteria can spread to other parts of the body.

*Pneumonic plague:* Patients develop fever, headache, weakness, and a rapidly developing pneumonia with shortness of breath, chest pain, cough, and sometimes bloody or watery mucous. Pneumonic plague may develop from inhaling infectious droplets or may develop from untreated bubonic or septicemic plague after the bacteria spread to the lungs. The pneumonia may cause respiratory failure and shock. Pneumonic plague is the most serious form of the disease and is the only form of plague that can be spread from person to person (by infectious droplets).

*Septicemic plague:* Patients develop fever, chills, extreme weakness, abdominal pain, shock, and possibly bleeding into the skin and other organs. Skin and other tissues may turn black and die, especially on fingers, toes, and the nose. *Septicemic plague* can occur as the first symptom of plague or may develop from untreated bubonic plague. This form results from bites of infected fleas or from handling an infected animal and direct contact with infected materials through cracks in the skin.

### **Signs and Symptoms in Animals**

The symptoms associated with bubonic plague will include painful swollen lymph nodes, fever, inflammation, depression, vomiting, dehydration, diarrhea, enlarged tonsils, and anorexia. The head and neck area will swell considerably, and should the animal survive, its lymph nodes may form an abscess and then rupture and drain. Other symptoms include discharge from the eyes, mouth ulcers, and a loss of appetite, with weight loss being evident.

**Table 13. Primary, Secondary and Tertiary Audiences**

<i>Primary Audiences</i>	<i>Secondary Audiences</i>	<i>Tertiary Audiences</i>
<ul style="list-style-type: none"> <li>- General population</li> <li>- Hunters</li> <li>- Housewives</li> <li>- Children</li> <li>- People with disabilities</li> <li>- Health workers</li> <li>- Attendants of patients</li> <li>- Pet owners (e.g. cats, dogs)</li> <li>- Farmers (dog breeders)</li> </ul>	<ul style="list-style-type: none"> <li>- VHTs</li> <li>- Health workers</li> <li>- Community extension workers</li> <li>- Veterinary scouts</li> <li>- Wildlife and vermin control officers</li> </ul>	<ul style="list-style-type: none"> <li>- Political leaders (RDCs, Councilors, MPs)</li> <li>- Opinion leaders</li> <li>- Religious leaders</li> <li>- Traditional healers</li> </ul>

### **Current and Desired Behaviors of Targeted Audiences**

**Audience profile.** Target audiences are people (males and females of all ages) who live in environments that are heavily infested with fleas and rats. People who keep cats and dogs are at an increased risk of contracting plague if their animals have infected fleas that may eventually bite them.

#### **Current Behavior**

- Living in environments with a lot of rats infested with fleas
- Sharing accommodation with animals
- Failure to take sick pets to the veterinarian for treatment

**Desired Behavior:** Pet owners, hunters and members of the general public are able to: a) improve their hygiene and general living conditions by storing their food safely, avoid sleeping with pets in the same bed, and report cases of bites from fleas; b) go for treatment immediately they are bitten by fleas, and c) take their pets to the Veterinarian whenever they fall sick d) avoid contact with dead rodents.

### **Communication Objectives**

- To increase the target audience's knowledge and awareness of signs and symptoms and prevention and control measures for plague
- To increase the target audience's knowledge of the need to seek treatment for their sick pets regularly
- To increase the target audience's perception of plague as a serious infection that they should strive to avoid.

**Table 14. Key Messages, Communication and Distribution Channels**

	<b>General Health Risk Messages</b>	<b>Preparedness Phase Messages</b>	<b>Response Phase Messages</b>	<b>Recovery Phase Messages</b>
<b>Key messages</b>	<ul style="list-style-type: none"> <li>- Plague is transmitted by a bite of infected fleas, direct contact with infected tissues and by inhaling infected respiratory droplets</li> <li>- The transmission happens at close distance (usually defined as less than two meters) and only symptomatic patients are infectious</li> <li>- The infection can cause severe disease in humans but can be successfully treated with antibiotics, especially if antibiotic treatment is initiated early</li> <li>- A surgical mask and standard infection control precautions can be used to effectively reduce the spread of droplets from a suspected patient, if isolation measures are not possible</li> <li>- A surgical mask can be used to protect travelers (e.g. passengers) from infection by a suspected pneumonic plague case. This is very relevant to persons handling travelers e.g. at airports and bus terminals</li> </ul>	<ul style="list-style-type: none"> <li>- Eliminate nesting places for rodents around homes, sheds, garages, and recreation areas by removing brush, rock piles, trash, and excess firewood</li> <li>- The transmission happens at close distance (usually defined as less than two meters) and only symptomatic patients are infectious.</li> <li>- The infection can cause severe disease in humans but can be successfully treated with antibiotics, especially if antibiotic treatment is instituted early.</li> <li>- A surgical mask and standard infection control precautions can be used to effectively reduce the spread of droplets from a suspected patient, if isolation measures are not possible.</li> <li>- A surgical mask can be used to protect travelers (e.g. passengers) from infection by a suspected pneumonic plague case.</li> <li>- Avoid handling dead animals</li> <li>- Seek immediate medical attention in case of signs and symptoms consistent with plague</li> <li>- Smear/cement the house floor to prevent flea multiplication</li> <li>- Spray the house to kill fleas</li> </ul>	<p><b>In humans</b></p> <ul style="list-style-type: none"> <li>- Avoid picking up or touching dead animals.</li> <li>- Wear gloves if you must handle sick or dead animals.</li> <li>- Report sick or dead animals to the local health unit or law enforcement officials.</li> <li>- Do not let pets sleep in the bed with you. This has been shown to increase your risk of getting plague.</li> <li>- Store food away from the house</li> <li>- Kill all rats and properly dispose of dead ones (Trap rats live so the fleas can be killed off)</li> <li>- Spray the house to kill fleas</li> <li>- Avoid direct contact with infected tissues</li> <li>- Keep a 2-metre distance from an infected person who is coughing</li> <li>- Infected persons with cough should wear surgical masks</li> </ul>	<ul style="list-style-type: none"> <li>- Store food away from the house</li> <li>- Kill all rats and properly dispose of dead ones (Trap rats live so the fleas can be killed off)</li> </ul>

Table 14. Key Messages, Communication and Distribution Channels (Cont....)

	General Health Risk Messages	Preparedness Phase Messages	Response Phase Messages	Recovery Phase Messages
			<b>In animals</b> <ul style="list-style-type: none"> <li>- Treat dogs and cats for fleas regularly</li> <li>- Keep pet food in rodent-proof containers.</li> <li>- Take sick pets to the veterinarian promptly</li> </ul>	
<b>Communication Channels</b>	<ul style="list-style-type: none"> <li>- Radios: talk shows, DJ mentions, radio spots</li> <li>- Print: IEC materials e.g. posters, fliers, fact sheets</li> <li>- Community dialogues e.g. Baraza meetings, village meetings</li> <li>- Social media</li> <li>- Interpersonal communication e.g. door to door engagements and talking points</li> </ul>	<ul style="list-style-type: none"> <li>- Radios: talk shows, DJ mentions, radio spots</li> <li>- Print: IEC materials e.g. posters, fliers, fact sheets</li> <li>- Community dialogues e.g. Baraza meetings, village meetings</li> <li>- Social media</li> </ul>	<ul style="list-style-type: none"> <li>- Radios: talk show</li> <li>- IEC materials</li> <li>- Community dialogues</li> <li>- <i>Baraza</i> meetings</li> <li>- Use of social media</li> <li>- Public Notice Boards</li> <li>- Interpersonal communication e.g. door to door engagements and talking points</li> <li>- Television</li> </ul>	<ul style="list-style-type: none"> <li>- Radios talk shows, DJ mentions, radio spots</li> <li>- Print: IEC materials e.g. posters, fliers, fact sheets</li> <li>- Community dialogues</li> <li>- <i>Baraza</i> meetings e.g. village meetings</li> <li>- Social media</li> </ul>
<b>Distribution Channels</b>	<ul style="list-style-type: none"> <li>- Public Notice Boards</li> <li>- Cultural and traditional structures</li> <li>- Churches and the mosques</li> <li>- Local leadership</li> <li>- MoH/MAAIF structures e.g. DHO, health facilities, VHTs, DVO</li> </ul>	<ul style="list-style-type: none"> <li>- Public Notice Boards</li> <li>- Cultural and traditional structures</li> <li>- Churches and the mosques</li> <li>- Local leadership</li> <li>- MoH/MAAIF structures e.g. DHO, health facilities, VHTs, DVO</li> </ul>	<ul style="list-style-type: none"> <li>- Public Notice Boards</li> <li>- Cultural and traditional structures</li> <li>- Churches and the mosques</li> <li>- Local leadership</li> <li>- MoH/MAAIF structures e.g. DHO, health facilities, VHTs, DVO</li> </ul>	<ul style="list-style-type: none"> <li>- Public Notice Boards</li> <li>- Cultural and traditional structures</li> <li>- Churches and the mosques</li> <li>- Local leadership</li> <li>- MoH/MAAIF structures e.g. DHO, health facilities, VHTs, DVO</li> </ul>



### 5.3.7 RABIES

**Disease Profile:** Rabies infection is caused by the rabies virus. The rabies virus is found in the saliva of infected animals. The virus is transmitted through the bite of an infected animal, or through saliva contamination of the mucous membranes. The rabies virus does not penetrate intact skin. The virus then travels along the nerves until it reaches the central nervous system, the spinal cord, the brain, and from there it reaches the salivary glands and is then shed into the saliva. The incubation period for rabies in humans is typically 2-3 months however; it can range from 7 days to 1 year. The incubation period depends on factors inclusive of: location and severity of the wound caused by the bite of an infected animal, the amount of virus inoculated within the wound and the number of nerves around the area bitten by a rabid dog. Rabies is almost always fatal once clinical signs appear. No specific treatment is available for clinical rabies. However, clinical rabies can be prevented through vaccination given before or immediately after an exposure. Although rabies is a fatal disease, survival has been documented in at least 15 cases around the world. Almost all survivors had received at least a partial course of preventative, pre-exposure prophylaxis (PrEP) that might have modified the course of illness. All survivors experienced severe, debilitating sequelae on recovery.

#### Key Facts

- Rabies is a viral disease which occurs in more than 150 countries and territories worldwide.
- Rabies is mainly transmitted by rabid dogs and cats. However, there are cases where rabies has been transmitted by bats in addition to rabid foxes, monkeys, goats and cows.
- 99 % of human deaths due to rabies are from bites of rabid dogs.
- Rabies control is feasible through vaccination of dogs and cats.
- The fatality rate of rabies is very high almost 100% once clinical signs appear.
- Infection causes about 59,000 deaths every year globally but, mainly in Asia and Africa.
- In Uganda 120 deaths were registered between the years 2013-2015, 44 in 2016 and 21 in 2017. (Personal comm. Dr. Muwanguzi D, SPHVO, Ministry of Health)
- 40% of people bitten by suspect rabid animals are children under 15 years of age and about half of all deaths occur in this age group
- Immediate, thorough wound washing with soap and water after contact with a suspect rabid animal is crucial and can save lives.
- All rabid cats and dogs should be eliminated by skilled professionals.

#### Signs and Symptoms of Rabies in Humans

People with rabies have the following signs and symptoms:

- pain or itching sensation at the bitten site or wound
- headache, fever
- hydrophobia (fear of water); at a later stage the mere sight of water may provoke spasms in the neck.
- intolerance to noise and bright light.
- difficulty in swallowing, nausea, vomiting
- localized weakness, paralytic syndromes
- neurological dysfunction, progressing within days, including but not limited to hyperactivity. Anxiety, confusion and agitation. As the disease progresses, the person may experience delirium, hallucinations, insomnia and other abnormal behaviors
- unconsciousness

Death is caused by cardiac or respiratory failure, typically within 7–10 days after the first signs, if no intensive care is instituted. There is currently no effective treatment for rabies after clinical signs appear.

### Signs and symptoms in animals

Rabies in animals appears in two forms; the furious and paralytic or dumb form both begin with a change in normal behavior.

The furious form manifests as:

- unprovoked abnormal aggression “the mad-dog syndrome” (e.g. biting two or more people or animals and/or inanimate objects without provocation)
- restlessness
- lethargy
- abnormal vocalization (e.g. hoarse barking and growling or inability to make a sound)

Excessive salivation or foaming at the edges of the mouth, convulsions, followed by paralysis and death

The dumb form manifests as:

- incoordination paralysis,
- Excessive salivation and death
- However, death usually occurs within 10 days after the onset of symptoms.

The incubation period is variable and ranges from 15-50 days but may go up to a year depending on the site of the bite. Any bite from a dog in an area endemic for rabies should be considered a potential risk.

**Table 15. Primary, Secondary and Tertiary audiences**

<i>Primary Audiences</i>	<i>Secondary Audiences</i>	<i>Tertiary Audiences</i>
<ul style="list-style-type: none"> <li>- Pet owners</li> <li>- Hunters</li> <li>- Children</li> <li>- Veterinary and animal health practitioners</li> <li>- Wildlife staff.</li> </ul>	<ul style="list-style-type: none"> <li>- Human Health practitioners</li> <li>- Veterinary officer and animal health practitioners</li> <li>- CHEWs and CAHWs</li> <li>- Local leaders and influencers e.g. LC chairpersons, etc.</li> </ul>	<ul style="list-style-type: none"> <li>- Political and administrative leaders (RDC, LCV, MPs, Town Clerks etc.)</li> <li>- Religious leaders</li> <li>- Cultural leaders</li> <li>- MDAs</li> <li>- Donors and bilateral agencies</li> <li>- OIE, WHO, FAO</li> </ul>

### *Current and Desired Behaviors of Targeted Audiences*

**Audience profile:** Target audiences are males and females of all ages who are in close contact with animals that can be infected with rabies.

### **Current Behavior**

#### *Behavioral Risks*

- Child playing with rabid pets
- Slaughtering rabid animals
- Failure to vaccinate dogs and cats

**Desired Behavior:** Pet owners, hunters and members of the general public are able to: a) report cases of dog and cat bites; b) go for treatment immediately when they are bitten by dogs and cats; and c)

reduce the number of stray dogs and cats; d) members of the general public identify and report dogs and cats suspected of having rabies and e) have their pets regularly vaccinated against rabies

**Communication Objectives**

- To increase pet owners' knowledge of the need to vaccinate their dogs and cats routinely.
- To ensure that pet owners safeguard their animals from straying around.
- To increase knowledge of the public about the dangers posed by stray dogs

**Table 16: Key Messages, Communication and Distribution Channels**

	General Health Risk Messages	Preparedness Phase Messages	Response Phase Messages	Recovery Phase Messages
<b>Key messages</b>	<ul style="list-style-type: none"> <li>- Rabies is transmitted by a bite of an infected animal</li> <li>- Rabies is a dangerous disease that kills</li> <li>- Rabies is preventable</li> <li>- Vaccinate your dogs and cats regularly</li> <li>- Always restrain your dogs and cats from straying around aimlessly</li> <li>- Always report dog and cat bites to the nearest health facilities</li> <li>- People should keep away from stray dogs</li> <li>- Individuals or professionals who handle rabid animals and their tissues must use specialized personal protective equipment and consult infectious disease specialists if they suspect they have been exposed to rabies-infected carcasses</li> </ul>	<ul style="list-style-type: none"> <li>- Vaccinate all your dogs and cats over the age of three months every year<sup>6</sup> to avoid rabies</li> <li>- People should keep away from stray dogs</li> <li>- Avoid touching or patting strange, injured or sick animals</li> </ul>	<ul style="list-style-type: none"> <li>- Avoid contact with suspicious animals during outbreak</li> <li>- If you are bitten by any animal, you must: a) wash the wound immediately for 15min with soap and running water; b) put disinfectant such as Dettol on the wound; and c) get to a health facility immediately for specialized care and treatment</li> <li>- It is important to complete the treatment in order to prevent rabies.</li> <li>- If you have been bitten by a rabid dog or cat: a) safely confine the animal, where possible, and collect information on it and the bite circumstance to provide information to the health care professional and public health officer; b) keep the animal confined and under observation for 10 days<sup>7</sup>.</li> <li>- Avoid applying irritants to the wounds such as chili powder, plant juices, acids and alkalis.</li> <li>- Do not cover the wound with dressings or bandages.</li> </ul>	<ul style="list-style-type: none"> <li>- Rabies is a dangerous disease that kills but it's preventable</li> <li>- Vaccinate your dogs and cats regularly (If 70% or more of the dogs in your area are consistently vaccinated, the disease will disappear)</li> <li>- Always restrain your dogs from straying around aimlessly</li> <li>- Always report dog bites to the nearest health facilities</li> <li>- People should keep away from stray dogs</li> <li>- Rabies is transmitted by bite of an infected animal</li> <li>- Individuals or professionals who slaughter rabies-infected mammals and handle tissues of rabid animals should use specialized personal protective equipment and consult infectious disease specialists if they suspect they have been exposed to rabies-infected carcasses</li> </ul>

<sup>6</sup> Achieving vaccination coverage of at least 70% should be enough to maintain the required level of herd immunity in the susceptible animal population

<sup>7</sup>An animal infected with rabies will usually show clinical signs, or die, within 1-7 days, providing the basis of the 10-day observation period.

**Table 16: Key Messages, Communication and Distribution Channels (Cont....)**

	General Health Risk Messages	Preparedness Phase Messages	Response Phase Messages	Recovery Phase Messages
	<ul style="list-style-type: none"> <li>- Human-to-human transmission of rabies is extremely rare. However, caregivers should be vigilant when looking after patients with rabies and avoid contact with their saliva and other excretions</li> <li>- Hand washing and good personal hygiene are of utmost importance when caring for patients with rabies</li> </ul>		<ul style="list-style-type: none"> <li>- Consumption of uncooked meat from a rabid animal, butchering or eating a rabid animal may potentially transmit rabies.</li> <li>- If a rabid animal dies, its carcass should be buried or burned if possible, with advice from a veterinary professional</li> </ul>	<ul style="list-style-type: none"> <li>- Human-to-human transmission of rabies is extremely rare. However, caregivers should be vigilant when looking after patients with rabies and avoid contact with their saliva and other excretions</li> <li>- Hand washing and good personal hygiene are of utmost importance when caring for patients with rabies</li> </ul>
<b>Communication Channels</b>	<ul style="list-style-type: none"> <li>- Mass media (Radio, TV)</li> <li>- Print media</li> <li>- Social media</li> <li>- Factsheets, brochure, fliers and posters</li> <li>- Health Facilities</li> <li>- Places of worship</li> <li>- Markets and community centers</li> <li>- Public and social gatherings</li> <li>- Community outreaches</li> <li>- Interpersonal communication (Health education, <i>Baraza</i>, community dialogue)</li> </ul>	<ul style="list-style-type: none"> <li>- Mass media (Radio, TV)</li> <li>- Social media</li> <li>- Factsheets, brochure, fliers and posters</li> <li>- Hospitals/ Health Centers</li> <li>- Churches</li> <li>- Markets</li> <li>- Public gatherings</li> <li>- Community outreaches</li> <li>- Interpersonal communication (Health education, <i>Baraza</i>, community dialogue)</li> </ul>	<ul style="list-style-type: none"> <li>- Mass media (Radio, TV)</li> <li>- Social media</li> <li>- Print media</li> <li>- Factsheets, brochure, fliers and posters</li> <li>- Hospitals/ Health Centers</li> <li>- Churches</li> <li>- Markets</li> <li>- Public gatherings</li> <li>- Community outreaches</li> <li>- Interpersonal communication (Health education, <i>Baraza</i>, community dialogue)</li> </ul>	<ul style="list-style-type: none"> <li>- Mass media (Radio, TV)</li> <li>- Social media</li> <li>- Print media</li> <li>- Factsheets, brochure, fliers and posters</li> <li>- Hospitals/ Health Centers</li> <li>- Churches</li> <li>- Markets</li> <li>- Public gatherings</li> <li>- Community outreaches</li> <li>- Interpersonal communication (Health education, <i>Baraza</i>, community dialogue)</li> </ul>
<b>Distribution Channels</b>	<ul style="list-style-type: none"> <li>- CAHW, VHT/CHEW</li> <li>- Community gatherings</li> <li>- Health facilities</li> <li>- Places of worship (Churches, Mosques)</li> <li>- Markets</li> <li>- Home visits</li> <li>- Community outreaches-</li> </ul>	<ul style="list-style-type: none"> <li>- CAHW, VHT/CHEW</li> <li>- Community gatherings</li> <li>- Health facilities</li> <li>- Places of worship (Churches, Mosques)</li> <li>- Markets</li> <li>- Home visits</li> <li>- Community outreaches</li> </ul>	<ul style="list-style-type: none"> <li>- CAHW, VHT/CHEW</li> <li>- Community gatherings</li> <li>- Health facilities</li> <li>- Places of worship (Churches, Mosques)</li> <li>- Markets</li> <li>- Home visits</li> <li>- Community outreaches</li> </ul>	<ul style="list-style-type: none"> <li>- CAHW, VHT/CHEW</li> <li>- Community gatherings</li> <li>- Health facilities</li> <li>- Places of worship (Churches, Mosques)</li> <li>- Markets</li> <li>- Home visits</li> <li>- Community outreaches</li> </ul>

## 6.0 IMPLEMENTATION AND COORDINATION ARRANGEMENTS FOR RISK COMMUNICATION

The success of any communication strategy depends heavily not only on the quality of the message but also on the effectiveness of the coordination. To address the critical need for strong coordination, the One Health Framework, 2016 recommended the setting up of a One Health Technical Working Group (OHTWG). The OHTWG is composed of 16-20 technical experts and policy makers from the four key sectors i.e. MAAIF, MOH, MWE and UWA as well as other government institutions, and relevant stakeholders. The representatives of government ministries/institutions include directors or their delegated representatives; relevant commissioners and other nominated technical staff by the respective directors. It is chaired by the directors from the four sectors on a six months rotational basis.

The functions of the OHTWG are listed in Table 18.

### 6.1 Implementation and Coordination of the Strategy at the National Level

All coordination aspects pertaining to this strategy shall be handled by the Zoonotic Disease Coordination Office (ZDCO). ZDCO was established as the NOHP Secretariat in November 2016 through a memorandum of understanding between the line ministries responsible for human, livestock, wildlife, and environmental health. At the sector level, implementation and coordination efforts will be done by the respective Communication Officers from the Ministries of Health, Agriculture, Animal Industry and Fisheries, Water and Environment as well as Uganda Wildlife Authority. In addition, stakeholders will implement the strategy by integrating it into their routine sector communication activities. Sectors will develop annual communication plans based on the communication strategy which they will implement with guidance from ZDCO as a communication hub. ZDCO will coordinate the implementation of the One Health Risk Communication activities under the supervision of OHTWG.

#### **The policy, strategy and communication sub-committee**

The Zoonotic Disease Coordination Office is composed of four sub-committees, each responsible for a specific area of specialty: anti-microbial resistance; research and training; surveillance, preparedness and response; policy, strategy, and communication. The policy, strategy and communication sub-committee will specifically be tasked with ensuring that all communication materials and messages arising from this strategy are fully aligned with the strategy. Specifically, the sub-committee will perform the following tasks:

- Identify a key spokesperson, who is a trusted source of information
- Institute regular press briefings (daily or weekly) during disease outbreaks to keep the media informed of the response to the outbreak in the affected regions. Use the press briefings to address any myths and circulating rumors about the outbreak.
- Create a social media channel that is updated regularly with ongoing response activities and up-to-date information about the outbreak as it becomes available. The social media channels might include Twitter, Facebook, and WhatsApp, among others. Use the social media platforms to address myths and rumors about the outbreak.
- Prepare an emergency communication plan when the first case of the outbreak occurs
- Monitor to ensure that messages and materials are reaching the intended audience and are clearly understood by the audience.

## 6.2 Implementation and Coordination at Sub-National Level

Implementation of the One Health Risk Communication Strategy at the sub-national level will require the establishment of risk communication committees at parish, sub-county and district level. This will ensure the systematic and coordinated implementation of risk communication activities of multiple partners within a given geographical location. The risk communication committees will be mirrored around the National One Health Platform. Thus, they will have a representation of the Ministries of Health; Agriculture and Animal Industries; Water and Environment; Uganda Wildlife Authority; national and international civil society, donor agencies and/or implementing partners and the private sector. At the district level, the National One Health Platform will work with the current social mobilization committees of the District One Health Teams. It is presumed that these will eventually evolve into district risk communication committees. At sub-county and parish levels, new committees will be formed to support this role. **Table 18** details the proposed members that should constitute the risk communication committees at district, sub-county and parish levels and their respective roles.

**Table 17: Membership of the Risk Communication Committees at Different Levels**

	Members	Roles and responsibilities	Comments
<b>National</b>	<ol style="list-style-type: none"> <li>1. One Health Technical Working Group</li> <li>2. Policy Strategy and Communication Sub Committee Of the OHTWG</li> </ol>	<p><b>One Health Technical Working Group</b></p> <ul style="list-style-type: none"> <li>- Provide policy direction and strategic planning to guide implementation of risk communication in the country;</li> <li>- Ensure accountability of risk communication from all sectors;</li> <li>- Provide an enabling environment and allocation of necessary resources for effective implementation of risk communication interventions;</li> <li>- Provide high level political support.</li> <li>- Link with other relevant sectors, institutions and stakeholders.</li> <li>- Mobilize resources from donors, government and other stakeholders to support ZDCO and OH implementation in the country.</li> </ul> <p><b>Policy Strategy and Communication Sub-Committee of the OHTWG</b></p> <ul style="list-style-type: none"> <li>- Establish policies that facilitate sectors to budget for communication activities</li> <li>- Establish regular information sharing fora during which the respective ministries and partners receive updates on OH activities</li> <li>- Establish communication systems within and across the sectors that ensure feedback</li> <li>- Train sector staff on communication skills</li> <li>- Document lessons learnt and best practices</li> <li>- Put in place a system that restricts the sharing of sensitive information</li> <li>- Provide technical support in the translation of key sections of the strategy into local languages for the benefit of non-English speaking audiences</li> </ul>	<p><b>Leadership</b></p> <ul style="list-style-type: none"> <li>- The Chair of the OHTWG will rotate among the technical heads of the collaborating line ministries (MAAIF, MoH, MWE and UWA, an agency under the Ministry of Wildlife, Tourism, and Antiquities) on a semi-annual basis.</li> <li>- The rotating Chairs of the OHTWG will have overall oversight for coordination of the implementation of the Risk Community Strategy.</li> </ul>



Table 17: Membership of the Risk Communication Committees at Different Levels (Cont....)

	Members	Roles and responsibilities	Comments
National	3. National Task Force	<p><b>National Task Force</b></p> <ul style="list-style-type: none"> <li>- Conducting surveillance of infectious diseases and risk analysis in the country.</li> <li>- Establishing clear lines of responsibility for planned actions.</li> <li>- Providing the expert resources for management of outbreaks when necessary.</li> <li>- Conducting regular meetings to evaluate the national preparedness for the management of outbreaks and make recommendations for improvements.</li> <li>- Predicting and planning for potential future outbreaks.</li> <li>- Determining additional resources needed for a rapid response.</li> <li>- Ensuring the availability of trained personnel for outbreak preparedness and response</li> <li>- Maintaining an inventory of expert resources (local and international).</li> <li>- Conducting regular training and simulation exercises.</li> <li>- Ensuring adequate resource allocation and deployment of resources for preparedness and response at national and district levels.</li> <li>- Coordination &amp; collaboration in managing outbreaks</li> </ul>	

**Table 17: Membership of the Risk Communication Committees at Different Levels (Cont....)**

	Members	Roles and responsibilities	Comments
	4. ZDCO	<p><b>ZDCO</b></p> <ul style="list-style-type: none"> <li>- Establish a one-stop centre where all information is shared under OH approach.</li> <li>- Coordinate response to zoonotic disease outbreaks working closely with the respective sector ministries, the EOC and the national task force</li> <li>- Coordinate with the respective ministries, partners and other agencies on the implementation of the decisions of the OHTWG</li> <li>- Coordinate the development, review and regular updating of the priority zoonotic diseases list</li> <li>- Coordinate the development and implementation of the OH strategic plan</li> <li>- Prepare annual work-plans and budgets for OH implementation and for prevention and control of zoonotic diseases in line with the strategic plan</li>   <li>- Prepare and submit quarterly and annual reports to the OHTWG and the respective key sector ministries/institutions</li> <li>- Establish and maintain a joint repository of surveillance data on priority zoonotic diseases</li> <li>- Spearhead the development, testing, and implementation of multi-sectoral preparedness and response plans for zoonotic diseases</li> <li>- Leverage resources from the different agencies</li> <li>- Convene regular and ad-hoc coordination meetings</li> </ul>	<ul style="list-style-type: none"> <li>- ZDCO shall be the secretariat of the National One Health Platform (NOHP) in the country and will coordinate implementation of OH activities under the supervision of the OHTWG</li> </ul>

**Table 17: Membership of the Risk Communication Committees at Different Levels (Cont....)**

	Members	Roles and responsibilities	Comments
<b>District</b>	<ul style="list-style-type: none"> <li>- District Health Educator</li> <li>- District Veterinary Officer</li> <li>- District Information Officer</li> <li>- District Surveillance Officer</li> <li>- District Agriculture Officer</li> <li>- District Internal Security Officer</li> <li>- District Community Development Officer.</li> <li>- District Environmental Officer</li> <li>- A representative from the Inter religious council</li> <li>- Secretary for Health</li> <li>- Cultural leaders</li> <li>- Local and international civil society organizations,</li> <li>- Private Sector representatives</li> <li>- Donor agencies and/or implementing partners</li> </ul>	<p><b>Pre-emergency</b></p> <ul style="list-style-type: none"> <li>- Establish a risk communication plan for sharing information with the community before, during and after the disaster.</li> <li>- Coordinate orientation of sub-county and parish risk communication committees in Risk Communication (RC).</li> <li>- Regularly update media contact list.</li> </ul> <p><b>During emergency</b></p> <ul style="list-style-type: none"> <li>- Collect all myths, rumors, and misconceptions from the community.</li> <li>- Respond and support other committees to respond rumors, myths, and misconceptions.</li> <li>- Oversee and co-ordinate risk communication activities in the district.</li> <li>- Organize for media engagement.</li> <li>- Supervise sub-county and parish risk communication activities.</li> <li>- Regularly provide feedback to the District Task Force on emerging issues on risk communication.</li> <li>- Provide regular updates to the sub-county committees.</li> </ul>	<p><b>Selection criteria</b></p> <ul style="list-style-type: none"> <li>- The committee mirrors the one-health framework.</li> <li>- Each member has a forum to communicate risk.</li> <li>- Some members of this committee sit on other sub-committees of the District Technical Working group. Hence, an opportunity to feed risk communication issues into them.</li> <li>- Ensure gender representation on all the committees.</li> </ul> <p><b>Leadership</b> The sub-committee will be co-chaired by the DHE and DVO and will be responsible to report on RC issues in the District Task Force.</p>

**Table 17: Membership of the Risk Communication Committees at Different Levels (Cont....)**

	Members	Roles and responsibilities	Comments
<b>Sub-County</b>	<ul style="list-style-type: none"> <li>- Sub-County Chief</li> <li>- LCIII Chairperson</li> <li>- Gombola Internal Security Officer</li> <li>- Production Officer</li> <li>- Agriculture extension worker</li> <li>- Sub-county Veterinary Officer</li> <li>- Health Assistant</li> <li>- Facility in-charge-HCIII</li> <li>- Chairperson of the business community- private sector rep</li> <li>- Community Development Officer</li> <li>- Cultural leaders</li> <li>- Civil society organizations</li> </ul>	<ul style="list-style-type: none"> <li>- Regularly update parish committees with new information.</li> <li>- Supervise activities of the parish committees.</li> <li>- Provide regular updates to the district sub-committees.</li> </ul>	<p><b>Selection criteria</b></p> <ul style="list-style-type: none"> <li>- Modeled along the same principles as the district</li> </ul> <p><b>Leadership</b></p> <ul style="list-style-type: none"> <li>- The sub-committee will be chaired by the Sub-County Chief</li> </ul>
<b>Parish</b>	<ul style="list-style-type: none"> <li>- Parish Chief</li> <li>- LC II Chairperson</li> <li>- VHT Coordinator</li> <li>- Parish Internal Security Officer</li> <li>- Elder/opinion leader</li> <li>- Representation of the Youth Groups</li> <li>- Representation of Women Groups</li> <li>- Community Animal Health Workers</li> <li>- Facility In-charge HC II</li> </ul>	<ul style="list-style-type: none"> <li>- Report alert /suspected outbreaks to the district committees through the Sub-County Committee.</li> <li>- Supervise risk communication activities at village level</li> <li>- Report feedback from the community to the sub-county committee</li> <li>- Carry out community sensitization</li> </ul>	<p><b>Selection criteria</b></p> <ul style="list-style-type: none"> <li>- Modeled along the same principles as the district</li> </ul> <p><b>Leadership</b></p> <ul style="list-style-type: none"> <li>- The sub-committee will be chaired by the Parish Chief</li> </ul>

**Table 18: Summary of Public and Private Partners at Regional, District and Sub-County Levels**

Public Partners	Private Partners
<p><b>Regional Level</b></p> <ul style="list-style-type: none"> <li>- Members of parliament</li> <li>- Line ministries</li> <li>- Regional Referral Hospitals</li> </ul>	<ul style="list-style-type: none"> <li>- Non-government organizations</li> <li>- Media houses (TVs and Radios)</li> <li>- Entrepreneurs</li> <li>- Charity organizations (Rotary, Lions club)</li> <li>- Corporations</li> </ul>
<p><b>District Level</b></p> <ul style="list-style-type: none"> <li>- Extension service providers</li> <li>- Political leaders (Local council five, councilors)</li> <li>- Resident district commissioners</li> </ul>	<ul style="list-style-type: none"> <li>- Non-government organizations</li> <li>- Business community</li> <li>- Media houses including radio stations</li> <li>- Private not-for-profit and private for-profit organizations</li> </ul>
<p><b>Sub County Level</b></p> <ul style="list-style-type: none"> <li>- Extension service providers</li> <li>- Political leaders (LC1, LC11)</li> <li>- Religious leaders and faith-based organizations</li> </ul>	<ul style="list-style-type: none"> <li>- CBOs and NGOs</li> <li>- Business community</li> <li>- Opinion leaders</li> <li>- Private not for profit organizations and private for-profit organizations</li> </ul>

## 7.0 MONITORING AND EVALUATION OF THE ONE HEALTH RISK COMMUNICATION STRATEGY

To ensure the attainment of the stated goals and objectives, monitoring and evaluation (M&E) shall be integrated as a key component in implementation of the strategy. Monitoring shall help to provide information to assess whether attainment of targets is on track and will help detect and correct weaknesses in implementation. At every level of implementation, sectors are expected to establish their own monitoring mechanisms for tracking progress. It is expected that best practices and lessons learned will be shared and disseminated to provide benchmarks for other programs with similar interventions. The communication strategy promotes evidence-informed communication interventions. Accordingly, all SBCC interventions arising from this strategy shall be preceded by baseline assessment. This shall provide key inputs into the evaluation of programs. Evaluation of communication interventions shall be undertaken to assess the extent to which set objectives have been achieved.

To ensure that the implementation of the communication strategy is transparent, timely, and effective, ZDCO in close consultation with OHTWG will oversee the monitoring of progress toward objectives. ZDCO will define and undertake a program of baseline surveys and studies, including those needed in support of ongoing evaluation, medium-term and terminal review processes, and ensure that monitoring data are captured, analyzed, and shared with key stakeholders. To ensure that this process is data-driven, a baseline study will be conducted to collect data necessary to fill the missing data gaps as shown in **Table 20** below, while medium-term and final evaluations will be conducted in the second and third year of strategy implementation, respectively. Data will be collected on the behavioral, cultural, religious and epidemiological aspects pertaining to each of the seven priority zoonotic diseases. It will be the responsibility of ZDCO to support the development of the data collection tools to guide the collection of M&E data that pertain to this strategy. Data collection should be done on a routine basis (e.g. quarterly and annually) working through the existing reporting mechanisms. **Table 20** below summarizes the general and specific indicators that pertain to (A) **Strategic** and (B) **Communication** objectives of this strategy.

**Table 19: Monitoring and Evaluation Indicator Matrix for The Strategic Objectives the Strategy**

<b>Overall Goal: To Contribute to The Implementation of The National One Health Strategic Plan of Building Resilient, Sustainable Systems That Can Prevent, Detect and Respond to Zoonotic Diseases in A Timely Manner</b>					
<b>General indicators</b>	<b>Baseline (%/No.) (see references below)</b>	<b>Target<sup>8</sup> (%/No.) (2020/21)</b>	<b>Data sources</b>	<b>Frequency of collection</b>	<b>Responsibility</b>
<b>A: STRATEGIC OBJECTIVES</b>					
<b>Strategic Objective 1:</b> To ensure that communication and social mobilization interventions implemented by the government; donors; international and local civil society organizations; the media and private sectors are effectively coordinated					
<b>Indicators</b>					
Number of Social Mobilization and Risk Communication sub-committee periodic meetings attended by government; donors; international and local civil society organizations and private sectors (disaggregated by (i) national and (ii) district levels)	Unknown	8	Minutes/Reports	Annual	Mandated GOU MDAs at all levels
Number of media engagements carried out during outbreaks at national and sub-national levels.	Unknown	8	Minutes/Reports	Annual	Mandated GOU MDAs at all levels
<b>Strategic Objective 2:</b> To strengthen strategic risk communication information and knowledge management systems to improve preparedness, response and recovery of disease outbreaks at all levels					
<b>Indicators</b>					
Functional risk communication M&E systems in place at national	Unknown	1	Minutes/Reports	Annual	Mandated GOU MDAs at all levels
% of organizations and implementing partners at different levels documenting and sharing experiences, lessons learned, and best practices	Unknown	50%	Minutes/Reports	Annual	Mandated GOU MDAs at all levels
% of stakeholders contributing to an established risk communication information system	Unknown	50%	Minutes/Reports	Annual	Mandated GOU MDAs at all levels
Number and type of fora organized to share risk communication disaggregated data, lessons and best practices	Unknown	4	Minutes/Reports	Annual	Mandated GOU MDAs at all levels
<b>Strategic Objective 3:</b> To strengthen the institutional and technical risk communication capacities of organizations and implementing partners at different levels					
<b>Indicators</b>					
% of districts showing increased capacity to collect, analyze, report and utilize risk communication data	Unknown	50%	Minutes/Reports	Annual	Mandated GOU MDAs at all levels

<sup>8</sup> Targets set based on the hierarchy of communications effect model

<b>Overall Goal: To Contribute to The Implementation of The National One Health Strategic Plan of Building Resilient, Sustainable Systems That Can Prevent, Detect and Respond to Zoonotic Diseases in A Timely Manner</b>						
<b>General indicators</b>	<b>Baseline (%/No.) (see references below)</b>	<b>Target<sup>8</sup> (%/No.) (2020/21)</b>	<b>Data sources</b>	<b>Frequency of collection</b>	<b>Responsibility</b>	
% of districts with gender responsive programs and reports	Unknown	50%	Minutes/Reports	Annual	Mandated GOU MDAs at all levels	
% of organizations and implementing partners at different levels with improved organizational capacity assessment scores	Unknown	50%	Minutes/Reports	Annual	Mandated GOU MDAs at all levels	
<b>Strategic Objective 4: To improve access by population to evidence-based messages and information to enable them to make informed decisions to protect themselves, their peers and their communities</b>						
<b>Indicators</b>						
% of people accessing specific channels for messages on the seven priority zoonotic diseases. (print, audio visual and inter personal communication (IPC))	Unknown	80% <sup>9</sup>	Evaluative survey	Annual	Mandated GOU MDAs at all levels	
<b>Strategic Objective 5: To establish functional coordination mechanisms which bring together government; donors; international and local civil society organizations; the media and private sectors and communities for effective preparedness and response interventions to outbreaks of zoonotic diseases.</b>						
<b>Indicators</b>						
Proportion of districts with functional risk communication structures	Unknown	50% of districts	Report	Annual	Mandated GOU MDAs at all levels	
Proportion of organizations and implementing partners at different levels that meaningfully participate in risk communication coordination mechanisms	Unknown	80% of districts	Report	Annual	Mandated GOU MDAs at all levels	
Number and type of stakeholders that submit quality data on a timely basis to the district	Unknown	80% of districts	Report	Annual	Mandated GOU MDAs at all levels	
Number districts that regularly share reports with the national level coordination mechanism.	Unknown	80% of districts	Report	Annual	Mandated GOU MDAs at all levels	
Number of meetings conducted to review the implementation of the risk communication strategy	0	8	Report	Annual	Mandated GOU MDAs at all levels	

<sup>9</sup> Targets set based on the hierarchy of communications effect model



**Table 20: Monitoring and Evaluation Indicator Matrix for The Risk Communication Objectives of the Strategy**

Overall Goal: To Contribute to The Implementation of The National One Health Strategic Plan of Building Resilient, Sustainable Systems That Can Prevent, Detect and Respond to Zoonotic Diseases in A Timely Manner					
General indicators	Baseline (%/No.) (see references below)	Target <sup>10</sup> (%/No.) (2020/21)	Data sources	Frequency of collection	Responsibility
<b>B. COMMUNICATION OBJECTIVES</b>					
<b>Communication Objective 1:</b> To equip individuals and communities with knowledge and skills necessary to protect themselves before, during and after outbreaks of zoonotic diseases					
<b>Indicators</b>					
<b>1.1</b> Percentage of individuals who have correct knowledge <sup>11</sup> for each of the seven priority zoonotic diseases namely <b>Anthrax, Viral Hemorrhagic Fevers (EBOLA), Highly Pathogenic Influenzas, African Trypanosomiasis, Brucellosis, Rabies and Plague</b> outbreaks.	Unknown	90%	Evaluative survey	Annual	Mandated GOU MDAs at all levels
<b>1.2</b> Percentage of individuals who have mastered specific prevention skills for each of the mentioned zoonotic diseases in <b>Outcome 1.1</b>	Unknown	50%	Evaluative survey	Annual	Mandated GOU MDAs at all levels
<b>1.3</b> Percentage of individuals who have been exposed <sup>12</sup> to prevention and control messages for each of the mentioned zoonotic diseases in <b>Outcome 1.1</b> .	Unknown	80%	Evaluative survey	Annual	Mandated GOU MDAs at all levels
<b>Communication Objective 2:</b> To increase the proportion of the population that seeks prompt medical or veterinary treatment when they or their animals' contract any of the seven priority diseases					
<b>Indicator</b>					
<b>2.1</b> Percentage of individuals who promptly <sup>13</sup> seek medical /veterinary treatment when they suspect contraction of any of the mentioned zoonotic diseases in <b>Outcome 1.1</b>	Unknown	40%	Evaluative survey	Annual	Mandated GOU MDAs at all levels

<sup>10</sup> Targets set based on the hierarchy of communications effect model

<sup>11</sup> Correct knowledge will be defined by the following measures: 1) Transmission modes, 2) Signs & symptoms in animals and humans and 3) How transmission occurs from animals to humans

<sup>12</sup> Exposure means seeing, hearing or being trained on the basic of prevention and control measures for any of the seven zoonotic diseases.

<sup>13</sup> Promptly means seeking medical attention within 24 hours

<b>Overall Goal: To Contribute to The Implementation of The National One Health Strategic Plan of Building Resilient, Sustainable Systems That Can Prevent, Detect and Respond to Zoonotic Diseases in A Timely Manner</b>					
<b>General indicators</b>	<b>Baseline (%/No.) (see references below)</b>	<b>Target<sup>10</sup> (%/No.) (2020/21)</b>	<b>Data sources</b>	<b>Frequency of collection</b>	<b>Responsibility</b>
<b>Communication Objective 3: Provide the basis for targeted social behavior change interventions to address both the existing and perceived risk of emerging and re-emerging zoonotic diseases</b>					
<b>Indicators</b>					
<b>3.1</b> Percentage of individuals who reject behavioral, cultural and religious practices that propagate the continued spread of any of the outbreak of mentioned zoonotic diseases	Unknown	100%	District annual reports	Annual	Mandated GOU MDAs at all levels
<b>3.2</b> Proportion of people who believe most of their relatives and friends and other community members currently practice the promoted behavior	Unknown	40%	District annual reports	Annual	Mandated GOU MDAs at all levels
<b>Communication Objective 4: To increase the proportion of the population that have accepting attitudes towards people who have suffered from any of the seven zoonotic diseases</b>					
<b>Indicator</b>					
<b>4.1</b> Percentage of survivors who report no stigma and discrimination related to having suffered from any of the mentioned zoonotic diseases	Unknown	100%	VHT reports, program reports	Quarterly, semi-annual, annually	Mandated GOU MDAs at all levels

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251.	Batenga A. - County Sheik, Mbarara
252.	Birungi Dismus - District Health Inspector, Kisoro
253.	Brenda Kyakuhaire - Community Officer, ICOBI
254.	Bruhan Kasozi - District Veterinary Officer, Isingiro
255.	Christopher Nahabwe - District Surveillance Focal Person, Mbarara
256.	Clemmy Kajungu - District Surveillance Focal Person, Isingiro
257.	Cranmer Tukwasibwe - Veterinary Officer, Kisoro
258.	Daniel Rwego - Health Educator, Kisoro
259.	Deogratiuous Begumisa - Senior Veterinary Officer, Mbarara
260.	Deus Madudu - District Surveillance Focal Person, Kiruhura
261.	Edidah Katushabe - VHT Coordinator, Katyazo
262.	Edsen Namara - Youth Chairperson, Mbarara
263.	Edson Tumusherure - District Health Officer, Isingiro
264.	Elias Nuwagaba - Resident District Commissioner, Kisoro
265.	Enid Tindimweba - Chairperson Twimukye Women Group, Bugembe
266.	Ernest Kyomukama - Project Officer, Agency for Promoting Health
267.	Felix Twinomugisha - Senior Medical Officer, Kazo HC 1V, Kiruhura
268.	Fortunate Abaho - K-WIDE, Kiruhura
269.	Fortunate Tusiime Nabanza - Ag In-Charge, Isingiro
270.	Francis Tamugira -District Chairperson, Kiruhura
271.	Gerald Bizimana - Treasurer-Busimba Youth group, Kisoro
272.	Godfrey Munyaneza - ADHO Environment Health, Kiruhura
273.	Grace Asiimwe - District Veterinary Officer, Kiruhura
274.	Herbert Byarugaba - Chairman Tukwatane, Bijubwe
275.	Herbert Muhangi - Resident District Commissioner, Isingiro
276.	Ivan Musinguzi - District Internal Security Officer, Isingiro
277.	Ivan Sasomana - Youth Chairperson, Kisoro
278.	Izdolo Tumusiime - Secretary for Health, Kisoro
279.	James Batyani - District Health Educator, Isingiro
280.	Jemimah Kwisera - Women Leader, Kisoro
281.	Jenifer Maniraguha - Women Leader, Kisoro
282.	Jeremiah, Kamurari - LC V Chairperson, Isingiro
283.	Justus Monday - District Health Inspector, Isingiro
284.	Kazooba Lubega- District Health Educator, Mbarara
285.	Laban Ndyaguma - District Health Inspector, Kiruhura
286.	Lilian Kembabazi - TPO/SOCY Project, Mbarara
287.	Lydia Tusiime - Women Leader, Mbarara
288.	Mary Kankiriho - Women Group chairperson, Mirama
289.	Micah Lauben Ganyena - District Internal Security Officer, Kisoro
290.	Moses Ateng - Journalist-Vision Group, Mbarara Region
291.	Nick Muneza - District Surveillance Focal Person, Kisoro

292.	Norah Tukahirwa - Parish Community Development Officer, Kiruhura
293.	Oliver Natweta - Kajaho Women Development Association, Kajaho
294.	Patrick Mpairwe - RAHC-Ankole Diocese, Kashaka
295.	Peter Tibamanya - District Internal Security Officer, Kiruhura
296.	Reuben Katemba - Resident District Commissioner, Kiruhura
297.	Robert Twinamasiko - Veterinary Officer, Kiruhura
298.	Ronald Santhnh - Journalist-Vision Group, Mbarara Region
299.	Sam Niyozimana - District Community Development Officer, Kisoro
300.	Scovia Babirye - VHT Coordinator, Isingiro
301.	Scovia Fokushaba - District Health Educator, Kiruhura
302.	Seith Arinaitwe - Journalist-Radio 5, Mbarara
303.	Stephen Mushabe - VHT Coordinator, Nkungu
304.	Stephen Nsabiyumva- District Health Officer, Kisoro
305.	Swaliha Nalubega - Kyabutoto Youth Group, Isingiro
306.	Venansio Mbairabirema - District Health Inspector, Mbarara

<b>West Nile Region</b>	
307.	Abassi Mansur - District Health Educator, Yumbe
308.	Abiriga Yasin- District Health Officer, Yumbe
309.	Ajuga Brahan - Member, Village Health Team, Arua
310.	Albine Oja Bayi - District Health Inspector, Moyo
311.	Alex Adaku - Ag. HD, Arua
312.	Alfred Yayi - District Health Officer, Yumbe
313.	Allan Haroga - Medical Officer, Arua
314.	Anthony Anguaku - District Surveillance Focal Person, Arua
315.	Austin Dralega Andemani - DCDO, Yumbe
316.	Bernard Amaga -Health Officer, MTI-Moyo
317.	Bosco Madrara - District Health Educator, Moyo
318.	Buga Morris - District Surveillance Focal Person, Yumbe
319.	Charity Farida - Chairperson Women Caucus, Yumbe
320.	Charles Anyama - Representative, NGO forum, Moyo
321.	Collins Nyingalin - Production Officer, Nebbi
322.	Damas Odaga -Pastor, Arua
323.	Danile Andruga - NRO, Yumbe
324.	Deacon Cekeoan - Church of Uganda-Nebbi
325.	Doreen Bacia - District Health Educator, Arua
326.	Edmond Oyimungu -Tangana Youth Group, Nebbi
327.	Felix David Lupe - Deacon, Arua Agape Church
328.	Francis Jarienkonga - Hairdressing group, Nebbi
329.	Frankline Amuli - District Health Officer, Moyo
330.	Gasper Agwoktho - Priest, Nebbi
331.	Gerald Geria - Chief, Moyo District
332.	Glory Awekunimungu - PO-Africa Water Solutions, Nebbi
333.	Herbert Alule - District Environment Officer, Moyo
334.	Hussein Salim Murusal -District Health Officer, Arua District
335.	Isaac Ochora - District Surveillance Focal Person, Nebbi
336.	Isaac Omirambe - Pentecostal Community, Nebbi
337.	Ismail Tuku - Lugbara Kari, Arua
338.	Issa Arita Abu - Environment Officer, Yumbe
339.	James Unzimai - Chief Health, Moyo
340.	Jane Alejo - Secretary Social Services, Yumbe
341.	Jane Manano - District Health Officer, Nebbi
342.	Joakin Andiandu - District Environment Officer, Arua
343.	John Anguyo - Assistant District Water Officer, Yumbe
344.	John Dibaba - Journalist, Radio PACIS
345.	Johnson Adrawa - Project Officer -MAHA, Nebbi
346.	Johnson Ruhinda - DLPO- Infection Diseases Institute, West Nile
347.	Justine Okwairwoth - Medical Superintendent, Nebbi Hospital
348.	Kites Obima - Alur Kingdom, Nebbi
349.	Malikisi - Regional Data Officer, Infectious Diseases Institute
350.	Manasseh Anziku - District Health Inspector, Arua
351.	Mary Abiyo - Secretary for Health, Yumbe

352. Mercy Letaru - Assistant DWO, Arua
353. Morris Kwach M - Secretary for Health services, Nebbi
354. Moses Opolot - Project Coordinator, PLAN International, Nebbi
355. Moses Wadia Manasi - Resident District Commissioner, Yumbe
356. Muzamil Swaibu Odagus - Sec Nebbi Butchery Association, Nebbi
357. Nancy Mugisa - Motorcycle Riders' Association, Nebbi
358. Neckyon Mukasa Matinda - District Veterinary Officer, Yumbe
359. Patricia Okumu - ADHO-Environment Health, Nebbi
360. Patrick Anguzu - District Health Officer, Arua
361. Paul Drami - Secretary Finance and Production, Moyo
362. Peter Ijuma - District Production Officer, Moyo
363. Peter Paul Debele - Resident District Commissioner, Arua
364. Rasul Bakole - Executive Director- CODNET-Uganda, Yumbe
365. Richard Akule - District Veterinary Officer, Moyo
366. Richard Ojuku Okethwengu - Environment Officer, Nebbi
367. Rimiliah Walter Amandu - Reporter, WN-WEB
368. Robert Ocimati - Religious Leader, Pilgrim Church, Yumbe
369. Ronald Orachwun Cox - Journalist, Rainbow FM, Nebbi
370. Ronnie Rupiny - Branch Manager Uganda Red Cross, Nebbi
371. Rukia Safi Rembe -Chairperson YUDWESCO, Yumbe
372. Shamusha Wadiya - Journalist Spirit FM, Yumbe
373. Sharon Mwachan -Secretary for Health, Nebbi
374. Shuaib Toko - Resident District Commissioner, Moyo
375. Siraji Asiku - CODNET-FIN, Yumbe
376. Stephen Kandaruku - Journalist, Trans-Nile broadcasting Services, Moyo
377. Stephen Mademega - District Internal Security Officer, Arua
378. Susan Twinomujuni - District Health Educator, Nebbi
379. Twaib Feni - CEO ADINGON, Nebbi
380. Walter Abineno - District Veterinary Officer, Nebbi
381. Williams Anyama - LCV Chairperson, Moyo
382. Williams Drichi - ODHE Farmers' Association, Moyo
383. Willy Fednand Afaro - District Health Inspector, Yumbe
384. Willy Nguma - District Veterinary Officer, Arua
385. Yasin Aarii - Elder, Yumbe
386. Yasin Taban - LC V Chair, Yumbe
387. Zuber Ojjo - Assistant DHO -Environment Health, Yumbe



<b>Karamoja Region</b>	
388.	Agnes Akuleut - Youth Member, Kotido
389.	Albert Chesoli - Church of Uganda Priest, Amudat
390.	Alfred Tapem - Youth Councilor, Napak
391.	Alice Loru - Woman Councilor- South Division, Moroto
392.	Ambrose Imalany - District Surveillance Focal Person, Napak
393.	Andrew Munerya - Medical Doctor- DHO's Office, Amudat
394.	Andrew R. Ilukol - District Health Officer, Moroto
395.	Anna Mary Lokwii - Atekere - E Moroto
396.	Anthony Wadamba - Uganda Radio Network, Moroto
397.	Beatrice Atim -Marketing & Promotions, Moroto
398.	Ben Moru - Clinical Officer, Nakapiripirit
399.	Benjamin Aten Lukori - District Community Development Officer, Kaabong
400.	Betty Akello - Assistant District Water Officer, Kaabong
401.	Betty Hope Amuge - Youth leader, Nakapiripirit
402.	Bin Muhammed Aziz - All Karamoja FM, Moroto
403.	Callista Sacal - RAADO, Nakapiripirit
404.	Charles Lochoro - Youth Leader, Kaabong
405.	Christine Akot -Vice Chairperson, Moroto
406.	Christine Nachen - DHT Member Kaabong
407.	Christine Ngiro - Health Information Assistant- Rupa HC II, Napak
408.	Constance Imalingat - Assistant DHO Maternal and Child Health, Nakapiripirit
409.	David Lemonyang - Elder Amudat
410.	David Look - Religious Leader, Kotido
411.	Elijah Loboue Lokoribok - JIECODI - Coordinator, Kotido
412.	Emmanuel Opolot - Youth Leader, Kaabong
413.	Felix Oyepa - District Health Inspector, Napak
414.	Gabriel Loiki - Chairperson LCV's Office Kaabong
415.	Geoffrey Loit Adiaka - Youth Leader, Nakapiripirit
416.	Helen Akol Boze - Leader-Napak Women Initiative for Development, Napak
417.	Irar Peter Abrahams - Youth Leader Kotido
418.	Irene Akech - Records Assistant, Napak Health Sub-District, Napak
419.	Issa Kelipedu - District Khadi, Kotido
420.	Jacqueline Auma - Community Leader, Kaabong
421.	James Adyaka - VHT Peer Nakapiripirit
422.	James Israel Lowal - Office of District Community Development, Moroto
423.	James Olweny - Livestock Officer -Farm Africa, Nakapiripirit
424.	Janet Awaso - Records Assistant-Nakaperemen HC II, Kaabong
425.	Joe Wacha - Journalist Voice of Karamoja, Kotido
426.	John Bosco Lokoru -Totore FM, Moroto
427.	John Bosco Lowalem - Deputy Community Development Officer, Nakapiripirit
428.	Joseline Onenchan - VHT supervisor, Moroto
429.	Joseph Lomonyang - LCV chairperson, Napak
430.	Joseph Muya - Supervisor, Village Health Team, Napak
431.	Lawrence Ogwaria Kamoth - District Community Development Officer, Kotido
432.	Levi Lokwang -Project Officer - WSF, Kotido

433. Lucky Scovia Aema - Counselor - Cooperation & Development, Nakapiripirit
434. Margret Mercy Aketch - Journalist - New Vision, Napak
435. Mariam Longok - LC III Councilor-Lutome, Napak
436. Mark Limo - Office of Community Development, Amudat
437. Martin Luther Aliat- Vice LC V Chairperson, Nakapiripirit
438. Martine Elumu - VHT, Kotido
439. Michael Lokiru - Priest- Church of Uganda, Napak
440. Michael Owilli - Environmental Health's Office, Kaabong
441. Molly Gloria Napeyok - Project Officer - KAPDA, Kaabong
442. Molly Nangiro - District Community Development Officer, Napak
443. Morris Amodoi - KDDS, Amudat
444. Moses Lesma - District Community Development Officer, Kaabong
445. Moses Nangor - Member, Village Health Team, Amudat
446. Nahaman Ojwe - Resident District Commissioner, Napak
447. Olandason Wanyama - Journalist - New Vision, Napak
448. Palma Atyang - Women Rep, Kotido
449. Patience Alwach Ojok - District Health Office, Kaabong
450. Patrick Ekwesu - KDDS Kaabong
451. Patrick Omara - District Water Officer, Napak
452. Paul Aduku - Elder, Kotido
453. Paul Nangiro - VHT Peer Nakapiripirit
454. Peter Chepkurui - Water Officer, Amudat
455. Peter Logiro Ngorok - Resident District Commissioner, Kaabong
456. Phionah Aguti - Records Assistant, Nakapelimen HC II, Kotido
457. Pius Jude Okil - Youth Leader, Nakapiripirit
458. Richard Obwol - Community Mobiliser, Kaabong
459. Richard Otim - Youth Leader, Napak
460. Robert Tukundane - RDC's Office, Amudat
461. Rose Mary Ariebe - Community Mobiliser Nakapiripirit
462. Rose Mary Napio - Women Leader Kotido
463. Rose Muge - Youth Leader, Nakapiripirit
464. Salim Japiem - Youth Councilor South Division, Moroto
465. Samson Aleu - District Surveillance Officer, Amudat
466. Samson Asiba - Youth, Amudat
467. Samuel L. Psorich - LC V Chairperson Amudat
468. Samuel Lokiru - Youth Leader, Nakapiripirit
469. Silvester Awas -Radio Presenter, Nakapiripirit
470. Simon Aisu - Priest, Nakapiripirit
471. Simon Elimu - Asst DHO, Amudat
472. Simon Peter Kokoi - District Youth Chairperson, Moroto
473. Simon Peter Longoli - Youth Councilor -Rupa Sub-County, Moroto
474. Stella Olar - Enrolled Mid-wife, Bmos HCII, Kotido
475. Stephen Ongodia Okalang - Journalist, Amudat
476. Steven Ariang -Journalist-Daily Monitor, Moroto
477. Susan Talep - Coordinator, Nakapiripirit
478. Teddy Night Lochoro - SEDEFO - Project Officer, Kotido

479. Thomas Telo -Journalist- The Monitor, Napak
480. Timothy Chewere - Amudat Hospital In-Charge Amudat
481. Timothy Teko - District Health Officer, Napak
482. Tony Adupa - Member, Village Health Team, Kaabong
483. Veronica Natee - Women Representative, Amudat
484. Vincent Muron - Assistant District Health Officer -Environment Health, Moroto
485. Walter Omara - District Health Inspector, Kotido
486. Walter Owiny - District Surveillance Focal Person, Moroto
487. Yusuf Lokiru - Kotido District Local Government

<b>Northern Region</b>	
488.	Aber Rose Latigo - Women leader, Kitgum
489.	Alex Ojwe - Catechist, Kitgum
490.	Alex Oremo Alot -LCV Chairperson, Lira
491.	Angelo Oceng - Sen. Medical Officer Amuru
492.	Anthony Oteng Ecun - District Internal Security Officer Lira
493.	Asuman Oula - Secretary District Khadi, Lira
494.	Becky Sophie Ajok - Nursing Officer, Gulu
495.	Bernard Kinyera - Health Inspector Gulu
496.	Best Alfred Otto - District Veterinary Officer, Kitgum
497.	Caroline Gloria Aduku - Youth Councilor, Lira
498.	Charles Mukiibi - Resident District Commissioner, Lira
499.	Charles Ogwang Olet - District Environment Officer Lira
500.	Charles Onono - Assistant DHO-Environmental Health, Kitgum
501.	David Komakech - District Surveillance Focal Person, Amuru
502.	David Okema - Journalist- NUMEC FM, Kitgum
503.	David Opero - VHT coordinator-Amach, Lira
504.	David Wany Ojok - Environment Officer Kitgum
505.	Dorcus Alaro - Communication Advisor JSI
506.	Doreen Lanyero Ajok - District Environment Officer Amuru
507.	Emmanuel Lapyem - Secretary for Health Kitgum
508.	Evelyn Aparo - Youth Councilor, Kitgum
509.	Francis Ladwar Okot - Member, Village Health Team, Kitgum
510.	Freezaer Onek - Chair Youth Council Central, Kitgum
511.	Gabriella Oroma - Clinical Officer, Ngetta HC, Lira
512.	Geoffrey Agoro Okullo - Assistant Health Educator, Lira
513.	Geoffrey Onyuta Topiny - Gulu Municipal Health Educator, Gulu
514.	Gerald Omal - Mighty Fire FM Manager Kitgum
515.	Goodluck Clovice Oywello - District Health Educator Amuru
516.	Grace Apollo - Health Assistant, Gulu
517.	Grace Atim - District Health Educator, Lira
518.	Innocent Okello - Ass. DHO Environmental Health Lira
519.	Irene Atoo - Journalist, Lira
520.	Isaac Ojok - Youth Chairperson, Gulu
521.	Isaac Olweny - Journalist, Gulu FM, Amuru
522.	Isaac Orec - Senior Medical Officer, Amach HC IV, Lira
523.	Jackson Omona - LCV Chair Kitgum
524.	Jalmoro Bilak - Resident District Commissioner, Amuru
525.	James Kamira - VHT Coordinator-Ogur, Lira
526.	James Odur - Assistant Health Educator, Lira
527.	James Okite - Health Assistant, Gulu
528.	James Omal - Health Assistant, Gulu
529.	James Omara - District Youth Councilor, Lira
530.	James P'okidi Okello - DCDO Kitgum
531.	Janet Nyaga - Women leader, Gulu

532. Jenifer Oyee Akello - Women Leader, Gulu
533. Jesse Johnson - Journalist, Lira
534. Jimmy Otim - Water Officer Lira
535. Jiponi Okello - Priest, Kitgum
536. Joel Ongebo - District Veterinary Officer, Lira
537. John Okwonga - Sen. Environment Health Officer Amuru
538. Kagwa Apollo Okello- Secretary for Health Amuru
539. Kennedy Ojera - District Internal Security Officer, Gulu
540. Lawrence Asiimwe - DISO Kitgum
541. Lawrence Mba - District Security Officer Lira
542. Lilly Anena - Secretary youth Group, Amuru
543. Livingstone Okumu - Journalist, Kitgum
544. Lusiano Omach - District Surveillance focal person, Lira
545. Mariam Akello - Chair, women group, Amuru
546. Martin Abola - Correspondent, Radio King, Amuru
547. Medina Okeng Akello - Sec. Community Based services, Lira
548. Michael Lakony - LCV Chairperson, Amuru
549. Michael Ojoko - Member, Village Health Team, Kitgum
550. Mohammed Ikaaba - District Internal Security Officer, Amuru
551. Moses Alwala - Journalist, Unity FM Lira
552. Nancy Acen - Secretary women group, Amuru
553. Obur Mwaka - VHT, Lira
554. Patricia Aciro - Health Inspector Gulu
555. Patrick Buchan Ocen - District Health Officer, Lira
556. Patrick Odong- District Health Officer, Amuru
557. Patrick Oryema - Member, Village Health Team, Kitgum
558. Patrick Uma - Journalist, UBC Lira
559. Paul Oketta - Community Health Extension Worker Coordinator, Lira
560. Peter Ogenga - COW Foundation Kitgum
561. Peter Okello - Regional Referral Hospital, Lira
562. Robert Bob Okello - Community and Youth Mobiliser, JSI
563. Robinson Payolem - District Water Officer, Amuru
564. Rogers Akena - Journalist, Tembo FM, Kitgum
565. Ronny Olao - Office of Community Development, Lira
566. Rose Ayoo - Community Health Extension Worker, Amuru
567. Samuel Komakech - Youth Representative, Kitgum
568. Samuel Ochora - Vet Officer Amuru
569. Simon Knox Okongo - Surveillance Officer Kitgum
570. Stella Lilian Lalam - Office of LC V Chairperson, Gulu
571. Stephen Adea - Youth Chairperson, Lira
572. Susan Acan - Female Youth Councilor, Gulu
573. William Komakech - Resident District Commissioner Kitgum
574. Willy Omunga Picho - Water Officer, Kitgum
575. Winifred Stella Amito - District Health Educator, Kitgum