

# MITIGATION OF RESPIRATORY INFECTIONS WITHIN THE BUDONGO FOREST

## Background

Although habitat loss, degradation and poaching are still the top threats to biodiversity conservation, diseases seem to be increasing rapidly on the threats' ladder. One of these diseases which has shown to be a great risk to the chimpanzees is the respiratory infections. In the recent past, respiratory infections have been the biggest threat to chimpanzee conservation in the Albertine Rift, Uganda with a high morbidity and case fatality rate recorded in some chimpanzee communities. Unfortunately, sample analysis of the infected individuals point to pathogens of human origin as the route cause. Given that humans and chimpanzees are related both genetically and physiologically, sharing of pathogens is inevitable especially where there is close contact or interaction. Incidentally, chimpanzees are naïve to these infections and so have no prior immunity making the magnitude of clinical manifestation severe. There isn't sufficient data to suggest a cause-effect pattern but current trends show an increase of these outbreaks during the dry season and apparently, Adult males are the most affected. Lose of adult high ranking males could have an overall impact on the social behaviour and consequently on the wellbeing of the chimpanzees.

It is because of this background that Budongo Conservation Field Station (BCFS) is establishing precautionary measures to minimise disease transmission between chimpanzees and people.

## What are Respiratory Infections and what causes them?

Respiratory tract infections are any infectious diseases that affect the respiratory tract (breathing system). Due to our close relatedness with the chimpanzees, we are more likely to be contagious to each other. We have mainly two types of respiratory infections: Lower respiratory infections (LRI) and upper respiratory infections (URI).

The lower respiratory tract infections are more serious and deadly and include diseases like; Pneumonia, Bronchitis and Tuberculosis. LRIs are mainly caused by bacteria. The URIs include influenza, Common cold just to mention a few. Most of these LRIs are caused by viruses such as: rhinoviruses, influenza viruses (during annual winter epidemics), parainfluenza viruses, **respiratory** syncytial virus (RSV), enteroviruses, coronaviruses, and certain strains of adenovirus. However, occasionally, bacterial infections have been reported. Symptoms of URIs lasts for 3-14 days. If symptoms persist beyond 14 days, alternative diagnosis is recommended, for example, LRT, sinusitis or allergies.

## Signs and symptoms of respiratory tract infections

Common signs and symptoms	Less common signs and symptoms
Scratchy or sore throat	Reduced ability to smell
Painful swallowing	Foul breath
Nasal breathing	Shortness of breath
Sneezing	Sinus pain
Running nose	Itchy and watery eyes
Coughing	nausea

Nasal discharge (think mucoid:yellowish-green)	vomiting
Nasal congestion	diarrhea
Headache	Body aches
Fever	
Muffled (hoax) voice	

### **Mode of transmission**

The URIs are more likely to be transmitted from one person to another or across closely related species through:

Direct contact with droplets from and infected person or animal when they sneeze or cough

Indirectly through contact with surfaces contaminated with infectious droplets

### **Who is at risk?**

Both people and wildlife are at risk of acquiring these infections however some species are more susceptible than others and usually there are factors that affect severity of the infection. For example, among humans, individuals with lowered immunity such as; children of five and below years and adults above 60 years of age, HIV patients, malnourished individuals and stressed individuals tend to suffer most.

In chimpanzees, using data from the last five years of health monitoring, the most susceptible individuals are; adults (especially males) and infants probably due to stress of maintaining the rank in the community and lowered immunity respectively. However, due to the ecological behaviour of wildlife species when sick, it's usually difficult to understand all the risk factors.

### **Prevention and Control of Respiratory infections transmission among people and chimpanzees**

NOTE: Most respiratory infections can be spread by both asymptomatic and symptomatic persons. And it's really hard to identify sick persons in asymptomatic stage. Thus it's important to practice best sanitation and hygienic practices daily especially for persons who are in frequent contact with chimpanzees. These include; researchers, volunteers and field staff.

#### **A) General rules for all staff, researchers, volunteers and visitor**

- Proof of vaccination against common immunisable diseases
- Quarantine: It's recommended to go through a minimum of five days' after flight. Aeroplanes are good vehicles for respiratory infections transmission
- Reporting sickness: When you feel any symptoms of illness, report. Do not enter the forest. When you see any sick animals, report immediately.
- Frequent Hand washing: This has proven very effective in preventing most respiratory and diarrheal diseases. Hand washing should be with clean water and soap.
- Hand sterilisation: While in the forest, sterilise hands with alcohol containing sanitizers if possible every one hour.

- Eating in the forest: disinfect before and after, don't throw food remains in forest and bring back all garbage from the forest
- Distance rule: Maintain the 7 meter rule to avoid stressing chimpanzees but also to create a barrier for respiratory infections' spread. When animals are sick, increase to 10 meters. Don't stand directly under the tree where coughing chimpanzees are feeding from
- Taking photos: Don't take photos with a flash as it stresses chimpanzees
- Waste disposal: Garbage in, garbage out! Don't leave any waste. For human excreta (fecal), dig one foot hole and cover well. Do it away from wildlife. **Do not spit in the forest** or in a public area
- Forest wear: If possible, have a different footwear for the forest from the one at camp and or community depending on where one lives.
- Forest wear: Designate off forest friendly clothes for use in the forest. At BCFS we prefer; green/khaki or grey. Long sleeved shirts and trousers. Forest clothes should not be used around camp or in the community depending on where one stays.
- Disinfect field equipment in the morning before field work and then in the evening after field work.

#### **B) Assumed healthy (Healthy and asymptomatic people at camp)**

Follow guidelines in **A** in addition to the following;

##### **Hand washing:**

- Wash hands with clean water and soap before entering the forest and after visiting the forest.
- Wash hands with soap every time one is visiting the kitchen
- Wash hands with soap and water before and after visiting the latrine
- While in the forest, use hand sanitizers every one hour even if not going to eat or after easing ones' self.

##### **Changing clothes and field gear:**

- Separate clothes for camp from those for the forest
- Forest clothes should be long trousers and long sleeved shirts and should be mimicking the green environment. This protects the people from hazards and reduces stress among the chimpanzees respectively.
- Forest clothes should not be kept in the same room with camp clothes (BCFS should provide a changing room for researchers as it is for field assistants.

**C) Assumed healthy (Healthy and asymptomatic people working at camp but sleeping outside camp e.g in forest edge communities)**

Follow guidelines in **A** in addition to the following;

**Hand washing:**

- Wash hands with clean water and soap while leaving home before entering the forest and after visiting the forest.
- Wash hands with soap after visiting the toilet
- While in the forest, use hand sanitizers every **one hour** even if not going to eat or after easing ones' self.

**Changing clothes and field gear:**

- All field staff if possible should have two pairs of uniform and footwear to avoid taking home wear into the forest especially during the wet season
- All uniforms and footwear should be kept in a changing room at the field station. Upon reaching camp, all staff should change into their uniforms and foot wear kept at camp.

**D) Sick (symptomatic) individuals**

**At camp**

When you notice any symptoms and signs listed above, **do not enter the forest.**

While at camp, do the following

Seek medical treatment very fast. Keeping isolated in one' room is very stressful and enables the expelled viruses to mutate and re-infect making the patient to take longer to recover. Keep in an open space but continue practicing all measures in; hygiene and sanitisation

- a) Wash hands with soap before and after bathroom visits. This is because the door handle is another big vehicle for disease transmission.
- b) Disinfect your hands each time you cough or sneeze.
- c) Don't shake hands with other people around you
- d) Keep a minimum of 5 meters from other colleagues and if possible wear a facial mask during conversations with them
- e) Identify and Isolate your feeding plate and cup and don't share them with others
- f) Once symptoms subside, keep away from the forest for another 3 days as you monitor yourself
- g) All masks or tissues used should be wrapped well in a plastic bag and take to the incinerator for burning.
- h) Do not spit in the forest or in public places

### **In case there is any respiratory outbreak in humans or animals, whether local or international**

- i) Avoid flight and any other travels
- j) Visitors should be stopped from accessing camp because you can't easily ascertain where they have been or whom they have been in contact with
- k) Avoid visiting crowded places
- l) Avoid being in contact with people who have flu symptoms
- m) Avoid hand shaking during such period, use other methods which don't involve direct contact
- n) If you sneeze in your hands or cough covering your mouth with your hand, disinfect them immediately
- o) Do not share cup and plates with other people in your location
- p) Wear masks when around other people or outside your room.
- q) Keep yourself hydrated and get treatment as soon as signs show up

#### **In Kampala during quarantine:**

Keep away from camp and other researchers until symptoms disappear. Once symptoms disappear, then start the quarantine for three days before coming to camp.

#### **At home local communities**

Report illness to your line supervisor.

Keep home and continue practicing same measures as in **D** a) to f) above.

Keep updating your line supervisor. Once symptoms subside, stay home for two more days to monitor your health before resuming field work.

### **E) Incoming individuals who have been on a plane**

#### **i) Long stay visitors (Researchers and staff)**

Quarantine:

Away from Camp:

- Number of days away from camp: minimum three days: If no signs, come to camp. If symptoms appear, stay in Kampala until symptoms subside and then go through three days of quarantine before coming to camp.

At camp

- Number of days away from the forest: two days. If no signs appear, then field work can commence. If signs appear, then follow measures in **D** for symptomatic persons at camp.

## ii) Short stay visitors (Volunteers and relatives of researchers)

This is a tricky category of people as most have 5 to 10 days at camp. This makes quarantine difficult. Thus for this category of visitors, we shall put measures which are more like in tourism sites.

- a) Practice all other measures in **A** and **B** if no clinical symptoms and signs are present. Practice measures in **D** at camp if one becomes symptomatic.
- b) If to visit the chimpanzees within a period less than five days after reaching Uganda, then facial masks should be worn during chimpanzee viewing. A minimum of 10 meters from chimpanzees should be maintained.

## **F) When chimpanzees are exhibiting respiratory infection signs**

- Report any unusual suspicious behaviour or signs to the veterinary team or any member of senior management team
- Keep following protocols listed in **A**, **B** and **C**
- Wear face masks when tracking chimpanzees. Its best to wear masks from Camp and throughout the monitoring period
- Increase monitoring to identify all sick chimpanzees and establish the magnitude of the outbreak

For more clarifications, contact the BCFS veterinary/conservation team

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