

A Field Manual of Animal Diseases by Syndromes

With Emphasis on Transboundary Animal Diseases



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A Field Manual of Animal Diseases by Syndromes

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INTRODUCTION

Healthy animals and healthy people contribute to stable and productive economies and societies everywhere.

The livestock industry of Eastern Africa is a cornerstone of the economy throughout the region. At the village level, animal production supplies valuable dietary animal protein and drives the microeconomy. At the national level, countries benefit economically from the export of all types of livestock. Ensuring the health of livestock is critical.

TRANSBOUNDARY ANIMAL DISEASES are highly significant because they are capable of severe impact and rapid spread far beyond the initial outbreak. These diseases, which cause sickness and death to animals, rob communities of valuable animal source food and cash resources. They might also lead to national trade restrictions which can cripple the economy of a country.

Some transboundary animal diseases cause additional harm as they also are ZOONOTIC DISEASES which can be transmitted from animals to humans.

National veterinary services strive to keep track of transboundary animal diseases and control them. Recognizing and reporting the suspicion of a transboundary animal disease as soon as possible is essential so that governments and livestock

owners can implement controls before further spread. This will also help improve livelihoods throughout the region.

In this book we have presented transboundary animal diseases in a basic pictorial format. We hope this helps everyone associated with animals to recognize these diseases so they can participate in the system of reporting them.

We recognize that within the communities of livestock producers there is an immense resource of knowledge about animal husbandry and management, and additionally about livestock diseases. Herders and farmers, truckers, marketers, butchers, processors, and others whose livelihoods are associated with livestock can become part of this system of recognizing and reporting transboundary animal diseases

Please use this book to further your knowledge about identifying and describing diseases so you can report them to your nearest local or national veterinary official. The sooner a transboundary animal disease is confirmed, the easier and cheaper it is to control it, and that is to the benefit of everyone.

We have collected many different local and regional names for diseases so that everyone involved will be able to identify diseases in each others' languages. You will see these names at the beginning of each disease chapter. Our goal is to help everyone work together whenever possible to contain harmful diseases.

HOW TO FIND WHAT YOU NEED IN THIS BOOK


 If you see sick or dead poultry, go to the
POULTRY SECTION (ND and HPAI)


 If you see sick or dead pigs, go to the
SWINE SECTION (ASF and CSF)

 **SECTION FOR ALL OTHER ANIMALS –
SHEEP, GOATS, CATTLE, and HORSES**

 If you see diarrhea - *Go to:* PPR

 If you see respiratory problems - *Go to:*
PPR, CCPP, CBPP, Heartwater, ECF, AHS

 If you see mouth or foot lesions - *Go to:* FMD

 If you see skin disease - *Go to:* SP, GP, LSD

 If you see abortion - *Go to:* RVF, Brucellosis


 **FOR ENDEMIC DISEASES OF CONCERN –**
Go to: Trypanosomiasis, Rabies, Orf



TABLE OF CONTENTS



BIOSECURITY- The five easy rules for healthy animals 1

POULTRY DISEASES

1. Highly pathogenic avian influenza (HPAI)... 5
2. Newcastle disease (ND)..... 16

SWINE DISEASES

3. African swine fever (ASF)..... 28
4. Classical swine fever (CSF)..... 35

SHEEP, GOATS, CATTLE and HORSE DISEASES

(a) *Diarrhea*

5. Peste des petits ruminants (PPR)..... 41

(b) *Respiratory*

6. Contagious bovine pleuropneumonia (CBPP) 49
 7. Contagious caprine pleuropneumonia (CCPP) 57
 8. East Coast fever (ECF)..... 63
 9. Heartwater..... 69
 10. African horse sickness (AHS)..... 75
- Also: Peste des petits ruminants (PPR), page 38

(c) *Mouth and Foot Lesions*

11. Foot-and-mouth disease (FMD)..... 82

■ **(d) Skin Disease**

12. Sheep and Goat Pox (SP, GP).....	89
13. Lumpy skin disease (LSD).....	97

■ **(e) Abortion**

14. Brucellosis.....	102
15. Rift Valley Fever (RVF).....	109

■ **ENDEMIC DISEASES OF CONCERN**

16. Trypanosomiasis	116
17. Rabies.....	119
18. Orf.....	122



The STOP-and-GO RULES for BIOSECURITY

If you follow the
STOP-and-GO RULES for your animals,
you will keep them healthy and
STOP bad diseases from coming.

Separate sick animals from healthy ones right away
Take off your footwear & clean them after travelling
Only people you know should come near your animals
Protect your tools, equipment, & trucks — If you lend
them, clean them thoroughly when returned

❖ **and** ❖

GO from healthy animals and then to sick animals
when you are attending to them as the sick
animals may be shedding a disease which you
could take to the healthy ones

BIOSECURITY

Biosecurity means taking steps to prevent your animals from catching disease. These steps are commonly used in countries around the world and they should be used all the time.

The main concept is to keep your herds and flocks isolated from people, animals, and objects which may be capable of transmitting disease. Most of the time there is no way to tell if an object, person, or animal is carrying a disease.

For instance, if you visit another producer and your footwear has feces from other animals, even you may be bringing disease-causing agents back to your own animals. The same is true for everyone else.

And, if you bring a new animal to your herd or flock, there's no way to know if the new animal is carrying a disease – so you must keep the new animal isolated from your healthy animals for a period until you are sure this new animal is healthy.

All producers should become familiar with the biosecurity procedures for their herds and flocks. The previous page features the five main steps for biosecurity, which we call **The Stop-and-Go Rules**. These are very important and should be followed every single day.

SYNDROMIC SURVEILLANCE



POULTRY SECTION



SYNDROMIC SURVEILLANCE



1. HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI)

◆ *A Transboundary Animal Disease* ◆

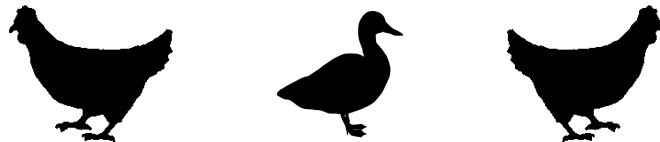
Other names

Avian influenza, fowl plague, and these local names:

-Hargabka shimberaha, kimbir hargaf (Djibouti)

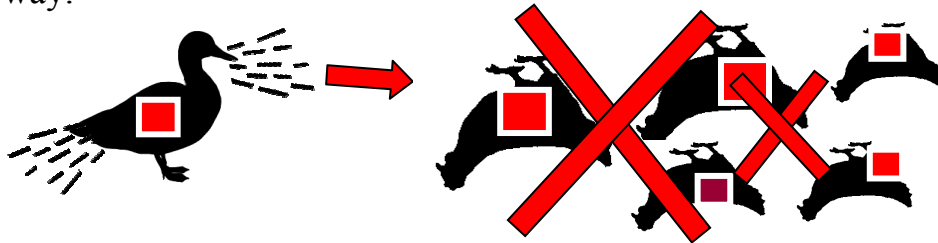
Who gets it?

CHICKENS get sick. Ducks may carry it but not be sick.



How do they get it?

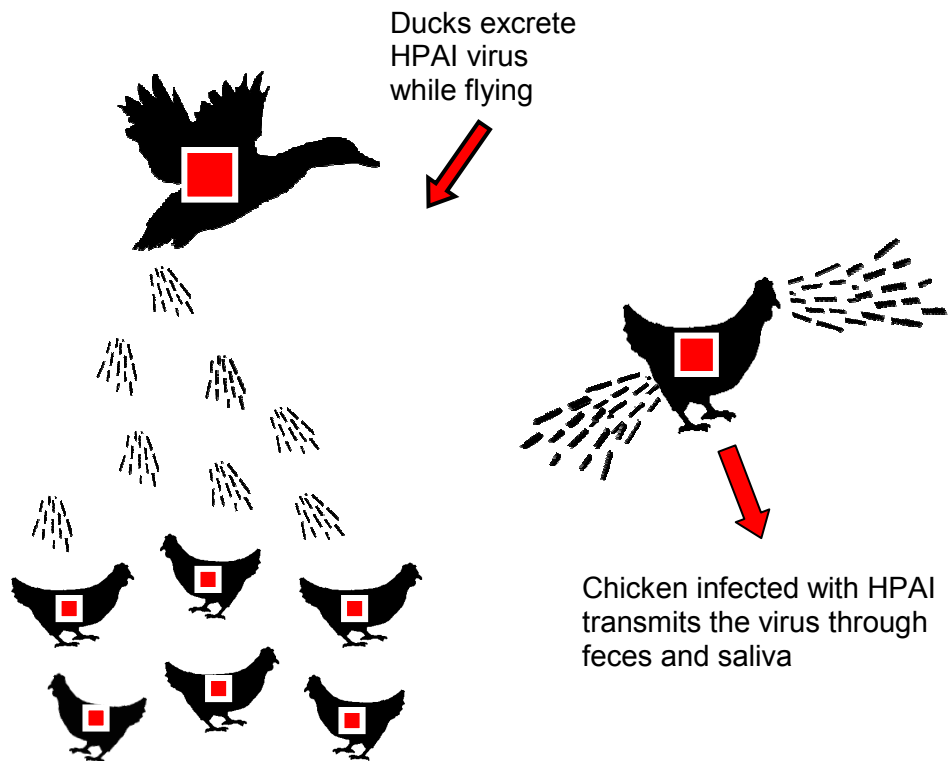
Feces or saliva have the virus so other birds can get it that way.



In this manual, the red squares symbolize a disease-causing agent, which can be a virus or bacteria

SYNDROMIC SURVEILLANCE

Infected birds, including flying ducks, will easily spread HPAI virus to other birds.



SYNDROMIC SURVEILLANCE

How many animals in the flock will be affected?

Most of the birds will be infected.

Will they die?

Almost all infected birds will die.



Viruses are easily spread at live bird markets. Humans spread the viruses from flock-to-flock or village-to-village by transporting infected birds, contaminated equipment, cages, footwear, clothing, egg trays, feed trucks, and personnel.

SYNDROMIC SURVEILLANCE



Transporting infected chickens will spread the HPAI virus because anything with chicken feces can spread the disease to other chickens

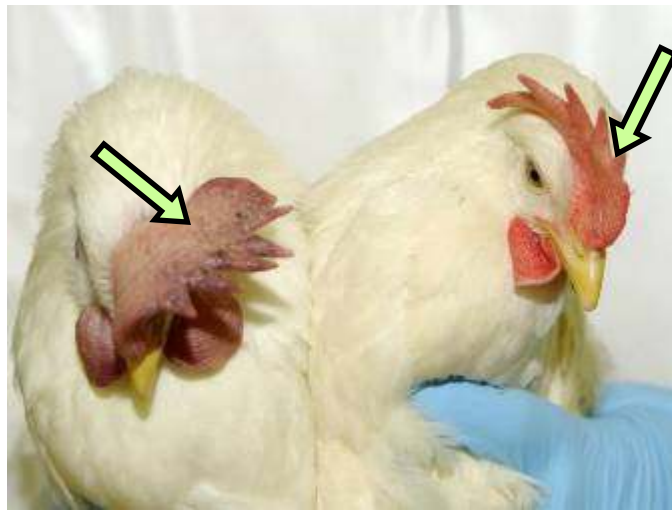
SICK BIRDS (HPAI)

Most frequently, the first sign of disease is sudden death in large numbers of birds.

Combs and wattles may be swollen and purple.

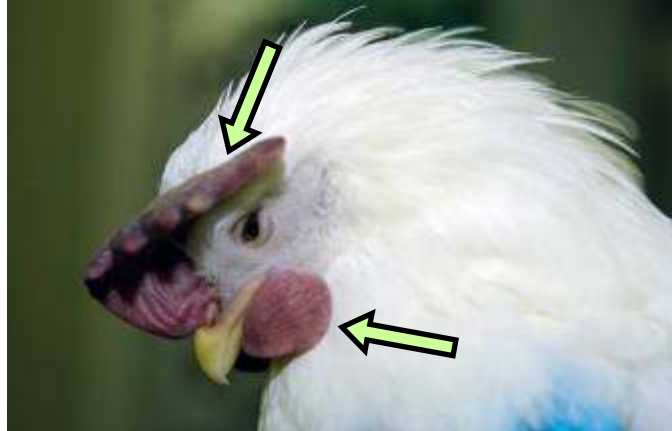
LEFT-
The infected chicken has a comb that has become partly blue

RIGHT-
On the right is a healthy chicken with a red comb



...signs of HPAI

This infected chicken has a blue/purple comb and swelling of the wattles



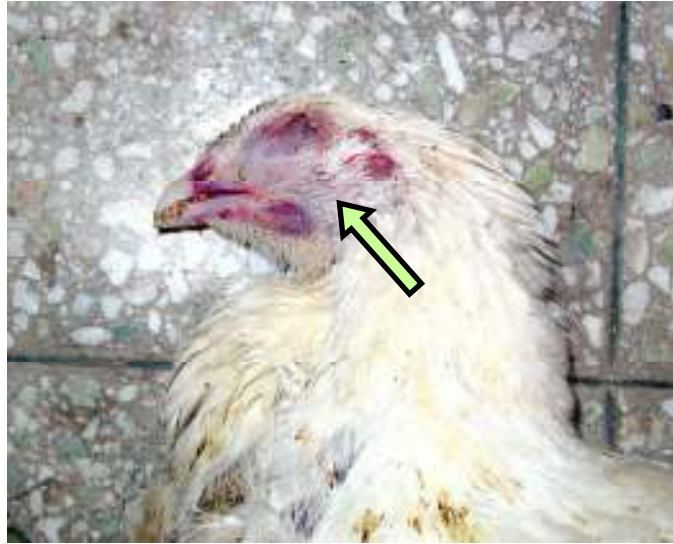
The legs can have red streaks – this is bleeding under the skin



SYNDROMIC SURVEILLANCE

...signs of HPAI

Blue areas in
the skin of the
head of a
broiler
(cyanosis)



Swollen head
tissues



SYNDROMIC SURVEILLANCE

...signs of HPAI

This infected rooster has a blue/purple comb



<<<<>>>>

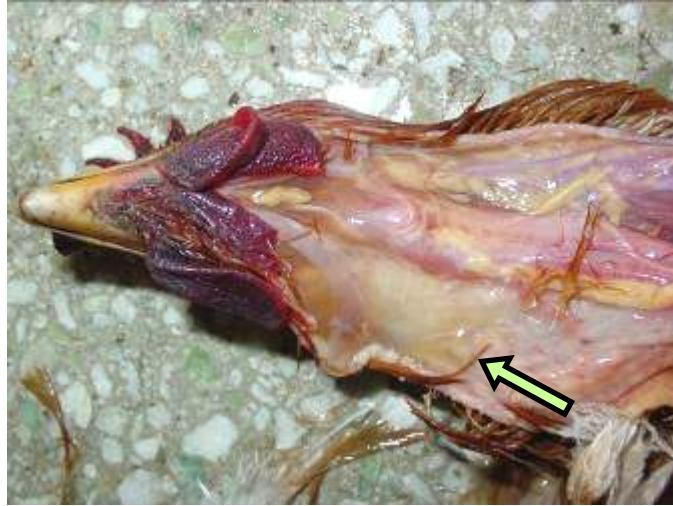
CAUTION REGARDING DEAD BIRDS!

On the following pages we have photos of dead birds with HPAI.

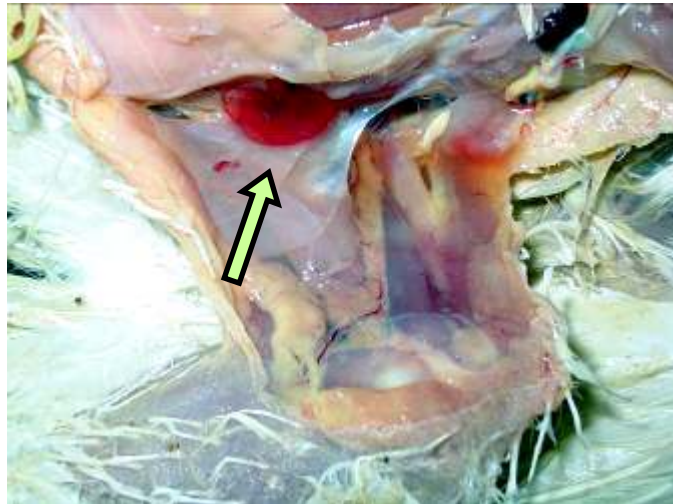
Caution is required when opening a carcass if clinical signs are noted, as some of these HPAI viruses can infect humans.

DEAD BIRDS (HPAI)

Fluid within the neck tissues, very characteristic of HPAI



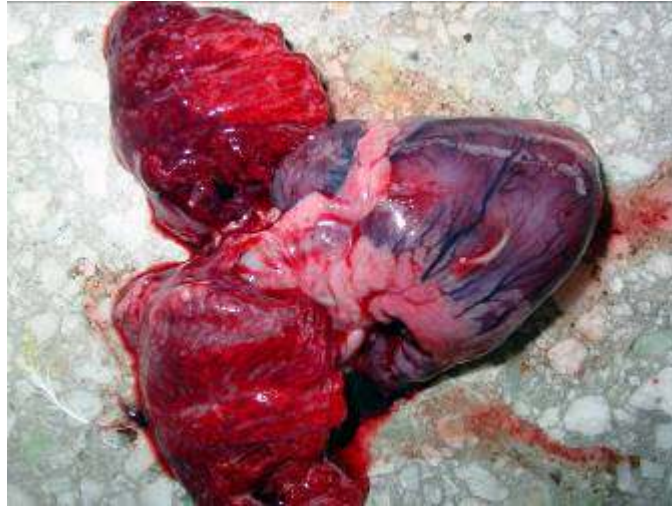
Accumulation of fluid (edema) in the inner thigh



SYNDROMIC SURVEILLANCE

...lesions of HPAI

Accumulation
of blood and
fluid in lungs



**If you see this disease, please call your local
Veterinary Officer**



SYNDROMIC SURVEILLANCE



2. NEWCASTLE DISEASE (ND)

◆ A Transboundary Animal Disease ◆

Other names

Exotic Newcastle disease, avian pneumoencephalitis, fowl pest, and these local names:

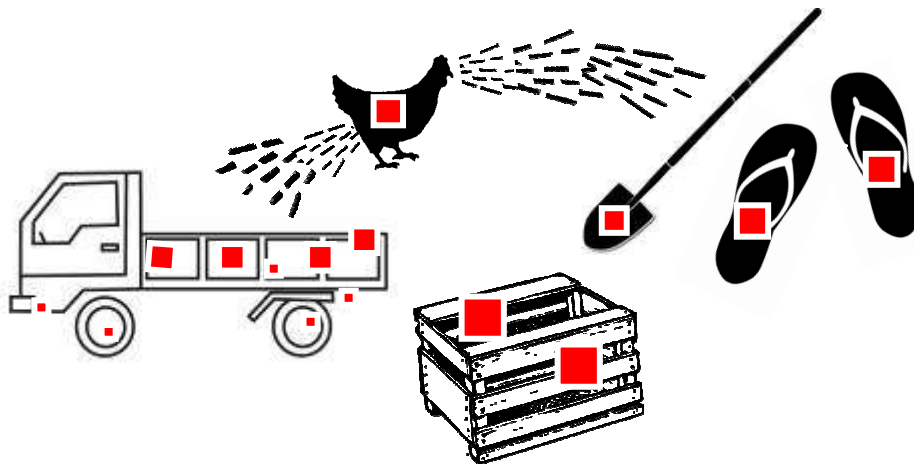
-Mdondo (Swahili) / -Kihuruto (Kikuyu)

Who gets it?

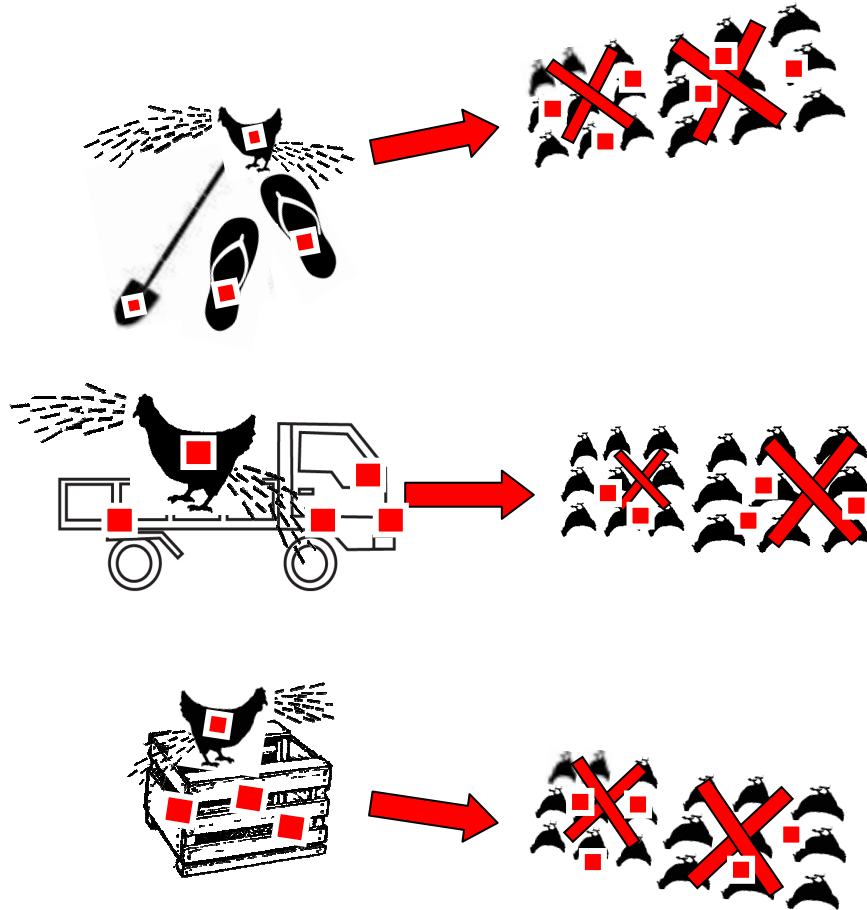
There are numerous species of birds that can be infected with ND. Not all species will get sick.

How do they get it?

Feces and saliva will have the virus, this can infect other birds. Dried feces or saliva on cages, footwear, or equipment such as shovels can take the disease to new places.

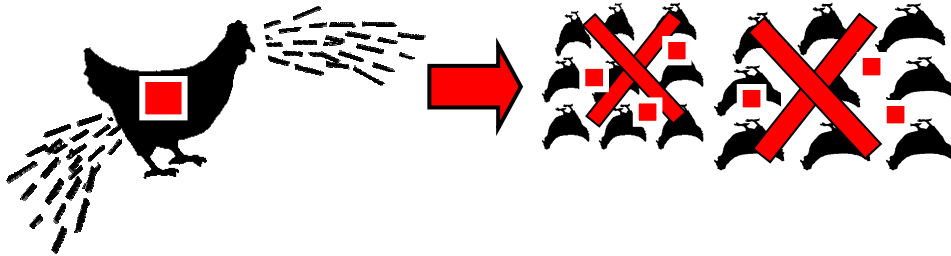


Infected birds, and infected objects which come into contact with these birds, can transmit the ND virus to healthy birds.



How many animals in the flock will be affected?

Virtually all birds which come in contact with this virus will acquire ND or will become carriers of this disease. It spreads very quickly and is extremely contagious.



Will they die?

Many, if not most, of the infected birds will die.

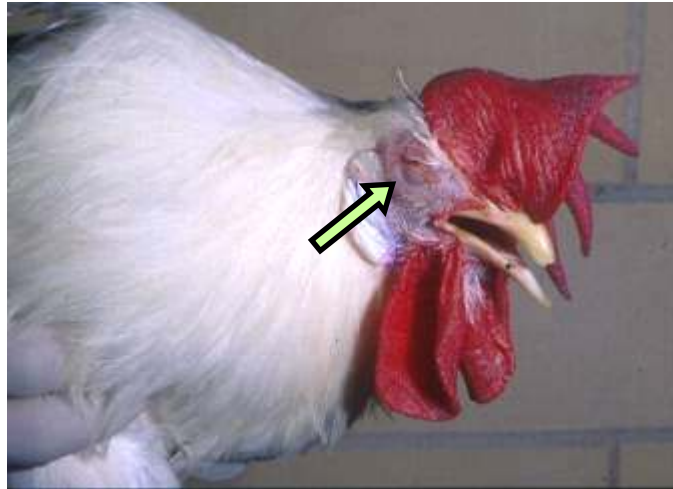
SICK BIRDS

Chickens stop eating, they don't move around much, and may lie down. They stop laying eggs, might have diarrhea. Some will get a crooked neck and might become paralyzed.

The clinical disease may look a lot like HPAI, but the only way to tell ND from HPAI is by laboratory tests.

SICK BIRDS (Newcastle)

Swelling and redness of the eyelids



Very depressed hen and she has some diarrhea and a crooked neck



SYNDROMIC SURVEILLANCE

...signs of Newcastle

Depressed
chicken, with
open-mouth
breathing

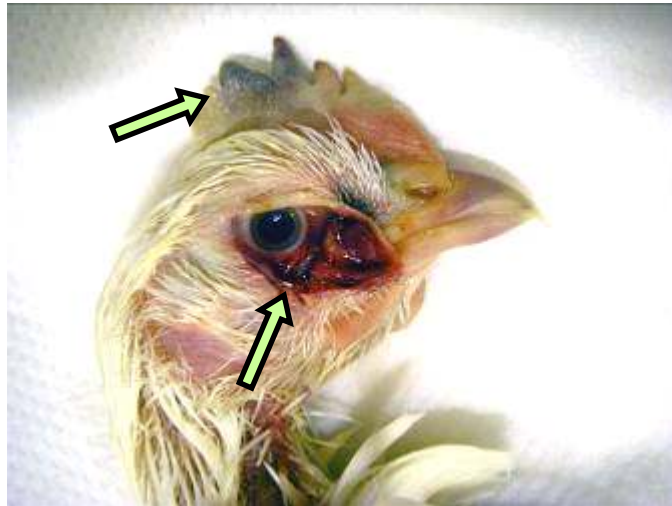


Chicken may
be paralyzed
but still alert



DEAD BIRDS (Newcastle)

Bleeding in the
eyelid and also
comb is blue



...lesions of Newcastle

Speckled
spleen

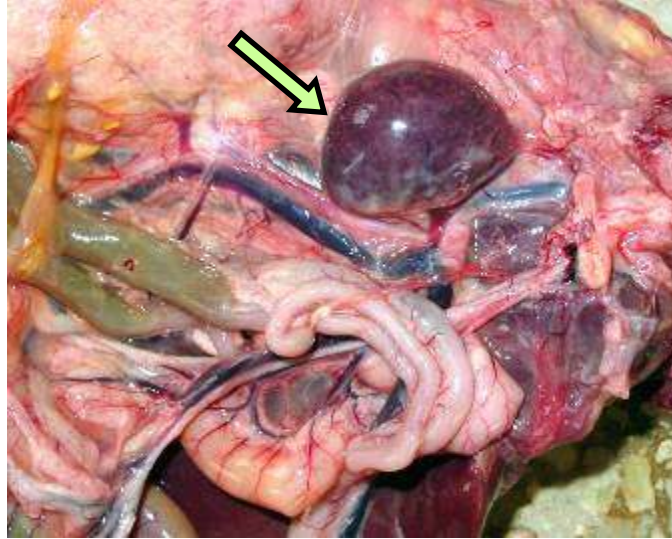


Closeup of
enlarged
speckled spleen



...lesions of Newcastle

Spleen is big
and speckled

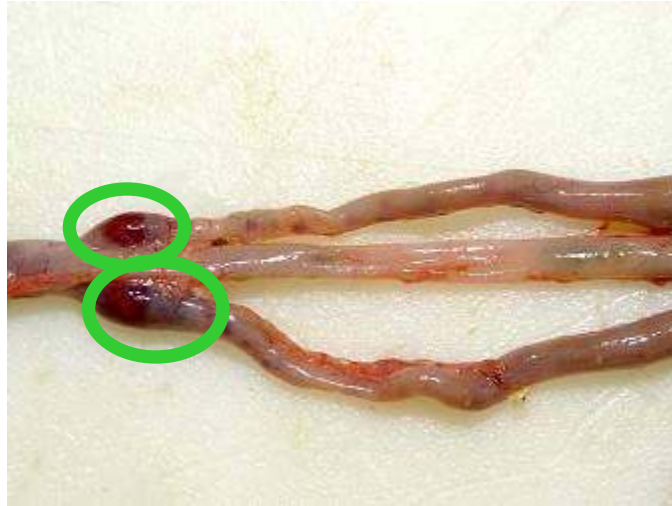


Another
example
of enlarged,
speckled
spleen



...lesions of Newcastle

At the
beginning of
the cecum
(cecal tonsils)
there is
hemorrhage



Opened cecal
tonsils showing
hemorrhage



...lesions of Newcastle

Hemorrhage in
the lining of the
stomach
(proventriculus)



Hemorrhage in
some parts of
the intestine



**If you see this disease, please call your local
Veterinary Officer**



SYNDROMIC SURVEILLANCE



SWINE SECTION



3. AFRICAN SWINE FEVER (ASF)

◆ *A Transboundary Animal Disease* ◆

Other names

Peste porcine Africaine, fiebre porcina Africana, maladie de Montgomery, and this local name:

-Al Nagma (Sudanese)

Who gets it?

All kinds of swine. Domestic pigs get sick with ASF.

Warthogs and African bush pigs carry the virus but don't get sick.



How do they get it?

Feces, saliva, and blood have lots of virus, so pigs pick up the disease this way. Also, a tick can take it from a warthog to a pig. And, feeding pork scraps to pigs may spread the disease.

How many animals in the herd will be affected?

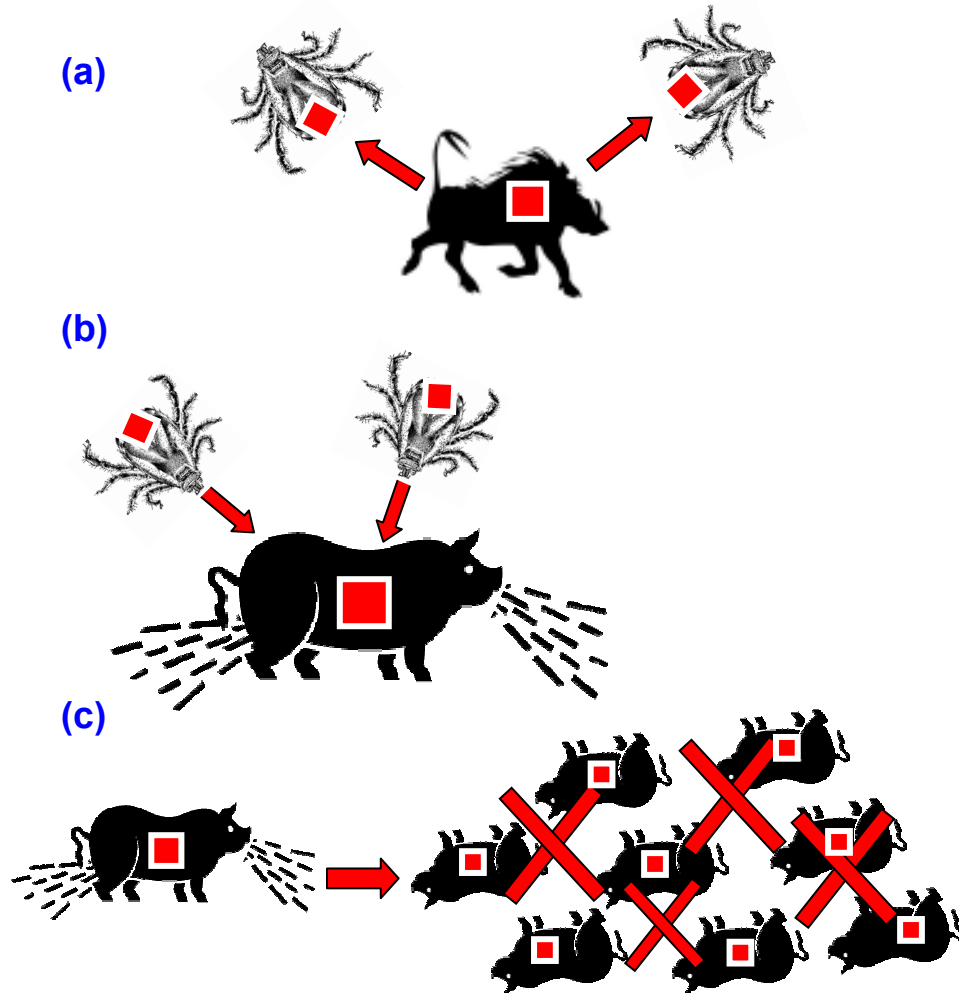
Almost the entire herd may be affected.

Will they die?

Mortality rates vary widely, from just a few pigs here and there to all of them in the community.

Transmission of ASF virus:

- (a) ticks feed on warthogs which are carriers of ASF, so the ticks now become carriers
- (b) when the ticks feed on a pig, they pass ASF to the pig
- (c) infected pigs then pass ASF to other pigs in the herd.



SYNDROMIC SURVEILLANCE

SICK PIGS (ASF)

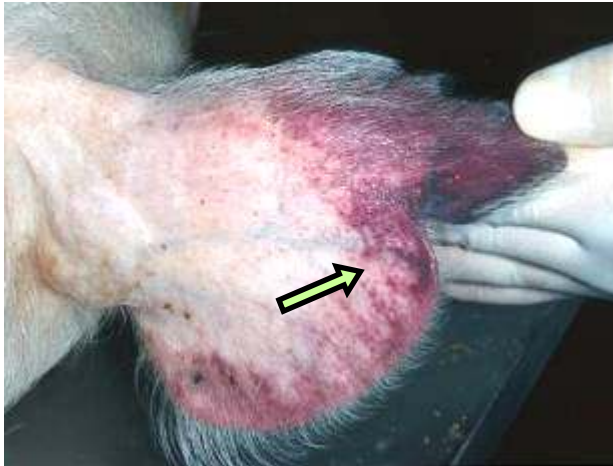
High fever. Skin on ears and tail is RED.
Pigs stop eating, and huddle with each other.



Tick feeding
on ear of a pig



The edges
of the
ears may
become
dark red to
blue



SYNDROMIC SURVEILLANCE

...signs of ASF

A big ulcer in the skin

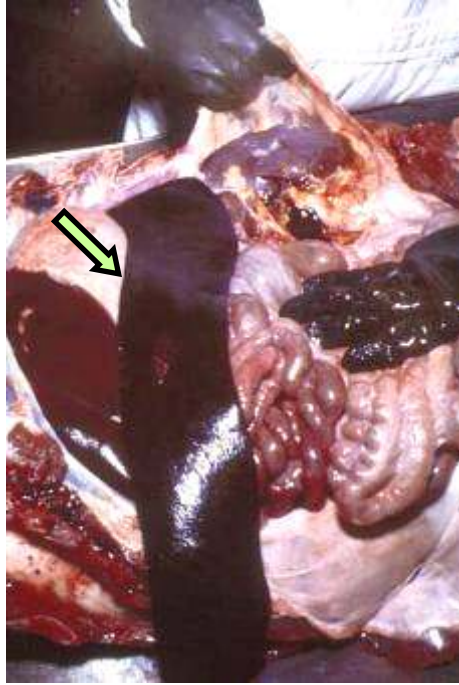


Dark red spot on skin, which will become an ulcer

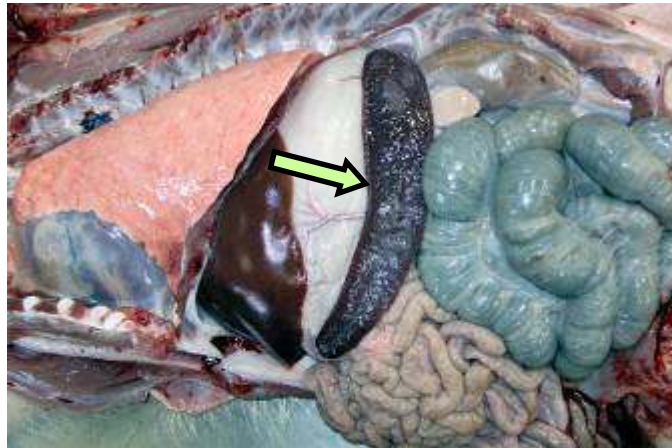


DEAD PIGS (ASF)

The spleen becomes HUGE, this spleen is probably 4X to 5X its normal size

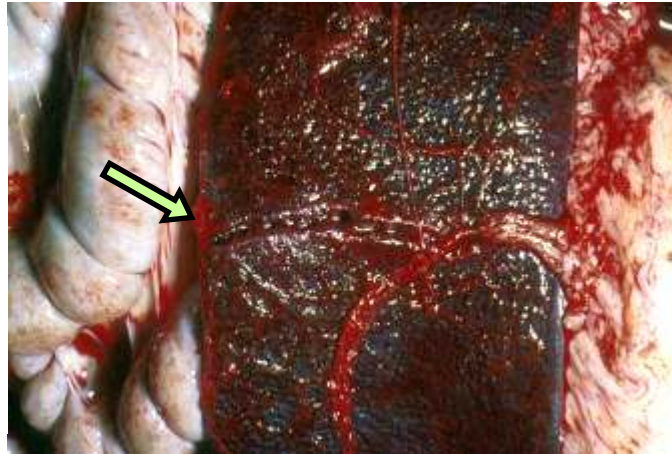


Here is the spleen of a healthy animal

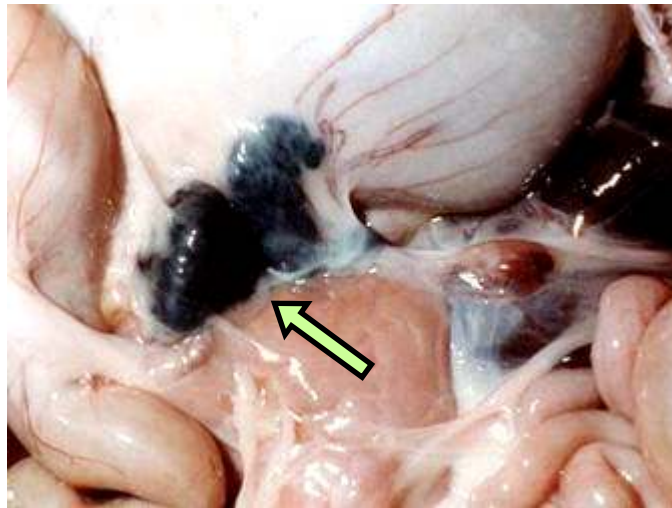


...lesions of ASF

Spleen is
enlarged
and breaks
easily

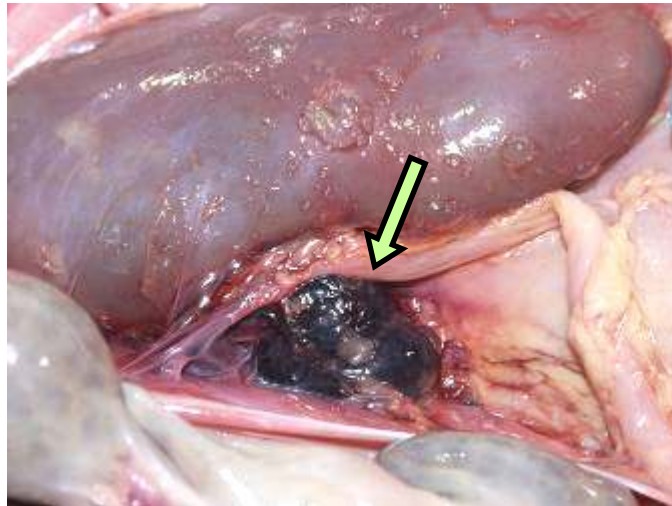


Very enlarged
dark red
(hemorrhagic)
gastrohepatic
lymph node in
a pig infected
with ASF



...lesions of ASF

African swine
fever -
enlarged
dark red
renal lymph
node



**If you see this disease, please call your local
Veterinary Officer.**



4. CLASSICAL SWINE FEVER (CSF)

◆ *A Transboundary Animal Disease* ◆

Other names

Hog cholera, peste du porc

Who gets it?

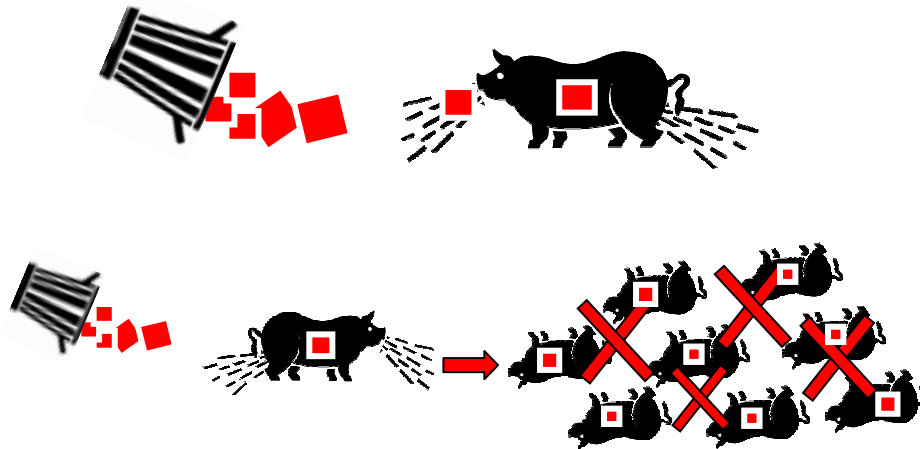
Pigs



How do they get it?

Feces and saliva have the virus so it can spread that way. PEOPLE can transmit this disease because it survives on boots, clothing, and tools. Since the virus is in the muscle of infected pigs, it can also be spread in pork scraps fed to pigs.

IF A PIG EATS INFECTED SCRAPS OF FOOD, IT CAN THEN INFECT OTHER PIGS



SYNDROMIC SURVEILLANCE

How many animals in the herd will be affected?

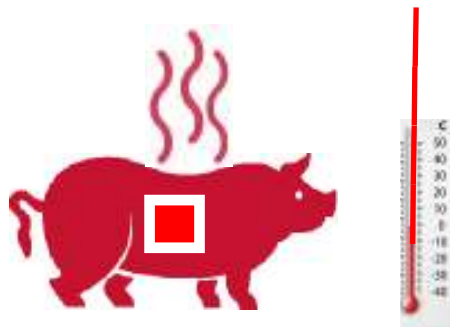
Most animals in the herd will be affected as this is a very contagious disease.

Will they die?

The percentage of pigs which die depends on the type of strain of the infecting virus. Deaths can range from just a few pigs here and there to the entire herd.

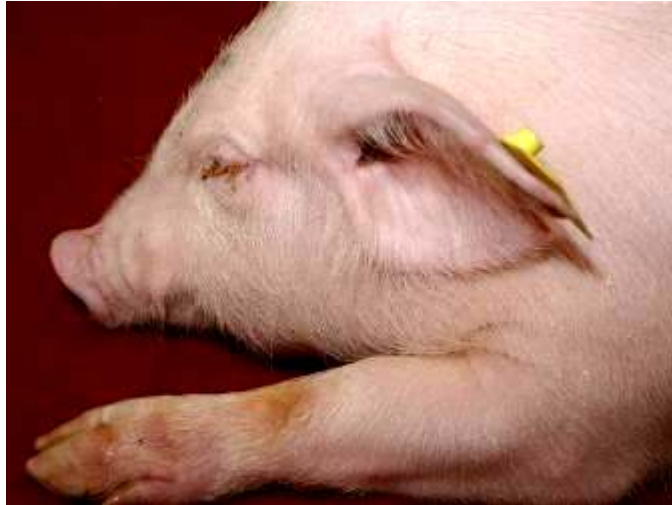
SICK PIGS...

They have a fever, and huddle together. They don't eat much, they lose weight, and they might have convulsions.



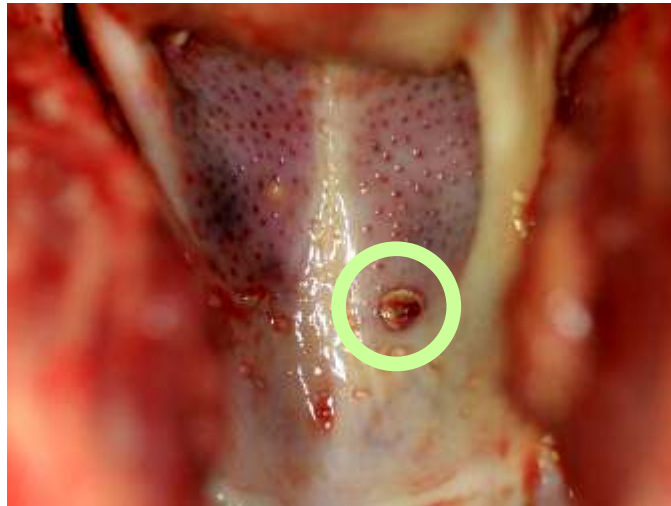
SICK PIGS (CSF)

Affected pigs are depressed, and there may be crusty bloody fluids around the eyes



DEAD PIGS (CSF)

Dead tissue in tonsils is a typical feature of the disease



SYNDROMIC SURVEILLANCE

**If you see this disease, please call your local
Veterinary Officer.**



SHEEP, GOATS, CATTLE and HORSE SECTION



DIARRHEA

RESPIRATORY

MOUTH & FOOT LESIONS

SKIN DISEASES

ABORTION

SYNDROMIC SURVEILLANCE



(A) DIARRHEA

**5. PESTE DES PETITS RUMINANTS
(PPR)**

◆ *A Transboundary Animal Disease* ◆

Other names

Goat plague, pest of small ruminants, pseudo-rinderpest, kata, and these local names: -Sotoka ya Mbuzi (Swahili)
-Maketh thook, Jok thook, Aluraage, and Awet tok (Dinka)
-Gulhay mesel himam tele-begie (Eritrean)
-Susun, Dabawalah, and Aqmar (Somali) / -Taaoon Sudanese)
-Joyigbolo ka binya (Jur) / -Joy (Muro) / -Loomo (Turkana)
-Dabakaruub and Dagee Cabe (Djibouti)
-Susun, Hulumbe (Djibouti)

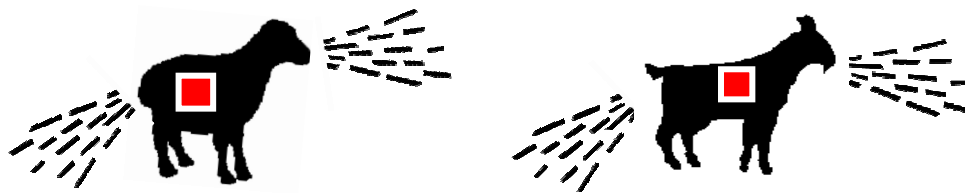
Who gets it?

Sheep and goats



How do they get it?

Feces and saliva can transmit it.

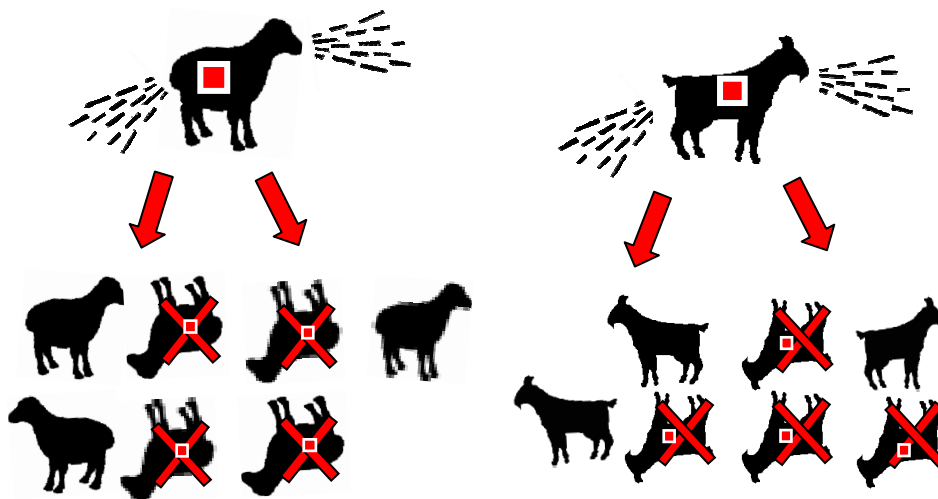


How many animals in the herd will be affected?

Young stock (kids and lambs) will suffer more. In susceptible sheep and goat populations, almost all of the animals will get sick.

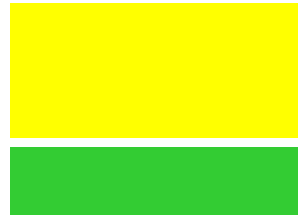
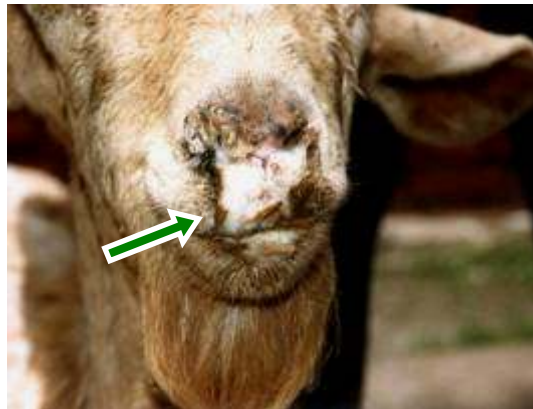
Will they die?

Most of the affected animals will die. The young animals are especially susceptible. Older animals are likely to have severe disease if they have other complicating factors – such as parasitic infestation, poor nutrition, lack of shelter, and adverse climatic conditions.



SICK ANIMALS (PPR)

PPR can result in discharge around mouth and nose, and foul-smelling diarrhea



SYNDROMIC SURVEILLANCE

...signs of PPR

Crusting
around the
mouth and
nose, and
also open-
mouthed
breathing



...signs of PPR



Crusting around eyes



Crusting around nose

DEAD ANIMALS (PPR)

Ulcers in
the mouth



The mouth
can have
severe ulcers,
which is one
reason why
animals don't
want to eat



...lesions of PPR

Lungs are
reddened



Lungs can
be very
reddened,
and animals
have trouble
breathing



**If you see this disease, please call your local
Veterinary Officer.**



SYNDROMIC SURVEILLANCE



(B) RESPIRATORY

**6. CONTAGIOUS BOVINE
PLEUROPNEUMONIA
(CBPP)**

◆ *A Transboundary Animal Disease* ◆

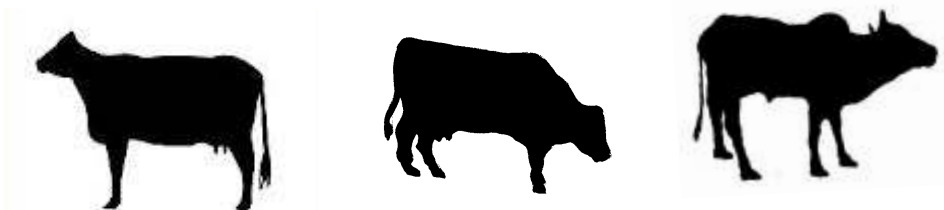
Other names

Grunting disease, and these local names:

- Homa ya Mapafu (ya Ng`ombe) (Swahili)
- Himam sanboo kebty (Eritrean)
- Sambabka loda (Somali) / -Abo Ghineet (Sudanese)
- Kaza ngazira (Zande) / -Kihaha (Luganda)
- Aputukou (Jur) / -Adravo Kwarao (Muro)
- Abutpoaur Hook, Abortio (Dinka)
- Sambab (Sambabka loda) / -Sangiite (Laa) (Djibouti)

Who gets it?

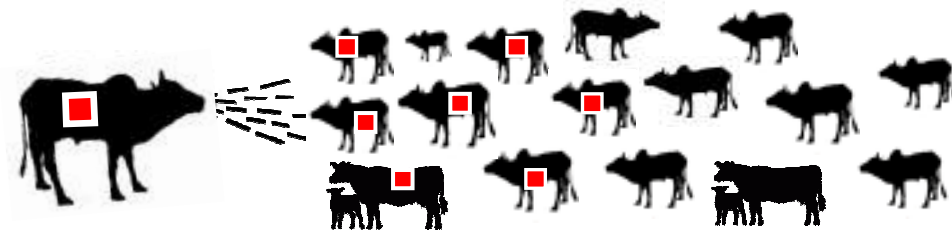
All breeds of cattle are susceptible.



SYNDROMIC SURVEILLANCE

How do they get it?

Only saliva or mucus from the nose can spread the disease.
Animals must be very close together to catch it.

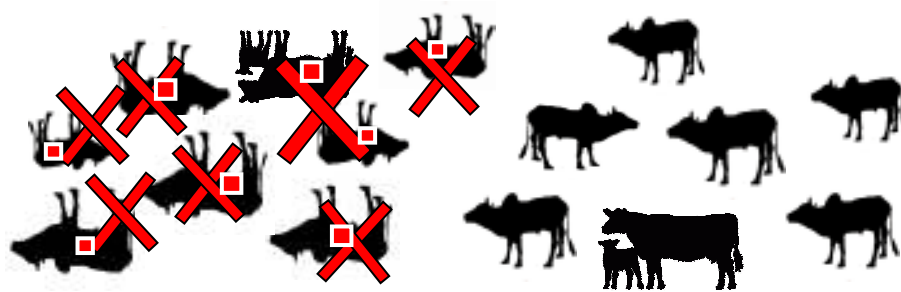


How many animals in the herd will be affected?

When there is close contact of animals, many animals will be affected.

Will they die?

Many of the animals that develop severe respiratory problems will die.



SICK ANIMALS (CBPP)

Animals are depressed and have a runny nose



Cow with runny nose



...signs of CBPP

The extended neck and head are due to respiratory distress and coughing

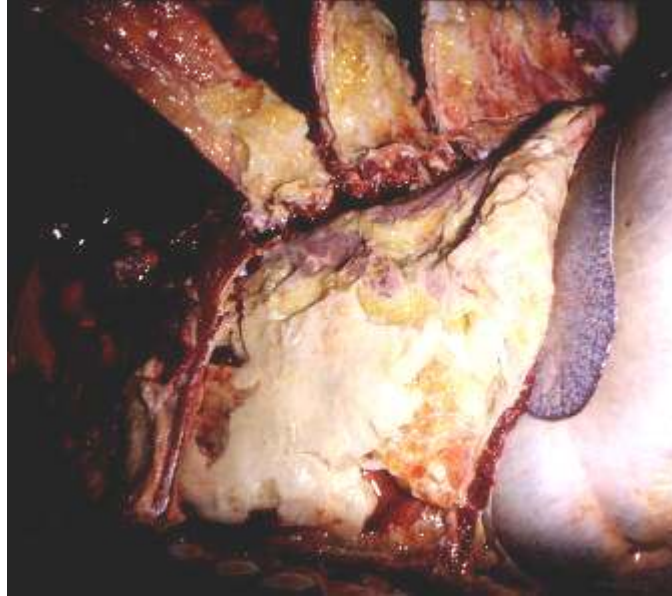


Animals with CBPP are often depressed and separate themselves from the herd

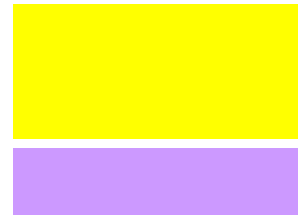


DEAD ANIMALS (CBPP)

Lungs have
yellow covering



Lungs can be
covered with
yellow material

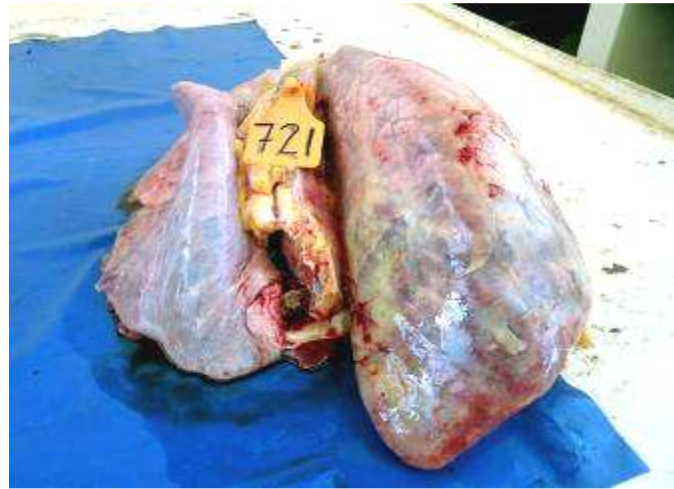


...lesions of CBPP

Lungs may
have
abundant
yellow
material
within



CBPP
usually
affects only
one side of
the lungs



...lesions of CBPP

Lungs may have a prominent marbled appearance



When you cut through the lungs, they are heavy and firm, and there is a network pattern known as marbling



SYNDROMIC SURVEILLANCE

**If you see this disease, please call your local
Veterinary Officer.**



7. CONTAGIOUS CAPRINE PLEUROPNEUMONIA (CCPP) ◆ *A Transboundary Animal Disease* ◆

Other names

- Homa ya Mapafu (ya Mbuzi) (Swahili)
- Abo Neene (Sudanese) / -Himam sanboo atal (Eritrean)
- Sambabka riyaha (Somali) / -Kaza ngazira (Zande)
- Aputukou (Jur) / -Adravo Kwarao (Muro)
- Abutpoaur thook, Mathiek (Dinka)
- Sambab (Sambabka Adhiga) / -Wadara Sangiite (Djibouti)
- Lkipei (Samburu) / -Louki (Turkana)

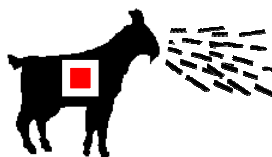
Who gets it?

Goats. Every so often, a sheep, kept with goats, can get it.



How do they get it?

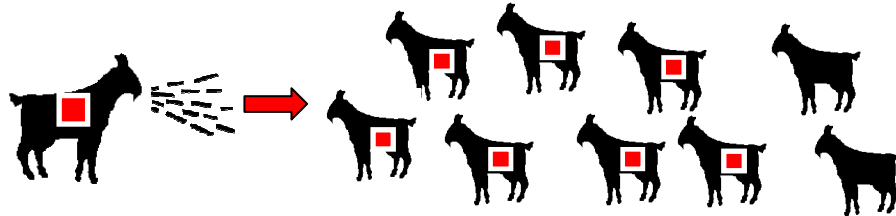
Saliva or mucus from the nose may spread it. Animals need to be close in order to catch it.



SYNDROMIC SURVEILLANCE

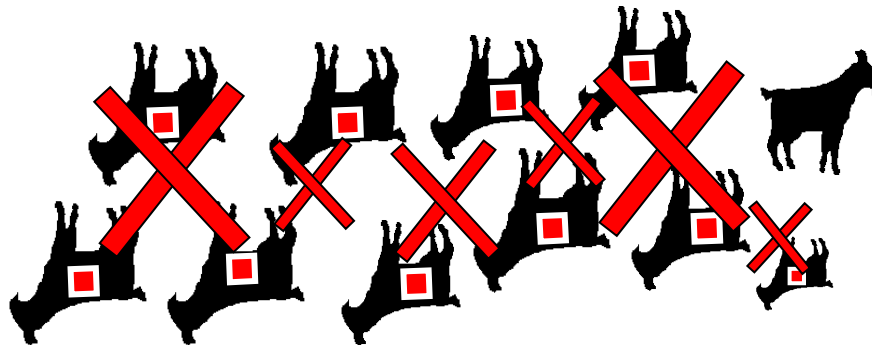
How many animals in the herd will be affected?

Many animals in the herd may get the disease.



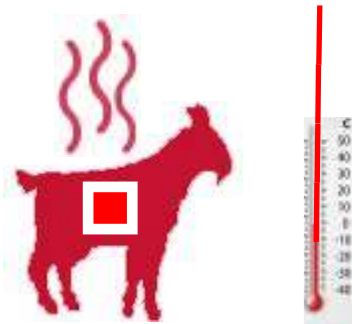
Will they die?

Most of the infected animals will die.



SICK ANIMALS

Infected goats will have extreme fever, severe difficulty breathing, coughing, and high mortality. Decreased energy, weight loss. Possible grunting and bleating. Frothy nasal discharges prior to death.



SICK ANIMALS (CCPP)

Goat with
nasal
discharge
due to CCPP

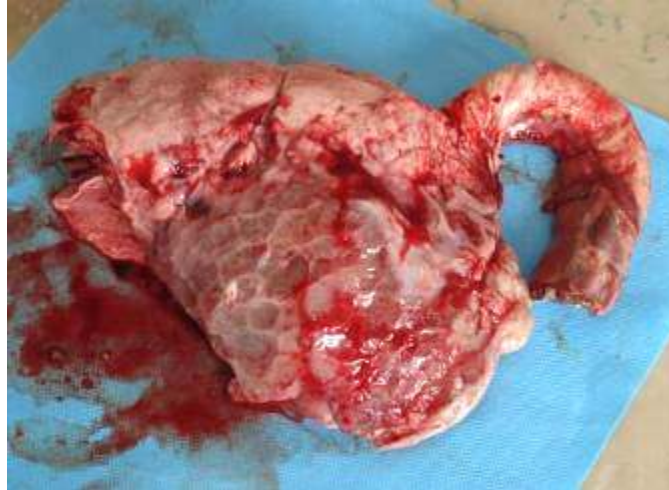


Goat infected
with CCPP
showing
respiratory
distress



DEAD ANIMALS (CCPP)

Lung is firm,
enlarged,
and bloody



Often the
lung may be
stuck to the
body wall
(adhesion)



...lesions of CCPP

The lungs are severely affected by this disease, and are almost unrecognizable as lungs



**If you see this disease, please call
your local Veterinary Officer.**



SYNDROMIC SURVEILLANCE



8. EAST COAST FEVER (ECF)

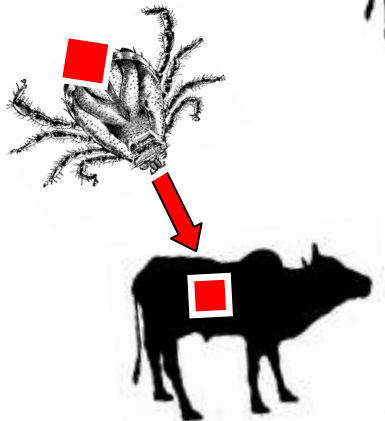
◆ *A Transboundary Animal Disease* ◆

Other names

Theileriasis, Theileriosis, Zimbabwean tick fever, African Coast fever, Corridor disease, January disease, and these local names: -Ndigana Kali (Swahili) / -Ngai (Kikuyu) -Lipis (Samburu)

Who gets it?

Cattle and buffalo



How do they get it?

By infected brown ear ticks. The ear is the preferred feeding site of this tick.

How many animals in the herd will be affected?

The number of animals affected depends on the number of infective ticks and the degree of acaricide (anti-parasite) protection. It can range from a couple of animals to many.

SYNDROMIC SURVEILLANCE

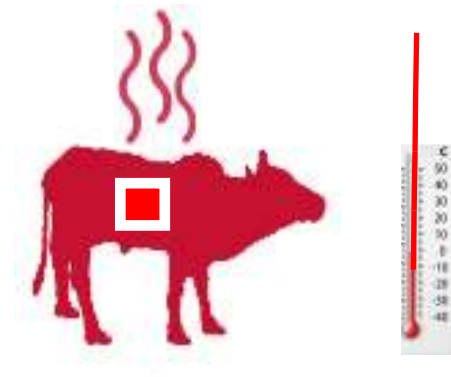
Will they die?

Most of the animals that get sick with ECF will die.



SICK CATTLE AND BUFFALO

ECF is characterized by high fever and swelling of the lymph nodes. Then infected animals stop eating, have difficulty breathing, and die.

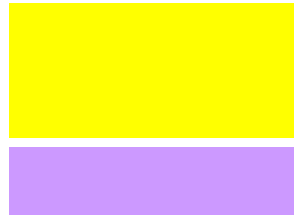


SICK ANIMALS (ECF)

Animals
may
have
enlarged
lymph
nodes

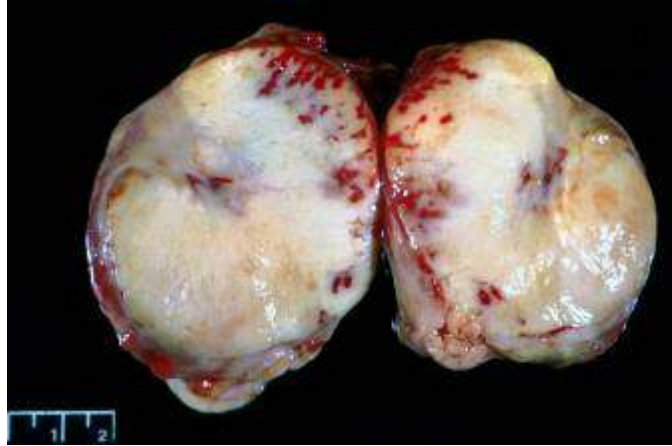


Difficult
breathing
is seen
in this
cow with
an open
mouth

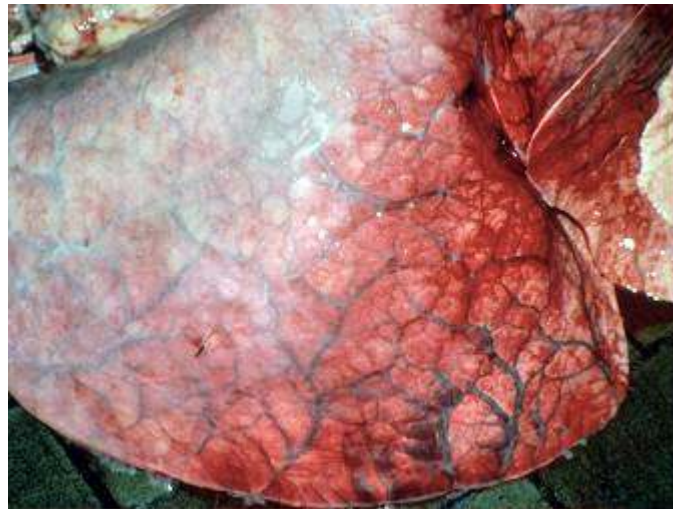


DEAD ANIMALS (ECF)

Swollen
lymph nodes
are
evident
after
dissection



Lungs can be
very wet and
heavy



...lesions of ECF

Lung is extremely wet in animals which die from ECF and the airways are full of froth



**If you see this disease, please call your local
Veterinary Officer.**



SYNDROMIC SURVEILLANCE



9. HEARTWATER

◆ A Transboundary Animal Disease ◆

Other names

Cowdriosis, and these local names:

-Wadna biyood (Somali)

-Himam sanboo atal (Eritrean)

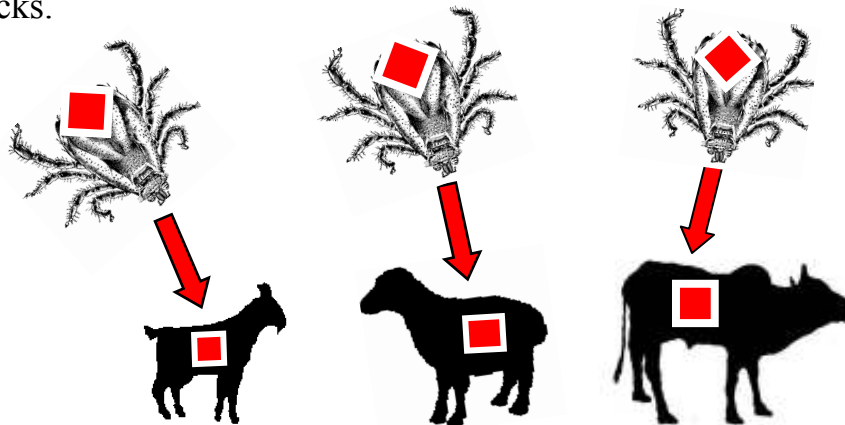
Who gets it?

It affects cattle, sheep, and goats.



How do they get it?

Heartwater is caused by a small bacteria that is transmitted by ticks.

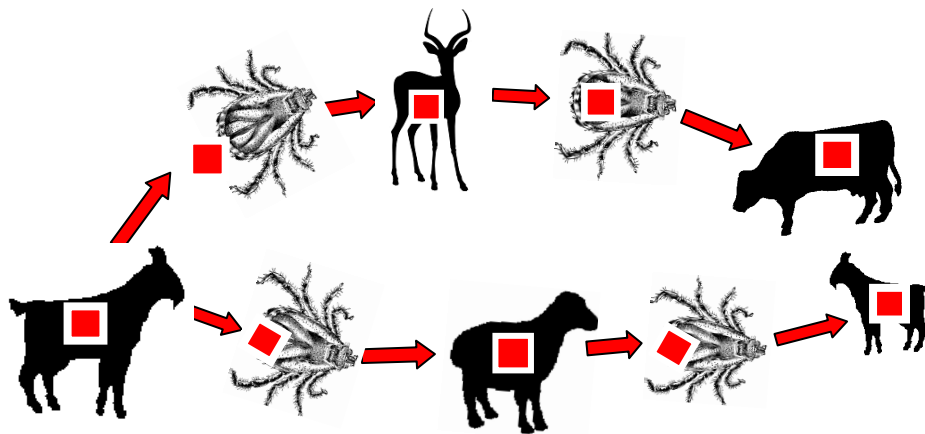


SYNDROMIC SURVEILLANCE

How many animals in the herd will be affected?

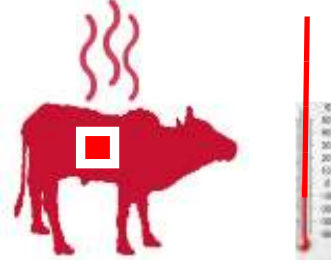
It depends on the degree of tick infestation, the previous exposure of the animals to infected ticks, and the level of acaricide (pesticide) protection. Just one animal or many can be affected.

Heartwater spreads from one animal to another by a tick bite. It cannot spread from animal to animal without a tick.



What will the animals look like clinically?

They have high fever. They are depressed and breathe rapidly. Then, they develop nervous signs such as convulsions or crooked necks and they die.

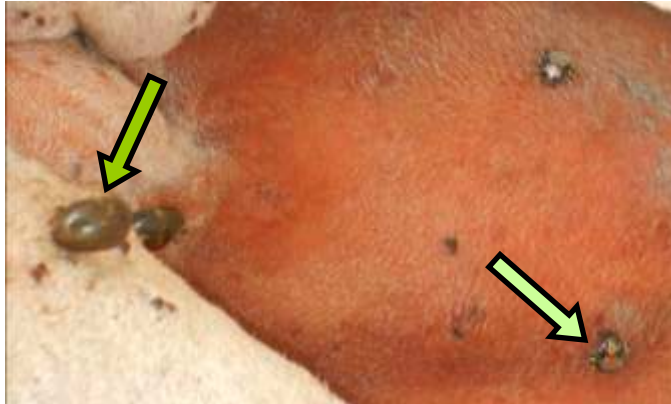


Will they die?

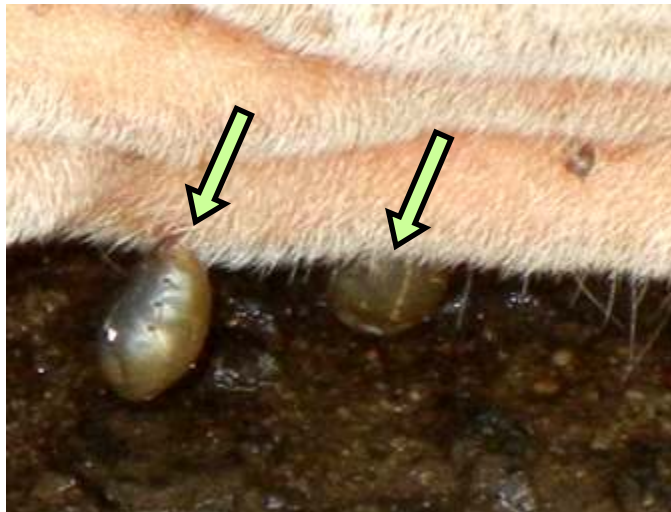
The death rate in infected animals is very high.

SICK ANIMALS (Heartwater)

Amblyomma
ticks on
the skin of a
bull



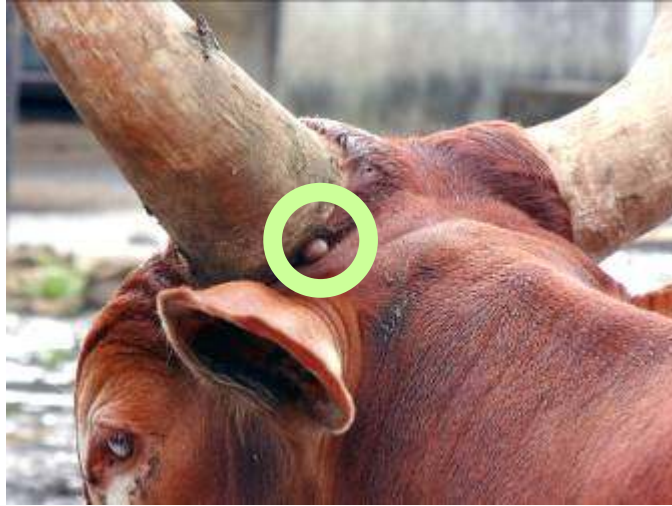
Engorged
Amblyomma
ticks on
the skin



SYNDROMIC SURVEILLANCE

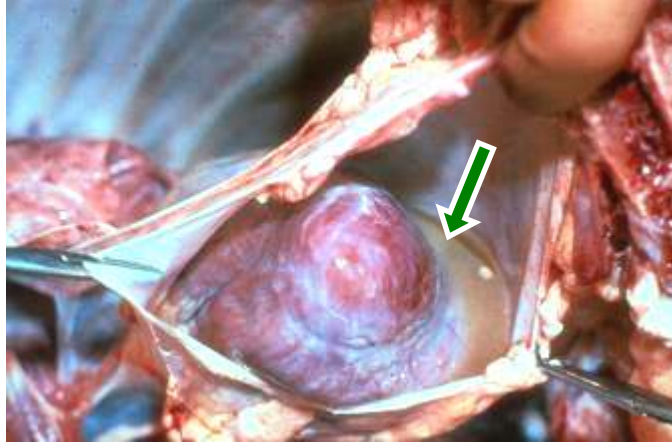
...signs of heartwater

Engorged
Amblyomma
tick

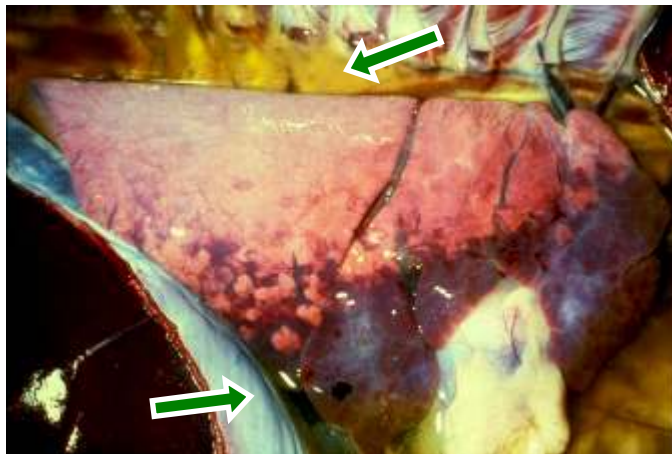


DEAD ANIMALS (Heartwater)

Excess fluid
around the
heart



Excess fluid in
and around the
lungs



**If you see this disease, please call your local
Veterinary Officer.**



SYNDROMIC SURVEILLANCE



10. AFRICAN HORSE SICKNESS (AHS)

◆ *A Transboundary Animal Disease* ◆

Other names

Star disease, perdesiekte, pestis equorum, peste equine, and these local names:

- Mendef (Eritrean)
- Dafa,a (Somali)

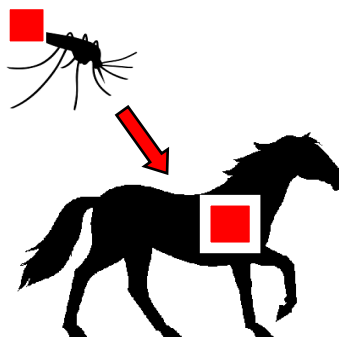
Who gets it?

Horses are most susceptible to AHS, and mules are less susceptible. Donkeys and zebras are very resistant to it.



How do they get it?

The AHS virus is transmitted by small biting insects. After biting an infected horse, they can spread it to other animals.



These insects are most active just after sunset and at sunrise. They are very tiny and range in size from 1mm to 4mm.

Size of Biting Insects

The actual size of these biting insects ranges from 1mm to 4 mm:



The insect in the above box is about 1 mm



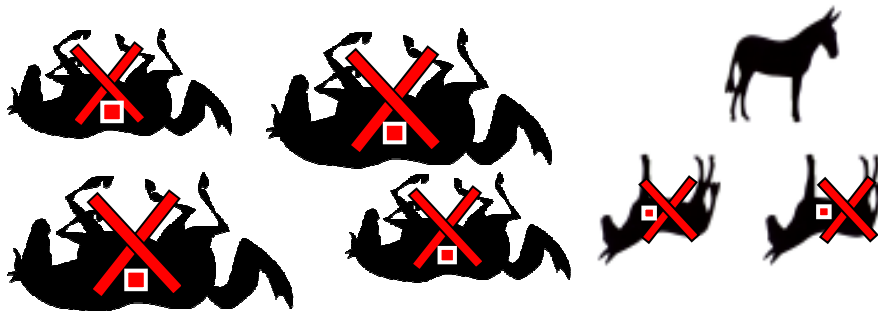
This insect is about 4mm

How many animals in the herd will be affected?

The number of infected animals will depend on the number of infected insects. If there are many insects, there will likely be many dead horses.

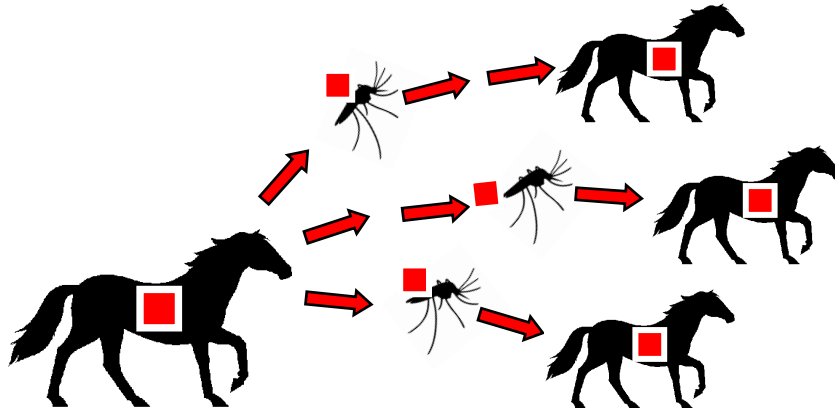
Will they die?

The death rate for horses is high. In mules, the rate is lower.



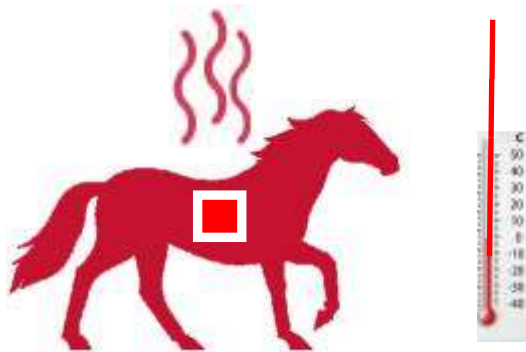
SYNDROMIC SURVEILLANCE

AHS spreads from one horse to many through small flying insects.



SICK ANIMALS (AHS)

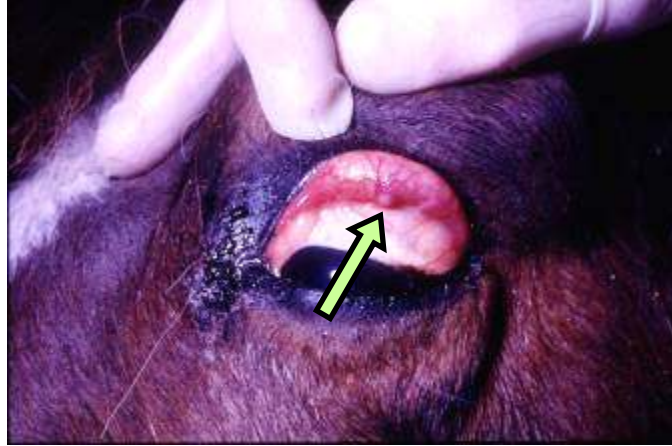
They will have high fever with sweating, then coughing and severe problems with breathing. There will be foam from the nostrils, then death.



SYNDROMIC SURVEILLANCE

...signs of AHS

Eye
membranes
are red and
swollen



Area above
the eye is
swollen



DEAD ANIMALS (AHS)

Horse has died, with froth at the nose

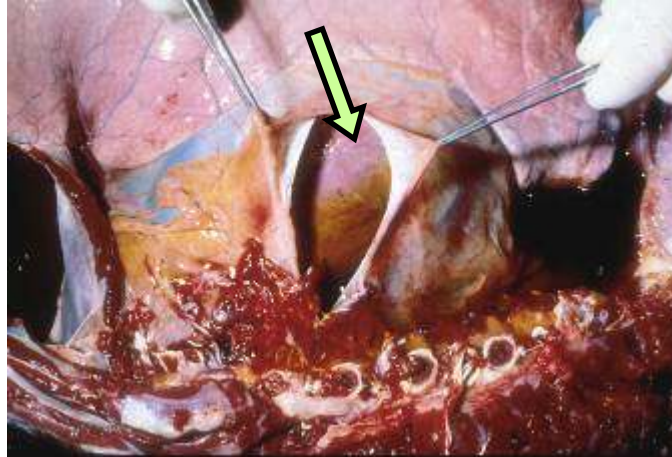


Lungs are FILLED with fluid



...lesions of AHS

The sac
around the
heart may
be filled
with fluid



**If you see this disease, please call your local
Veterinary Officer.**



SYNDROMIC SURVEILLANCE



(C) MOUTH AND FOOT LESIONS

11. FOOT-AND-MOUTH DISEASE (FMD)

◆ *A Transboundary Animal Disease* ◆

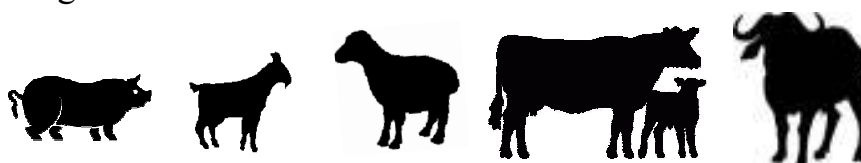
Other names

Tongue disease, hoof-and-mouth disease, aftosa, fievre aphteuse, and these local names:

- Bamburu nga ga ngbaa na sukutu (Zande)
- Ugonjwa wa Miguu na Midomo (Swahili)
- Abo Lessan (Sudanese) / -Anaso (Eritrean)
- Kalusu (Luganda) / -Oloirobi (Maasai)
- Ngorundibongo (Jur) / -Kadakada (Muro) / -Cabeeb (Somali)
- Cabeeb, Qabeeb (Djibouti) / -Daat/Diet (Dinka)
- Lokomol (Toposa, Buya, and Dadinga)

Who gets it?

All cloven-hoofed animals are susceptible to FMD. Cattle often show a more severe form of the disease than do sheep and goats.

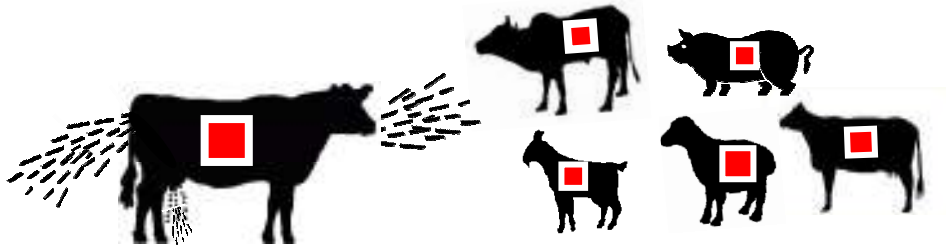


How do they get it?

Air breathed out by infected animals is infectious and will cause disease in other animals breathing in that air. Another

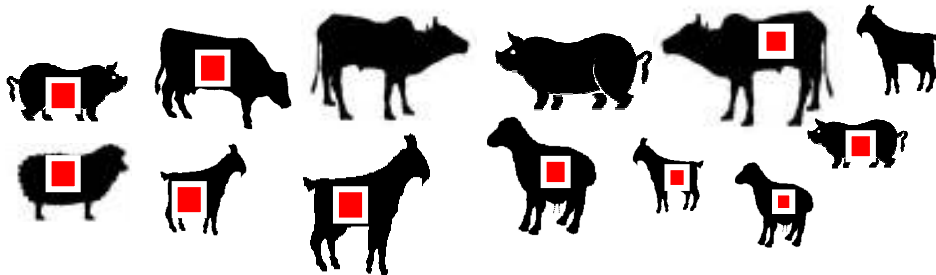
SYNDROMIC SURVEILLANCE

method of transmission is by ingestion of contaminated forage and water. Also, all body excretions, including urine, milk, feces, and semen are infective.



How many animals in the herd will be affected?

It will spread very quickly through an entire herd. It is **EXTREMELY** contagious. You can expect most animals to show clinical signs.



Will they die?

No, this is not usually a fatal disease. Adults will recover, but a few very young or newborn animals may die from the disease. Some will have permanent foot problems.

(...see photos next page)

SICK ANIMALS (FMD)

Animals get
very sore feet
so they lie
down or kneel



Saliva
dripping from
the mouth of
a cow



...signs of FMD

Sores in the mouth of a cow begin as blisters



Gum lesions seen during FMD examination



...signs of FMD

Sores due to FMD... these are starting to heal

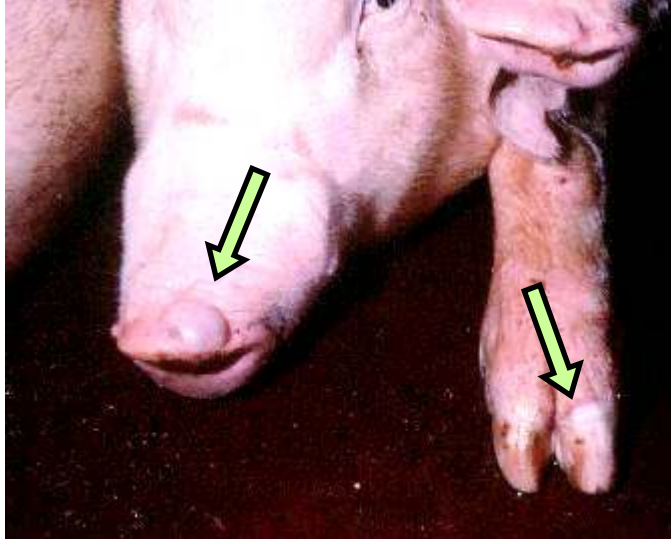


The lesions around the hooves may be so severe that the outside of the hoof will fall off



...signs of FMD

Pigs can get big blisters on their snouts, in addition to the lesions in the feet

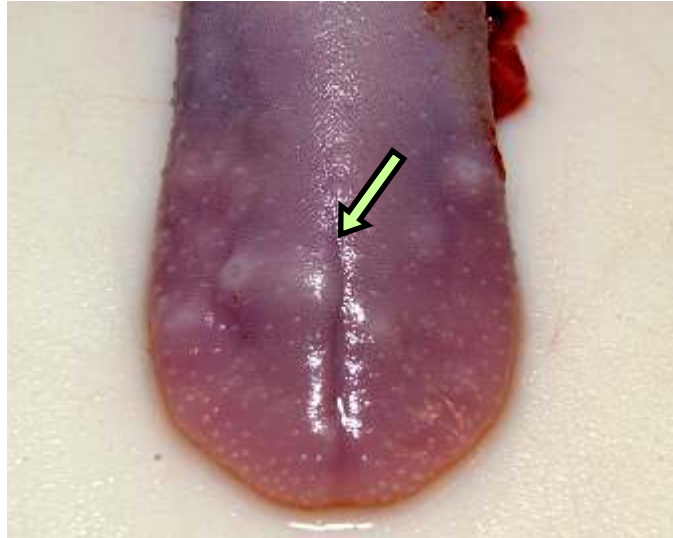


Ulcers around the feet can cause great pain, and permanent foot problems



...signs of FMD

Blisters
forming on
the tongue
of an
infected
sheep



BLISTERS ARE THE FIRST SIGN OF FMD,
SO IMMEDIATELY REMOVE AND ISOLATE
ANY ANIMAL WITH A **BLISTER**

If you see this disease, please call your local
Veterinary Officer.



(D) SKIN DISEASE**12. SHEEP POX AND GOAT POX
(SP, GP)****◆ A Transboundary Animal Disease ◆****Other names**

Sheep pox, Goat pox, SGP, Capripoxviruses, and these local names:
 -Bakofo nga ga ameme na akandoro (Zande)
 -Ndui ya Kondoo na Mbuzi (Swahili) / -Gadari (Sudanese)
 -Furuqa adhiga, Furuqa riyaha (Somali) / -Ormoko (Maasai)
 -Kawaali (Luganda) / -Fromai tele-begie (Eritrean)
 -Furuqa Adhiga, Geed Caanood (Djibouti)

Who gets it?

Sheep and goat pox affects all ages and breeds of domestic and wild sheep and goats. The viruses involved usually infect only one species, so goats get goat pox and sheep get sheep pox.

**How do they get it?**

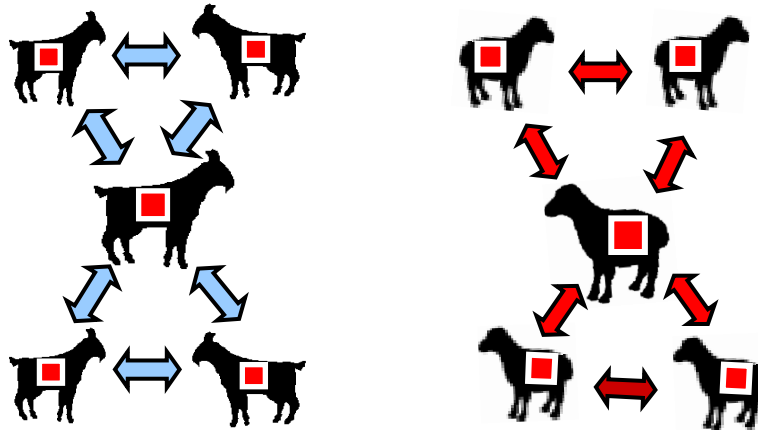
Skin sores and saliva are infectious. Skin scabs can be infectious for a long time. Other animals contacting the scabs will get sick.



Sheep with SP only infect other sheep

-and-

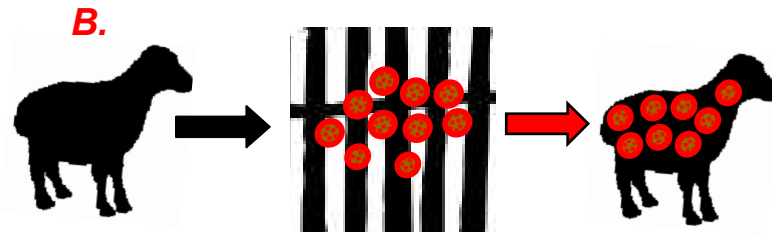
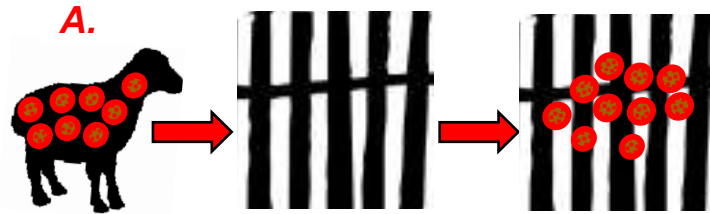
Goats with GP only infect other goats



SGP TRANSMISSION

A. If an infected animal with scabs rubs or scratches itself on a fencepost, the live virus can be transmitted to the fencepost from the scabs.

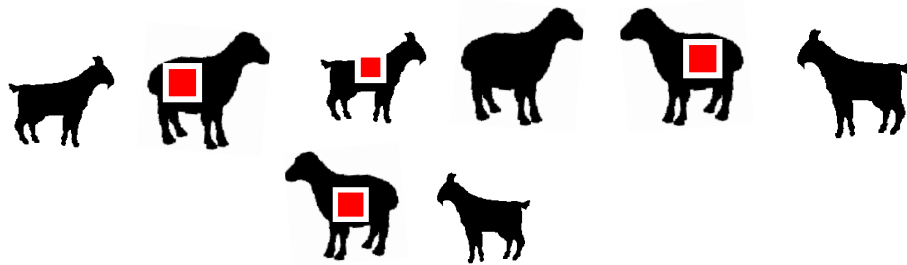
B. Then, an uninfected animal can become infected by rubbing against the same fencepost.



SYNDROMIC SURVEILLANCE

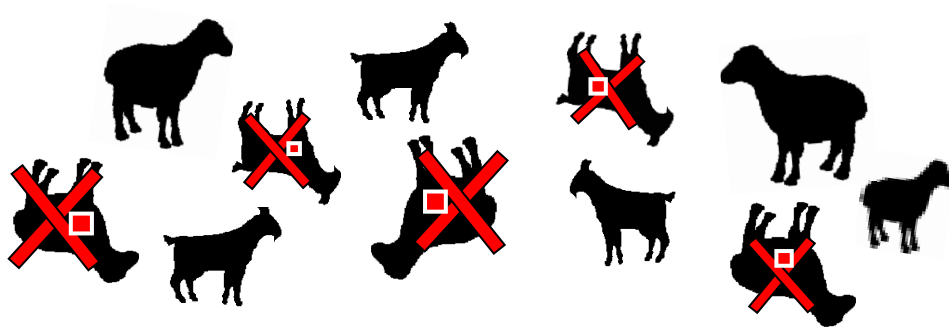
How many animals in the herd will be affected?

Usually most of the animals in the herd or flock will show some disease.



Will they die?

Some animals will die, and it may depend on other factors present – such as parasites, nutrition, and weather.



SICK ANIMALS (SGP)

Darkened
pimples
(papules) form
on the lips of a
sheep infected
with sheep pox



Blackhead
sheep with
typical lesions
of sheep pox



SYNDROMIC SURVEILLANCE

...signs of SGP

Sheep pox
results in
raised
darkened
spots on the
animal's
skin



There can
be multiple
raised spots
all over the
skin



...signs of SGP

Typical signs
of goat pox



Pimples
(papules) are
developing
on the
underside of
the tail due
to sheep pox



DEAD ANIMALS (SGP)

Lungs can have multiple nodules and spots in SP and GP



If you see this disease, please call your local Veterinary Officer.



13. LUMPY SKIN DISEASE OF CATTLE (LSD)

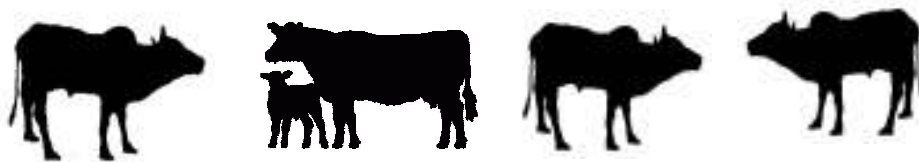
◆ *A Transboundary Animal Disease* ◆

Other names

- Matooteot and Matontun (Dinka)
- Makpurunya (Zande) / -Furuqa loda, Liges (Somali)
- Abo Deredmat (Sudanese) / -Kifuluuto (Luganda)
- Ugonjwa wa Mapele Ngozi (Swahili) / -Enariri (Maasai)
- Murimu wa Thundo (Kikuyu) / -Fromai kebty (Eritrean)

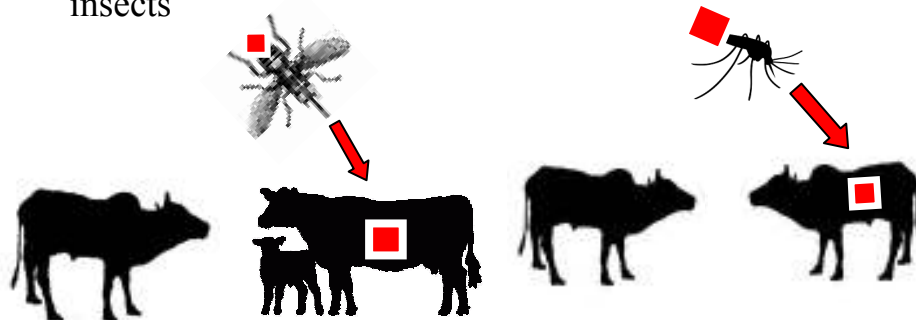
Who gets it?

Cattle



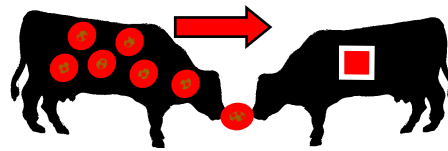
How do they get it? There are 2 methods of transmission:

- (1)** From mosquitoes and other biting and blood feeding insects



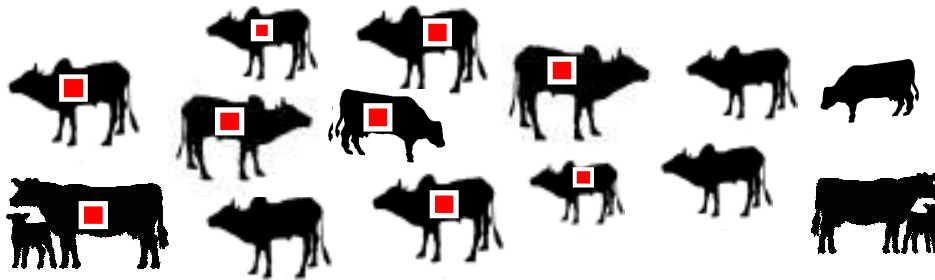
SYNDROMIC SURVEILLANCE

(2) Uninfected animals rub against the lesions and become infected themselves



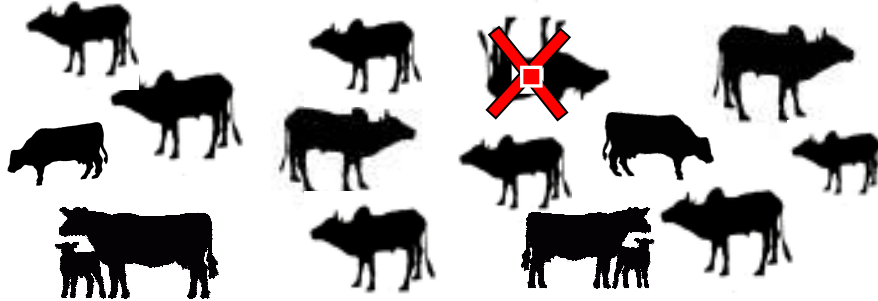
How many animals in the herd will be affected?

Most of the herd will be affected. It starts with high fever and large raised lumps are seen everywhere.



Will they die?

Some animals may die. The hides of infected animals are ruined by the disease.



SICK ANIMALS (Lumpy Skin Disease)

Lumps all
over the body,
with lumpy
skin disease



Nodules are
very thick
and damage
the hide



...signs of Lumpy Skin Disease

Thick nodules
on the skin
are typical of
LSD



Damage to
the hide can
be very
severe
due to LSD

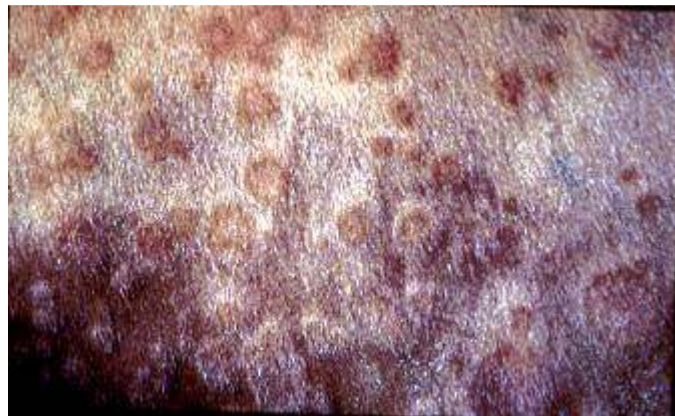


...signs of Lumpy Skin Disease

Lesions
due to
LSD are
very deep



Skin
may
have
multiple
nodules



**If you see this disease, please call your local
Veterinary Officer.**



(E) ABORTION

14. BRUCELLOSIS

◆ *A Transboundary Animal Disease* ◆

Other names

Contagious abortion, Bang's disease

In humans, it's known as undulant fever or Malta fever.

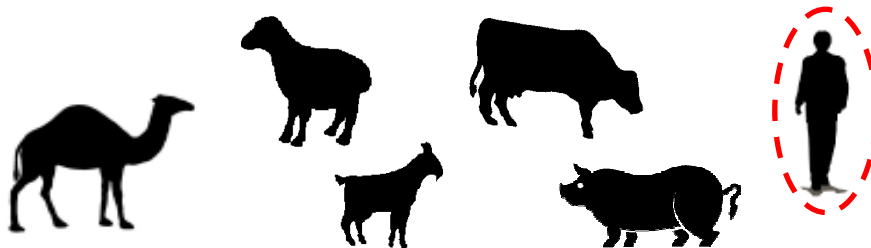
Local names: -Dhiciis (Djibouti) / -Ajoul, Kumkum (Dinka)

-Ugonjwa wa Kutupa Mimba (Swahili) / -Dhiciye (Somali)

-Himam mbran (Eritrean) / -Murimu wa Iria (Kikuyu)

Who gets it?

Lots of species. Humans can also become infected by these bacteria.



How do they get it?

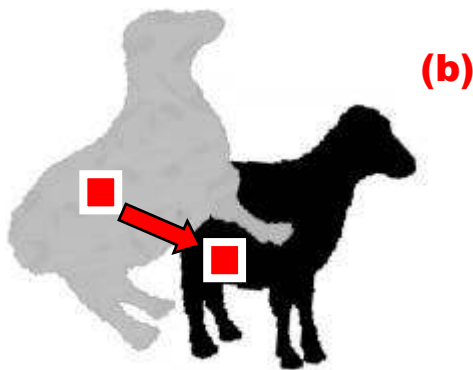
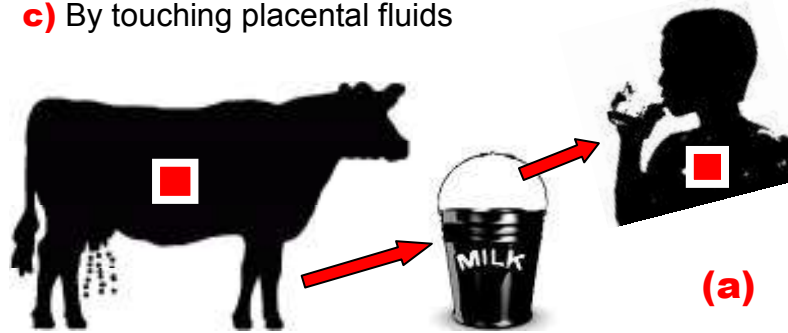
- Direct contact with tissues or fluids from an infected animal
- Consuming milk from an infected animal
- Consuming feed or water that has been contaminated by infected tissues or fluids

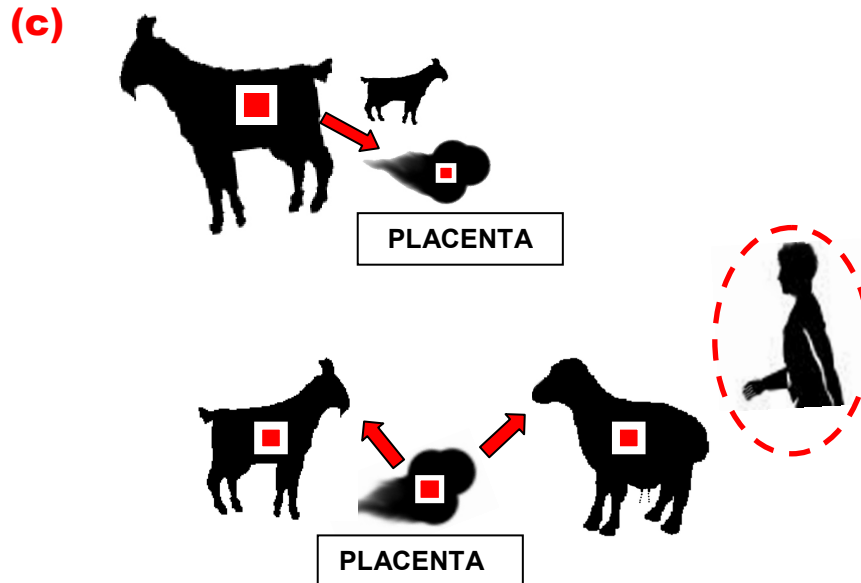
SYNDROMIC SURVEILLANCE

- Through contact with an environment that has been contaminated with vaginal discharges after an infected animal has aborted or calved – such as aborted fetuses and placental membranes or fluids
- Brucellosis can be carried from one herd to another by an infected or exposed animal

Brucellosis spreads in many ways, for instance:

- a)** By drinking the milk of an infected animal
- b)** From one animal to another by mating
- c)** By touching placental fluids





How many animals in the herd will be affected?

Many of the animals in a herd will be infected but may not appear to be ill.

**STEPS TO PREVENT HUMAN CASES
OF BRUCELLOSIS:**

1. Do not eat meat that may be contaminated with this bacteria unless it is thoroughly cooked.
2. Do not drink raw milk or eat unpasteurized milk products such as fresh cheese.
3. Wear sturdy rubber or plastic gloves when assisting calving or aborting animals, and scrub well with soap and water afterwards.
4. Clean and disinfect animal birthing areas and other places likely to become contaminated with infective material.

What will the animals look like clinically?

The most obvious signs are abortions and low milk production. Infected adult animals may appear very healthy.

Will they die?

The young animals inside the uterus will die and be aborted.



SICK ANIMALS (Brucellosis)

Abortion and retention of placenta are clinical signs of brucellosis

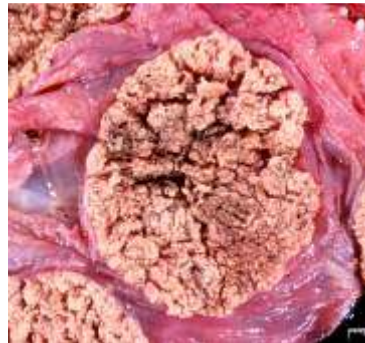


DEAD ANIMALS (Brucellosis)

Aborted fetus
of camel
due to
brucellosis



Aborted fetus of sheep,
due to brucellosis

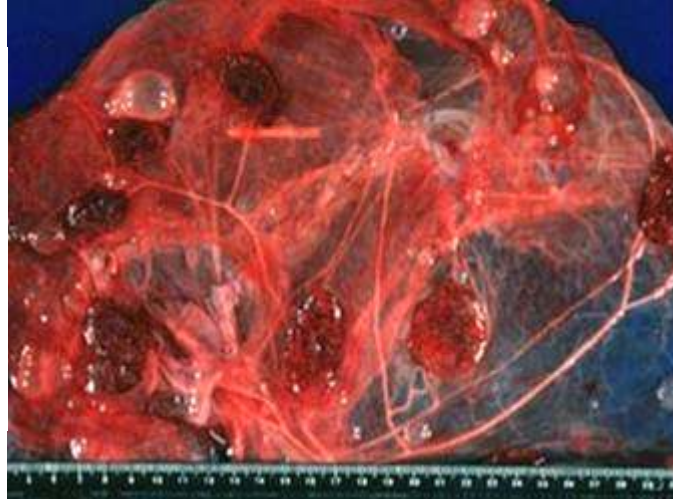


Bovine placenta with very
thickened areas, typical
of brucellosis

SYNDROMIC SURVEILLANCE

...lesions of brucellosis

Normal
placenta



Placenta
affected by
brucellosis –
there are
many
thickened
yellow areas



**If you see this disease, please call your local
Veterinary Officer.**



15. RIFT VALLEY FEVER (RVF)

◆ *A Transboundary Animal Disease* ◆

Other names

Hemorrhage fever, enzootic hepatitis, and these local names:

- Awet, Nyanatek, Maketh, Jokreem (Dinka) / -Bololo (Bari)
- Operit (Lutuka) / -Loperit (Lopit) / -Joy (Muro)
- Homa ya Bonde la Ufa (Swahili) / -Joyigbolo (Jur)
- Xumada Dohada Rifti (Somali) / -Nazafia (Sudanese)
- Batungaru (Zande) / -Xummada Dooxada Rifti (Djibouti)
- Slenkdalkoors (Afrik.)

Who gets it?

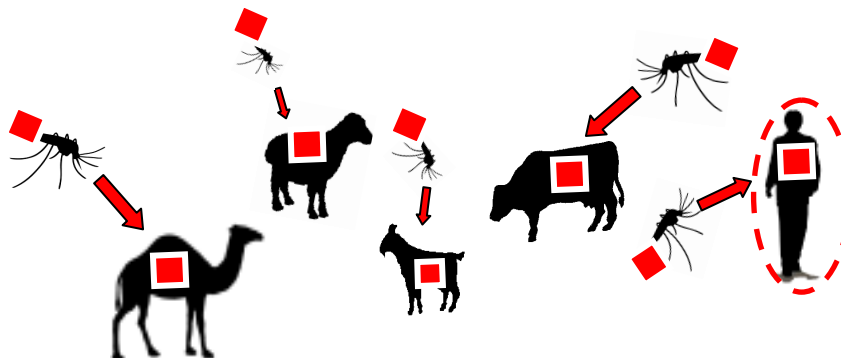
Sheep, goats, cattle and camels.

And humans.



How do they get it?

Mosquitoes become infected and take it from one animal to another. Humans become infected by mosquitoes or through contact with blood from infected animals.



SYNDROMIC SURVEILLANCE

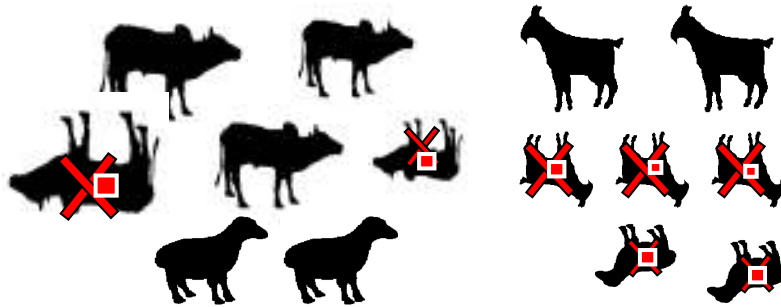
How many animals in the herd will be affected?

It can be very high and affect entire herds, especially when there are a lot of mosquitoes, which happens after heavy rains.



Will they die?

For unborn animals still in the dam, mortality is 100%. For newborn animals, about 10-50% of the animals will die. Older animals may not look sick at all but they have the virus. Mosquitoes can pick up the virus out of the blood and take it to another animal or a human!



What will the animals look like clinically?

There will be abortions. Young animals may be weak, have fever, and yellow mucous membranes.

SICK ANIMALS (RVF)

Skin and
membranes
with yellow
tinge due to
RVF



A goat
infected with
RVF has
aborted



...signs of RVF

A camel
infected with
RVF has
aborted



DEAD ANIMALS (RVF)

Large
distorted
liver



**STEPS TO PREVENT
HUMAN CASES OF RVF**

- 1.** Wear protective clothing if you may be exposed to the blood, body fluids or tissues of an infected animal.
- 2.** If there are many abortions nearby, take special care to avoid being bitten by mosquitoes.

**If you see this disease, please call your local
Veterinary Officer.**



SYNDROMIC SURVEILLANCE



ENDEMIC DISEASES OF CONCERN

16. TRYPANOSOMES

Other names

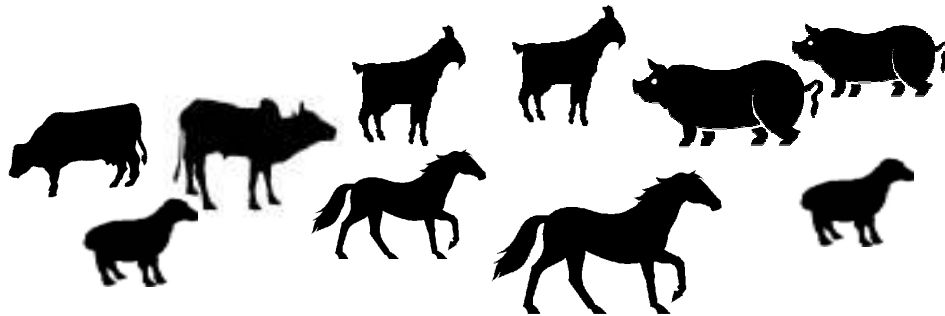
Nagana, African animal trypanosomiasis, trypanosomosis, and these local names: -Ndorobo/Nagana (Swahili)

-Gosha, gindi, gol (Somali)

-Jan or Tsota (Eritrean)

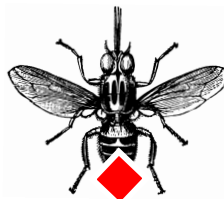
Who gets it?

Cattle, goats, sheep, pigs, horses



How do they get it?

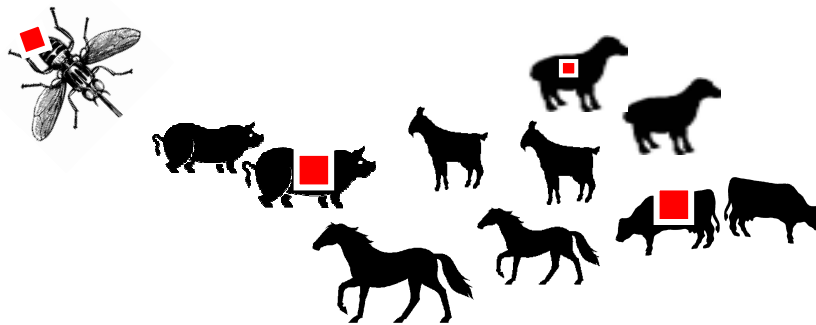
MOSTLY through the bite of an infected tsetse fly. There are some types of trypanosomes that can be transmitted by other flies. But tsetse flies are the most important.



SYNDROMIC SURVEILLANCE

How many animals in the herd will be affected?

Not too many are infected. It depends on whether or not there are tsetse flies.



Will they die?

If infected, they eventually die, but they may be ill for a very long time.

Sick animals

Animals are sick for a long time and become very thin



Dead animals (trypanosomes)

Severe
weight loss



**If you see this disease, please call your local
Veterinary Officer.**



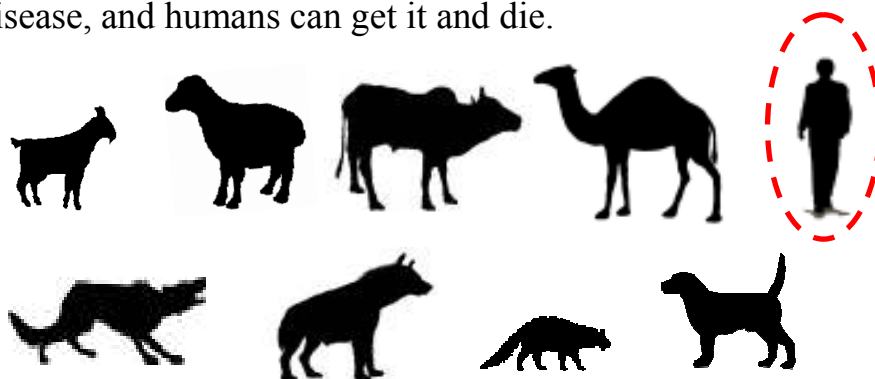
17. RABIES

Other names

Hydrophobia, and these local names: -Kichaa (Swahili)
-Eyda waalan (Somali) / -Himam ubood kelby (Eritrean)

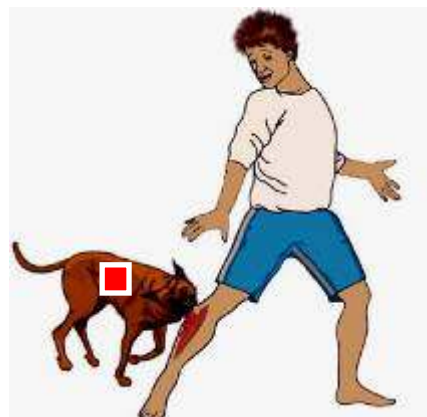
Who gets it?

All mammals. Birds do NOT get it. This is a ZOONOTIC disease, and humans can get it and die.

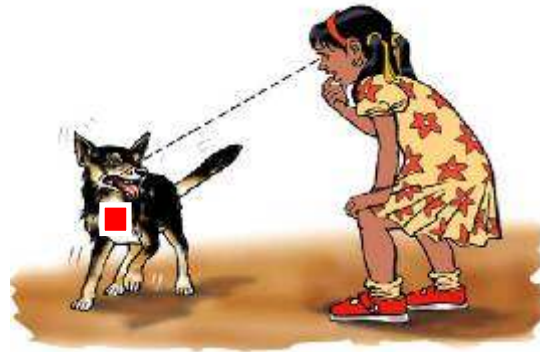


How do they get it?

It is transmitted by a bite of an infected animal, usually a dog. In addition, contact of saliva or blood with a skin wound or mucous membrane will transmit the virus.



SYNDROMIC SURVEILLANCE



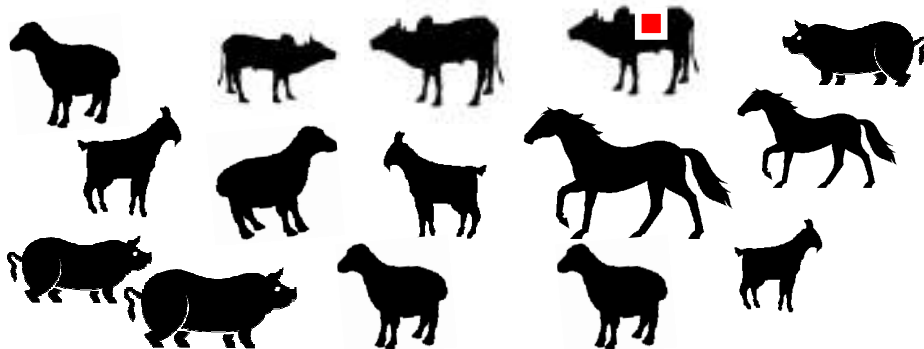
What will they look like clinically?

Symptoms include:

- excessive saliva
- drastic change in behavior
- gentle animals and carnivores become aggressive
- wild animals and herbivores become depressed
- wild animals may approach humans and appear friendly

How many animals in the herd will be affected?

This is a rare – but deadly – disease.



SYNDROMIC SURVEILLANCE

Will they die?

All animals with rabies will die from this disease. This type of disease is classified as: LOW morbidity, HIGH mortality.

Sick animals:

Cow, down
and depressed
due to rabies



Dead animals:

There are no specific lesions associated with rabies.

**If you see this disease, please call your local
Veterinary Officer.**



18. ORF

Other names

Contagious ecthyma; sore mouth; scabby mouth

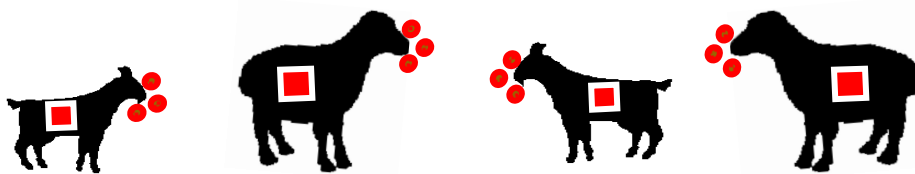
Who gets it?

All sheep and goats are susceptible. People can get the disease on their fingers from touching the lesions.



How do they get it?

Animals will get it from touching infected lesions on other animals. Also, the scabs around the mouth will have the infection.



How many animals in the herd will be affected?

Usually many animals will be affected. It will move through a herd or flock.

SYNDROMIC SURVEILLANCE

Will they die?

Occasionally the sores will be so bad that animals do not want to eat. Also if the sores are present on the teats, the mothers might not let the young animals nurse, and so the young animals may die. But in general, this disease is not a killing disease.

SICK ANIMALS (ORF)



Sores on the mouth and sometimes nose



...signs of Orf

Sores may
also form
inside the
mouth



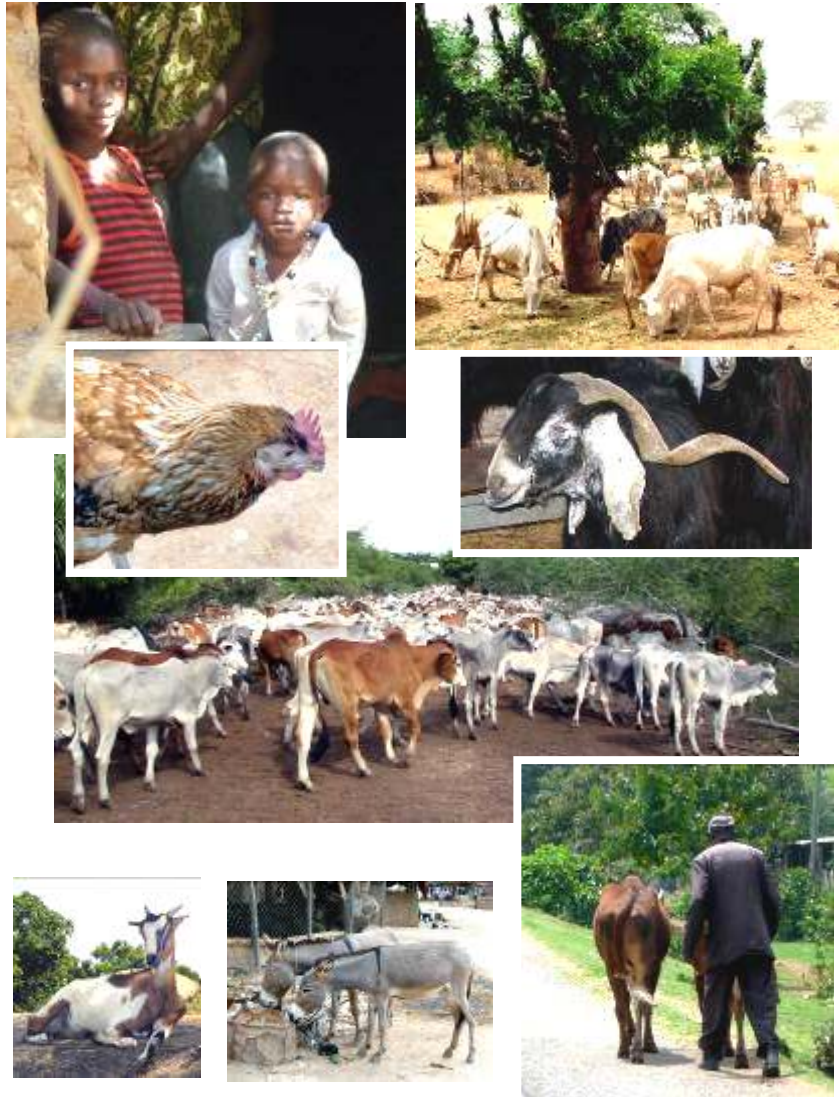
Sores
can
become
very
proliferated



**If you see this disease, please call your local
Veterinary Officer.**



SYNDROMIC SURVEILLANCE



SYNDROMIC SURVEILLANCE



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