



Case Definition of Livestock Diseases

2010



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Case Definition of Livestock Diseases

2010



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This manual is intended to assist animal health personnel in the Somali Regional State of Ethiopia to properly define disease events and avoid misclassification of cases. It contains case definition for 15 livestock diseases that are believed to have importance for food security, livestock trade and public health in Ethiopia in general and in the Somali Regional State in particular. Furthermore, it also includes protocol for livestock disease reporting in the Somali Regional State.

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Introduction

As per the Livestock Policy Discussion Paper No. 9 of the FAO, transboundary animal diseases (TADs) are defined as “those that are of significant economic, trade and/or food security importance for a considerable number of countries; which can easily spread to other countries and reach epidemic proportions, and where control/management, including exclusion, requires cooperation between several countries.” The same paper lists the following diseases as TADs: Contagious Bovine Pleuro-Pneumonia, Foot and Mouth Disease, *Peste des Petits Ruminant*, Rift Valley Fever, Avian Influenza and Newcastle Disease.

However, considering the significance of other diseases in the Somali Regional State, preparation of the case definition includes the following diseases as well: lumpy skin disease (LSD), sheep pox and goat pox (SGP), haemorrhagic septicemia (HS), anthrax, blackleg (BL), camel pox and ovine and caprine pasteurellosis.

To define a case of disease event and reach a confirmatory diagnosis, the standard case definition involves results of the following four stages of investigations:

- a. Clinical manifestations
- b. Post-mortem findings
- c. Epidemiological investigation
- d. Laboratory findings

The purpose of preparing the case definition under the context of this manual is to help animal health personnel (AHP) in the identification and prompt reporting of suspected disease occurrences in the field. In addition, it enables them to follow a systematic approach when disease outbreaks are investigated.

Occurrence of TAD is captured in the field through observation of clinical manifestations. The clinical case definition enables AHP to list down differential diagnosis of a suspected disease event based on clinical



manifestations and perhaps history of sick animals and herds. This would help increase the sensitivity of the surveillance system in the region.

Reports received from the community animal health workers (CAHWs) and kebele AHP, which are based on clinical case definitions will then trigger further investigation of the outbreak by woreda animal health personnel (woreda AHP) and the regional veterinary laboratory in order to reach a confirmatory diagnosis of the suspected disease outbreak by considering the other stages of case definition.

This manual presents case definition for 15 priority livestock diseases that have significance in terms of food security, public health and international trade. Where possible, the case definition is complemented with photos of clinical signs and postmortem lesions.

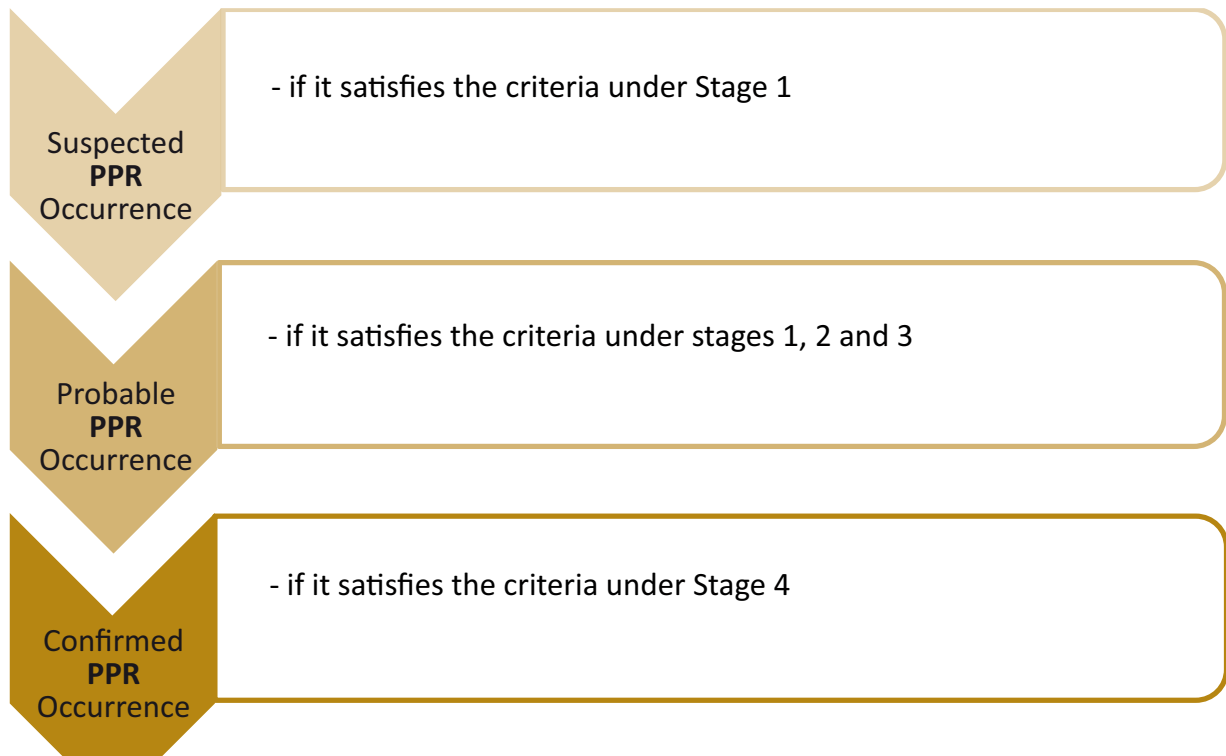
Peste des Petits Ruminants (PPR)

- Affects sheep and goats, also causes limited cases in camels
- It is caused by Morbilli virus in the family Paramyxoviridae

Stages	Case Definition
<p>Stage 1: Clinical Case Definition</p>  <p><i>Purulent eye and nose discharges in a goat (FAO)</i></p>  <p><i>Early mouth lesions showing areas of dead cells (FAO)</i></p>	<ul style="list-style-type: none"> • PPR should be suspected when a combination of the following signs are observed in sheep and goat flocks: <ul style="list-style-type: none"> - Acute diarrhea - Coughing - High morbidity (can be low in endemic areas) - High mortality (can be low in endemic areas) • Differential diagnosis of PPR include: <ul style="list-style-type: none"> - FMD, blue tongue & contagious ecthyma or orf (due to mouth lesion) - Pasteurellosis & CCPP (due to difficulty of breathing)
<p>Stage 2: Post-Mortem Case Definition</p>	<ul style="list-style-type: none"> • Necrotic lesions in the mouth and nose • Engorgement and blackening of folds of the large intestine (zebra striping)


Stages	Case Definition
Stage 3: Epidemiological Investigation	<ul style="list-style-type: none"> • Observation of morbidity rate up to 90% and a mortality rate of 50-80% in a susceptible population showing the above clinical signs should be suspected of having PPR. • Morbidity and mortality can be lower in endemic areas
Stage 4: Laboratory Case Definition	<ul style="list-style-type: none"> • Demonstration of PPR virus antigen using agar gel immunodiffusion test (AGID) or • Demonstration of PPR virus antibody using a competitive ELISA

Case Classification: A disease event reported by an AHP and/or a CAHW will be considered as:



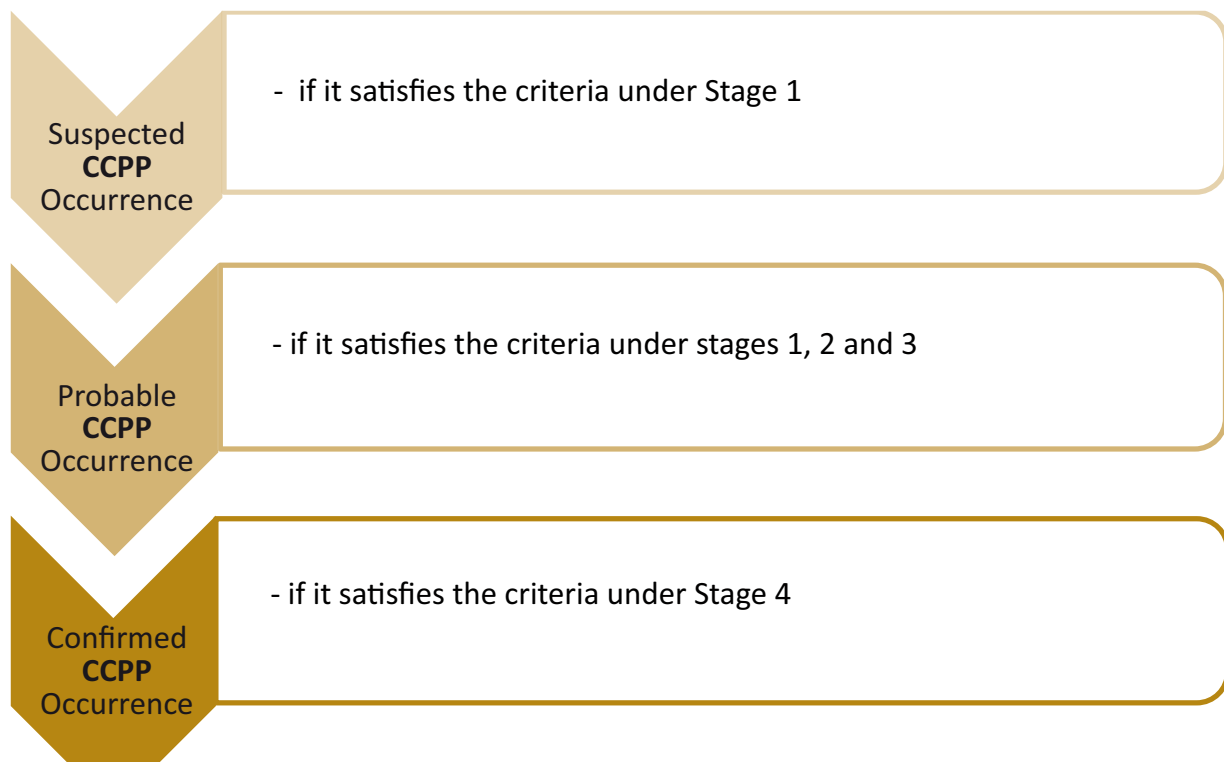
Contagious Caprine Pleuro-Pneumonia (CCPP)

- A Disease of goats caused by *Mycoplasma capricolum* subspecies *capripneumoniae* (MCCP)

Stages	Case Definition
<p>Stage 1: Clinical Case Definition</p>  <p><i>A distended neck of goat due to difficulty of breathing (Solomon Nega/FAO)</i></p>	<ul style="list-style-type: none"> • Laboured breathing (dyspnoea) • Nasal discharge • In the terminal stages, animals are unable to move – they stand with their front legs wide apart, the neck is stiff and extended, and sometimes saliva continuously drips from the mouth.
<p>Stage 2: Post-Mortem Case Definition</p>	<ul style="list-style-type: none"> • Fibrinous pleuropneumonia • Massive lung hepatisation • Large volume of straw-coloured pleural fluid • Enlarged and edematous mediastinal lymph nodes
<p>Stage 3: Epidemiological Case Definition</p>	<ul style="list-style-type: none"> • High morbidity (about 100%) and high mortality of about 70% affecting all ages and both sexes in a susceptible flock may lead to a suspicion of CCPP.



Stages	Case Definition
Stage 4: Laboratory Case Definition	<ul style="list-style-type: none"> • Isolation of the causative agent through culture of the causative organism from lung tissue samples and/or pleural fluid taken at post-mortem, or • Detection of CCPP-specific antibodies in the serum of suspected goat

Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:



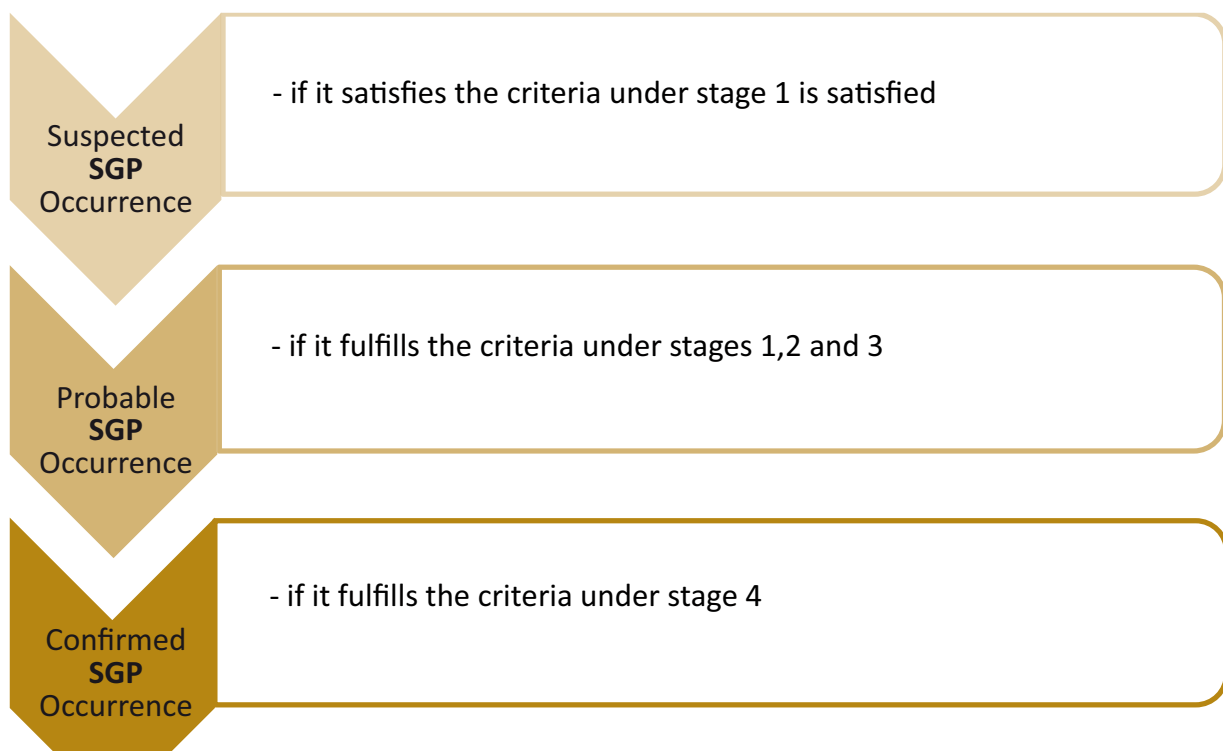
Sheep Pox and Goat Pox (SGP)

- A disease of sheep and goats caused by strains of capripox virus.

Stages	Case Definition
<p>Stage 1: Clinical Case Definition</p>  <p><i>Papules in the mouth of sheep (DEFRA)</i></p>  <p><i>Necrotic (gray) lesions in the skin of a goat (DEFRA)</i></p>	<ul style="list-style-type: none"> • Hard swellings (papules) may cover the body, or may be restricted to the groin, axilla and perineum. • Lachrymation and nasal discharge occur • Laboured and noisy breathing may occur • Enlargement of superficial lymph nodes, especially prescapular lymph nodes • Lesions develop on mucous membranes of the eyes, mouth and nose
<p>Stage 2: Post-Mortem Case Definition</p>	<ul style="list-style-type: none"> • Lung lesions: severe and extensive pox lesions • Enlargement, congestion, oedema and haemorrhages of mediastinal lymph nodes

Stages	Case Definition
Stage 3: Epidemiological Case Definition	<ul style="list-style-type: none"> Mortality rate may reach up to 50% in acute outbreaks; however, it is usually lower than 50% in endemic areas.
Stage 4: Laboratory Case Definition	<ul style="list-style-type: none"> Demonstration of Capripox virus specific antibody in the blood of a suspected animal using virus neutralisation test (VNT) or AGID

Case Classification: A disease event reported by an AHP and/or a CAHW will be considered as:



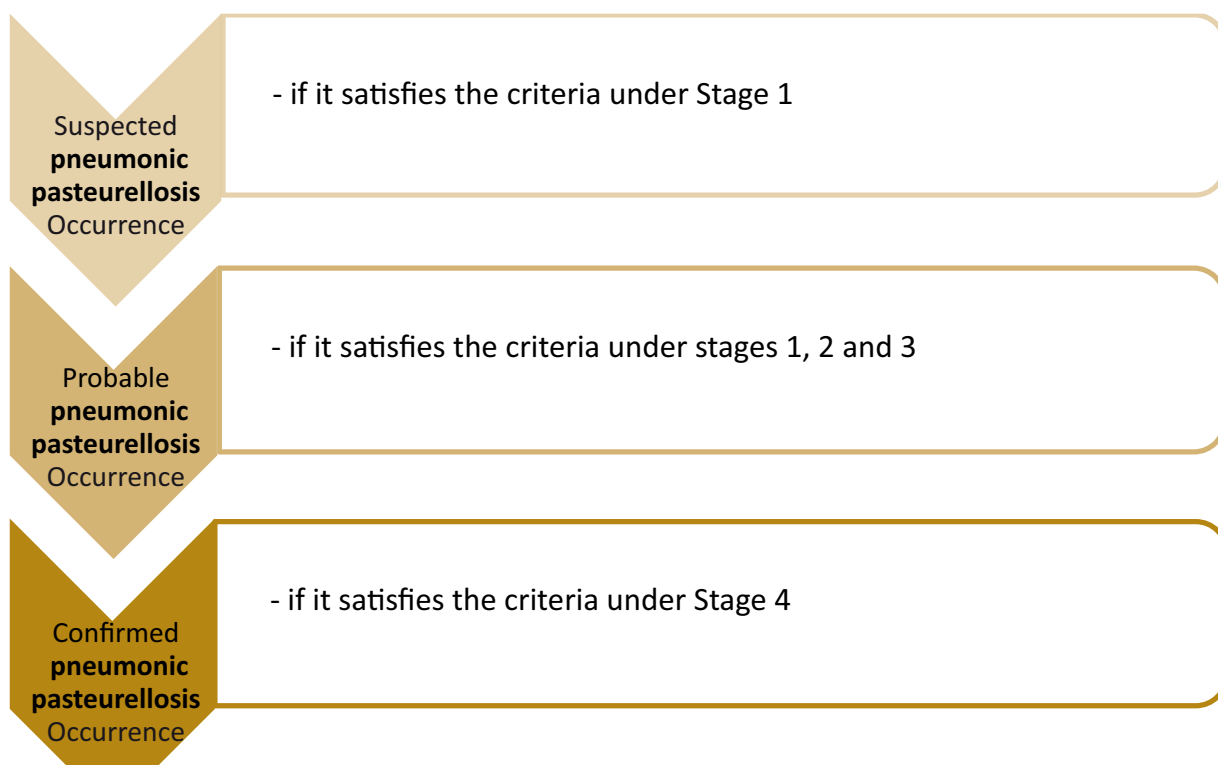
Pneumonic Pasteurellosis (Ovine & Caprine Pasteurellosis)

- *Affects sheep and goats; and is caused by Mannheimia (Pasteurella) haemolytica and Pasteurella trehalosi (formerly Phaemolytica biotype T) which are the species most often associated with the disease*

Stages	Case Definition
Stage 1: Clinical Case Definition	<ul style="list-style-type: none"> • Respiratory signs such as coughing and nasal discharge
Stage 2: Post-Mortem Case Definition	<ul style="list-style-type: none"> • Subcutaneous haemorrhage; epithelial necrosis of the tongue, pharynx, oesophagus, or occasionally the abomasum and intestine; enlargement of tonsils and retropharyngeal lymph nodes • The following lesions may appear in the lungs of affected animals: <ul style="list-style-type: none"> - The cranioventral lung lobes may appear red to purple and feel firm from consolidation. - The pleural cavity may contain variable amounts of straw-coloured fluid. - Yellow fibrin may cover the pleural surface of affected lung lobes from pleuritis. - Chronic cases may have extensive pleural adhesions and multiple abscesses of variable size.


Stages	Case Definition
Stage 3: Epidemiological Case Definition	<ul style="list-style-type: none"> • A trend suggestive of pneumonic pasteurellosis occurrence in sheep and goats, such as: <ul style="list-style-type: none"> - High mortality in sheep and goats - Occurrence of disease following stresses, including: concurrent infections; changes in climate, pasture, or feed; and other management factors.
Stage 4: Laboratory Case Definition	<ul style="list-style-type: none"> • Isolation of the causative agent using bacterial culture from tracheal swabs or washes or from lung lesions

Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:



Rift Valley Fever (RVF)*

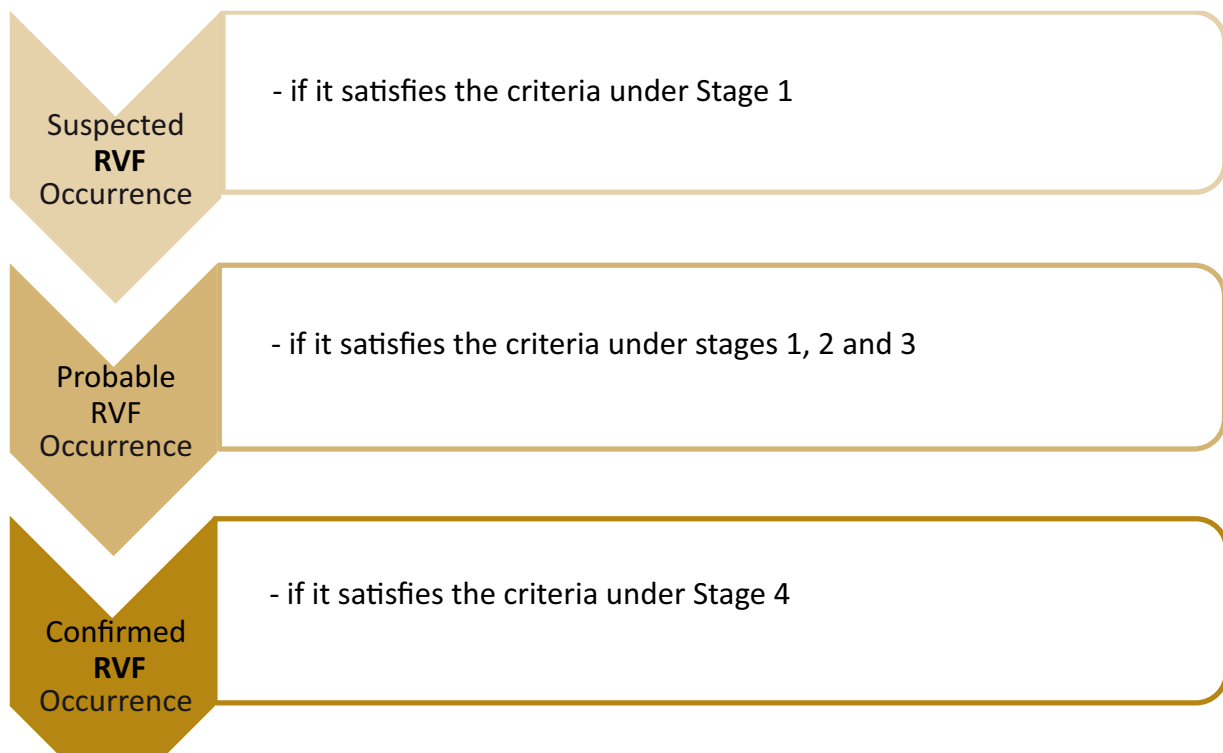
- *Affects humans and ruminants, but highly pathogenic for sheep and cattle; goats and camels are also important hosts.*
- *It is caused by a single sero type of a mosquito-borne bunya virus of the genus phlebo virus.*

Stages	Case Definition
<p data-bbox="197 719 671 752">Stage 1: Clinical Case Definition</p>  <p data-bbox="197 1420 464 1453"><i>Aborted fetus (FAO)</i></p>	<p data-bbox="868 719 1123 752">Sheep and Goats</p> <ul data-bbox="810 770 1390 1099" style="list-style-type: none"> • causes high mortality (young sheep and goats are severely affected, mortality reaching up to 95% in one-week old lambs) • affected animals may have bloody diarrhea and vomiting • abortion is a characteristic feature of RVF in pregnant animals <p data-bbox="868 1133 959 1167">Cattle</p> <ul data-bbox="810 1182 1347 1301" style="list-style-type: none"> • up to 30% of affected cattle may die (mortality is higher in calves) • abortion in pregnant cows <p data-bbox="868 1335 979 1368">Camels</p> <ul data-bbox="810 1406 1283 1576" style="list-style-type: none"> • infection in camels is mostly inapparent • low mortality rate • abortion in pregnant camels <p data-bbox="810 1615 1251 1648">Differential Diagnosis include:</p> <ul data-bbox="868 1666 1283 1845" style="list-style-type: none"> - Nairobi sheep disease - Ovine enzootic abortion - Bovine brucellosis - Leptospirosis

* Ethiopia is located within the Rift Valley ecosystem, but the disease has not been reported so far.

Stages	Case Definition
Stage 2: Post-Mortem Case Definition	<ul style="list-style-type: none"> • Haemorrhages are common in internal organs of affected sheep
Stage 3: Epidemiological Case Definition	<ul style="list-style-type: none"> • Abnormally high rainfall, widespread abortion and high mortality in very young animals of all species
Stage 4: Laboratory Case Definition	<ul style="list-style-type: none"> • Detection of antibodies against RVF virus using ELISA (IgM-capture ELISA) demonstrates recent infection as early as 6-7 days post-infection.

Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:



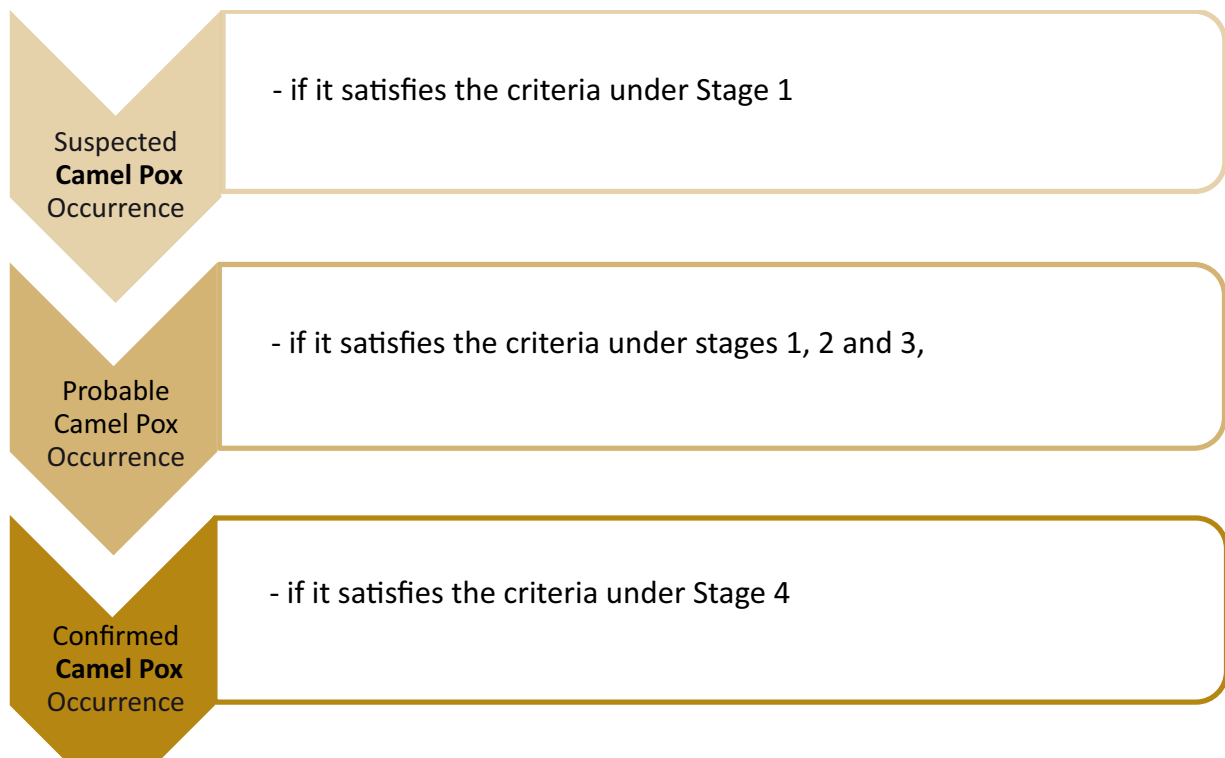
Camel Pox

- Affects camels and it is caused by the camel pox virus of family poxviridae subfamily chordopoxvirinae and genus orthopox virus.

Stages	Case Definition
Stage 1: Clinical Case Definition	<ul style="list-style-type: none"> • Enlarged lymph nodes • Papules/vesicles/pustules with crusts develop on head, eyelids, nostrils, neck, limbs, genitalia, mammary glands, and perineum • Affected animals may show lacrimation, muco-purulent nasal discharge. • Abortion may occur in pregnant camels. • Diarrhea may be observed in sick animals.
Stage 2: Post-Mortem Case Definition	<ul style="list-style-type: none"> • Pox lesions may be found on the mucous membranes of the mouth, respiratory and digestive tracts.
Stage 3: Epidemiological Case Definition	<ul style="list-style-type: none"> • A trend suggestive of camel pox occurrence such as: <ul style="list-style-type: none"> - Greater mortality rate in young compared to adult animals - Higher incidence in males than in females - More common during the wet season due to involvement of arthropod vectors


Stages	Case Definition
Stage 4: Laboratory Case Definition	<ul style="list-style-type: none"> • Detection of camel pox specific antibodies in the serum of suspected case using either Ab-capturing ELISA, virus neutralisation, agar-gel precipitation or complement fixation tests, or • Demonstration of the camel pox antigen in scabs and pox lesions in tissues by immunohistochemistry

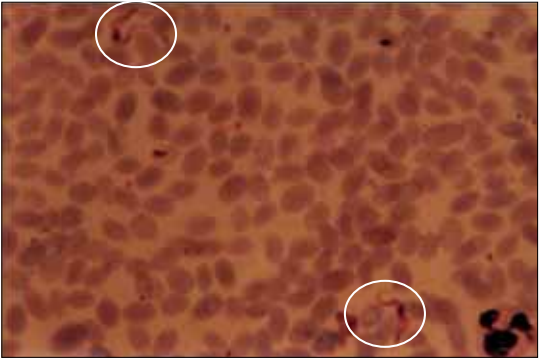
Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:



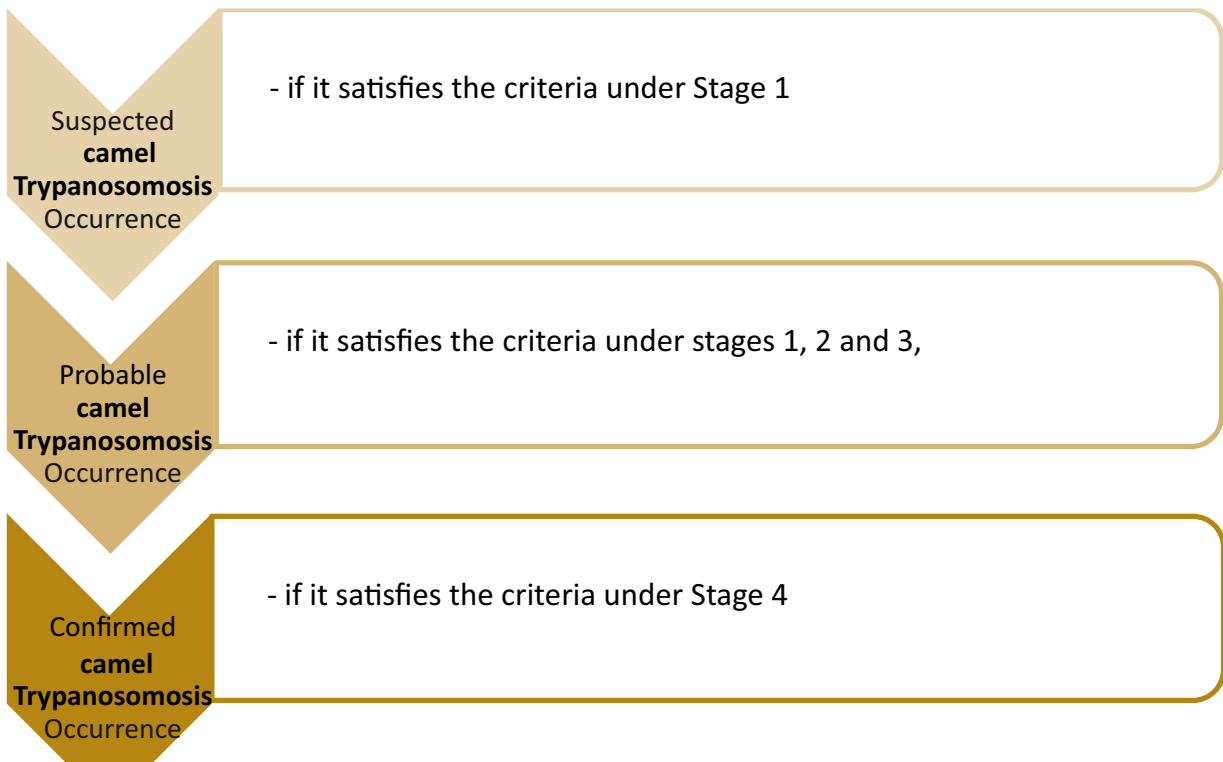
Camel Trypanosomosis (“Surra”)

- Affects camels and is caused by *Trypanosoma evansi*

Stages	Case Definition
<p>Stage 1: Clinical Case Definition</p>  <p><i>Surra in camel (Getachew Abebe/FAO)</i></p>	<ul style="list-style-type: none"> • The following are indicative of trypanosomosis in camels: <ul style="list-style-type: none"> - Recurrent episodes of fever - Progressive weight loss, anemia and icterus - Edematous swellings of the lower parts of the body: legs, briskets and abdomen - Pregnant camels may abort.
<p>Stage 2: Post-Mortem Case Definition</p>	<ul style="list-style-type: none"> • Post-mortem lesions are non-specific and may include: <ul style="list-style-type: none"> - Emaciation of the carcass - Petechial haemorrhages on some internal organs - Hydrothorax and ascites - Enlarged lymph nodes and spleen
<p>Stage 3: Epidemiological Case Definition</p>	<ul style="list-style-type: none"> • Trypanosomosis in camels tends to occur during the rainy season when flies become abundant


Stages	Case Definition
<p>Stage 4: Laboratory Case Definition</p>  <p><i>Trypanosoma evansi</i> in camel blood film (Getachew Abebe/FAO)</p>	<ul style="list-style-type: none"> • Detection of Trypanosome parasite using wet blood films, stained thick smear or stained thin smear in blood or lymph of suspected camel.

Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:

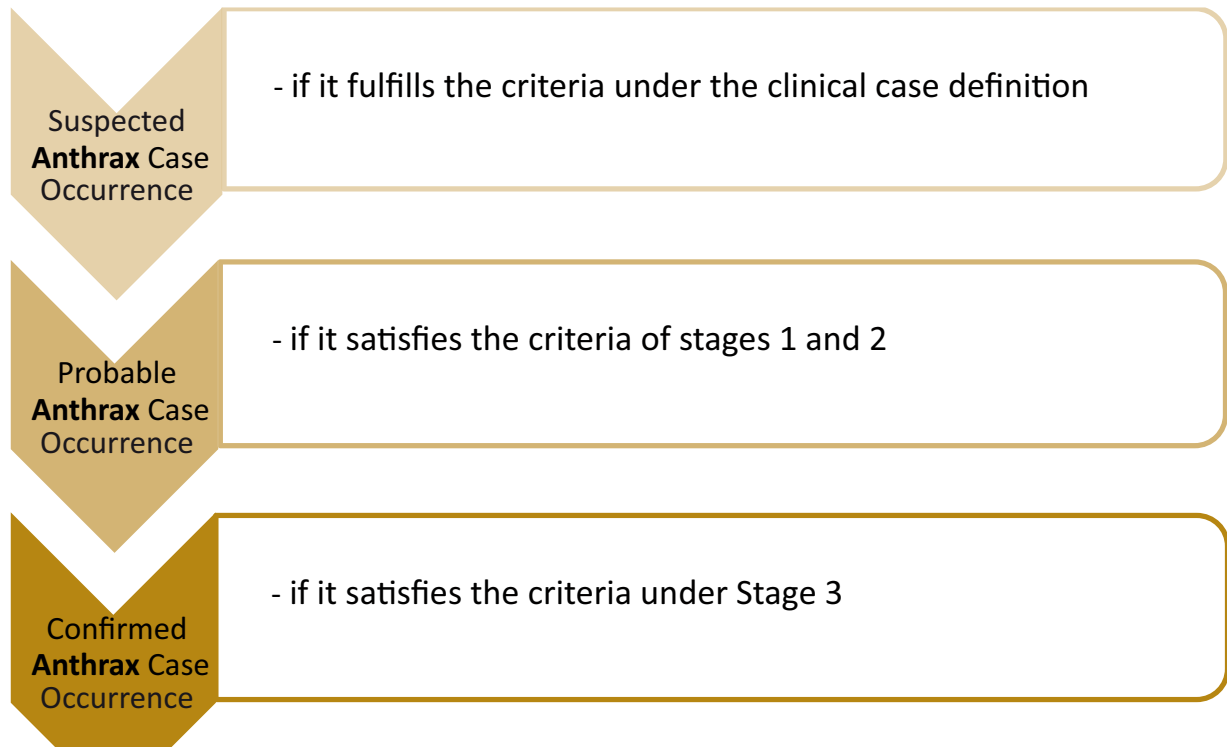


Anthrax

- Affect cattle, sheep, goats and camels
- The etiological agent is the spore - forming, Gram-positive rod-shaped *Bacillus anthracis*.


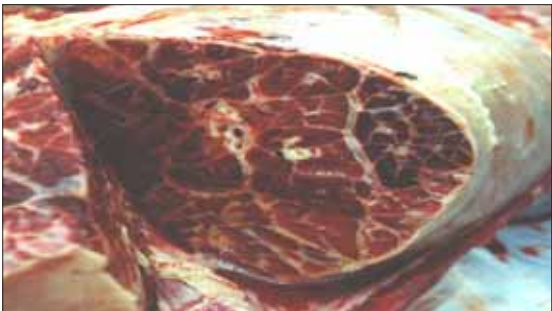
Stages	Case Definition
<p>Stage 1: Clinical Case Definition</p> 	<ul style="list-style-type: none"> • Anthrax should be suspected and reported by an AHP and/ or a CAHW either to the woreda veterinary office or kebele veterinary personnel if s/he observes the following: <ul style="list-style-type: none"> - Sudden death of an animal - Un-clotted blood-stained discharges through the mouth, nose and anus • Differential diagnosis includes: <ul style="list-style-type: none"> ▪ Any sudden death should be considered as anthrax
<p>Stage 2: Post-Mortem Case Definition</p>	<ul style="list-style-type: none"> • DO NOT OPEN a suspected anthrax case • If accidentally opened, dark, unclotted blood is characteristic to anthrax
<p>Stage 3: Laboratory Tests</p>	<ul style="list-style-type: none"> • Demonstration of Gram-positive rod-shaped <i>Bacillus anthracis</i> from infected blood or tissue, or • Growth of the bacteria on blood agar plate

Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:



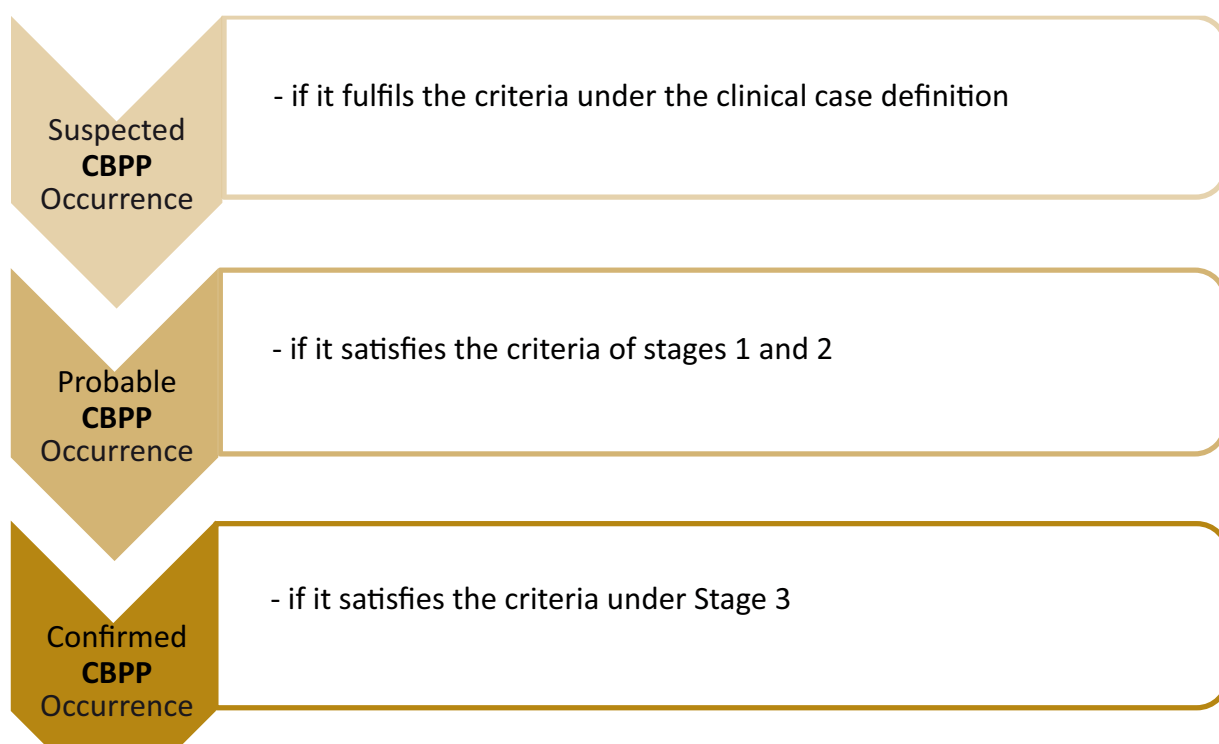
Contagious Bovine Pleuro-Pneumonia (CBPP)

- A disease of cattle caused by *Mycoplasma mycoides subspecies mycoides* SC (MmmSC; sc=small colonies)

Stages	Case Definition
<p>Stage 1: Clinical Case Definition</p>  <p><i>Extended neck and spreading of forelegs (FAO)</i></p>	<ul style="list-style-type: none"> • CBPP has to be suspected if a combination of the following signs are observed in sick animals: <ul style="list-style-type: none"> - Breathing and coughing is painful in affected animals - Animals “grunt” when exhaling (difficulty of breathing) - Affected animals stand with head and neck extended and forelegs spread apart - Affected animals stand with dilated nostrils and open mouth panting for air - Some animals develop swelling of the throat and the dewlap - Calves up to six months of age develop lameness due to painful limb joint - Mortality can reach up to 50%
<p>Stage 2: Post-Mortem Case Definition</p>  <p><i>Marbling appearance of CBPP affected lung (FAO,1)</i></p>	<ul style="list-style-type: none"> • The cut surface of the lung often shows a marbled appearance (with areas of different color: dark red, red and pale pink separated by a network of pale bands). • Adhesions between lung lobes and between lungs and the chest wall are common in the chronic form. • A capsule of fibrous connective tissue known as sequestrum surrounds areas of dead lung tissue (the size of the sequestrum varies from 2-25cm in diameter).


Stages	Case Definition
Stage 3: Laboratory Case Definition	<ul style="list-style-type: none"> • Detection of antigen of the causative agent <i>Mycoplasma mycoides</i> subspecies <i>Mycoides</i> Small Colony variant (<i>MmmSC</i>) using AGID, or • Detection of antibodies against <i>MmmSC</i> using competitive ELISA

Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:



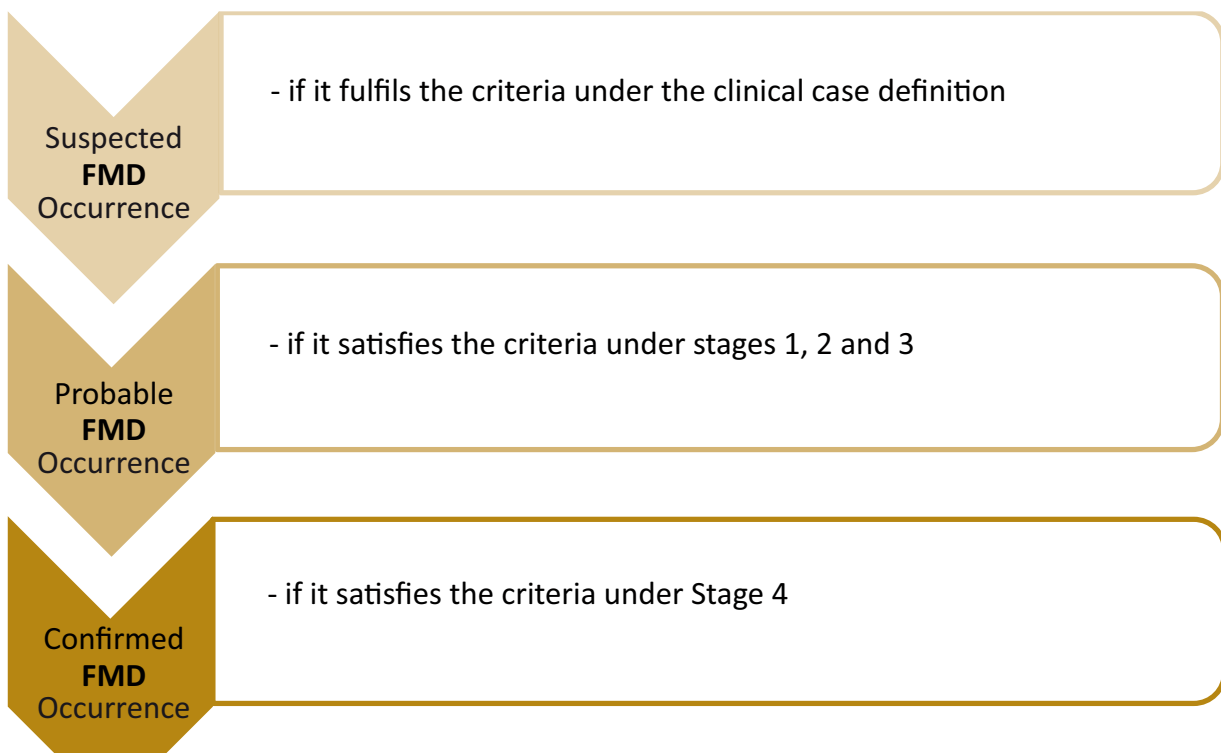
Foot and Mouth Disease (FMD)

- *Affects cattle, sheep, goats, camels and pigs. Although there are seven serotypes of FMD virus world wide, the serotypes identified in Ethiopia include A, C, O and SAT 2.*

Stages	Case Definition
<p data-bbox="197 651 663 685">Stage 1 Clinical Case Definition</p>  <p data-bbox="197 1585 724 1619"><i>Lesions on the foot and mouth (DEFRA)</i></p>	<p data-bbox="805 651 1310 763">FMD should be suspected when a combination of the following 2- 3 clinical signs are observed:</p> <ul data-bbox="805 779 1366 1205" style="list-style-type: none"> • Lameness in a number of animals • Salivation (drooling) • Smacking of the lips, grinding of the teeth • Vesicles/lesions in the mouth (on the tongue, gum, cheeks, lips) • Unwillingness to move or stand • In lactating animals, significant drop in milk production <p data-bbox="911 1294 1350 1328">Differential diagnosis include:</p> <ul data-bbox="1046 1346 1286 1473" style="list-style-type: none"> ▪ Rinderpest ▪ Blue tongue ▪ PPR
<p data-bbox="197 1664 767 1697">Stage 2: Post-Mortem Case Definition</p>	<ul data-bbox="805 1664 1390 1966" style="list-style-type: none"> • Vesicles or blisters on the tongue, gums, cheeks, lips, nostrils, muzzle, coronary bands, teats, udder, or • Erosions on rumen pillars • Necrosis of the myocardium in young animals of all species (“tiger heart”)


Stages	Case Definition
Stage 3: Epidemiological Investigation	<ul style="list-style-type: none"> • Epidemiological trend suggestive of FMD occurrence such as: <ul style="list-style-type: none"> - High morbidity and low mortality in cattle.
Stage 4: Laboratory Case Definition	<ul style="list-style-type: none"> • Demonstration of FMD virus antigen using an indirect ELISA, or • Demonstration of FMD non-structural antibodies using ELISA.

Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:



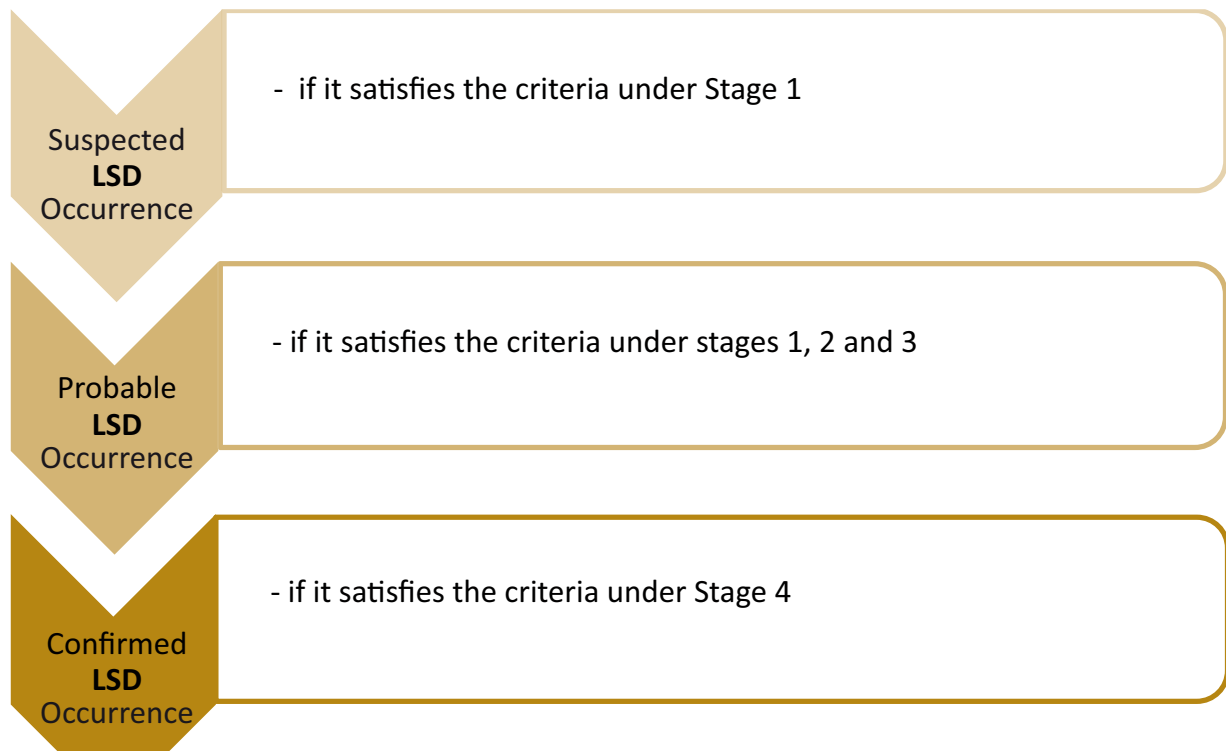
Lumpy Skin Disease (LSD)

- Affects cattle and is caused by the LSD virus of family Poxviridae, genus Capripox virus

Stages	Case Definition
<p>Stage 1: Clinical Case Definition</p>  <p><i>LSD nodules/Borena, Ethiopia (Getachew Abebe/FAO)</i></p>	<ul style="list-style-type: none"> • Appearance of painful cutaneous nodules in the body, especially the head and neck, perineum, genitalia and udder, and limbs. • Lesions also develop on the muzzle, in the nostrils, and in the mouth. • All the superficial lymph nodes are enlarged. • Mucopurulent nasal discharges, persistent dribbling of saliva, coughing, and often distressed respiration may result. • Reduced milk production in lactating cows.
<p>Stage 2: Post-Mortem Case Definition</p>	<ul style="list-style-type: none"> • Nodules may be found in the subcutaneous tissue, muscle fascia and in muscles. • Nodules may be scattered through the nasopharynx, trachea, bronchi, lungs, rumen, abomasum, renal cortex, testicles and uterus.
<p>Stage 3: Epidemiological Case Definition</p>	<ul style="list-style-type: none"> • A trend suggestive of LSD occurrence such as: <ul style="list-style-type: none"> - Morbidity rate varying between 5 to 45% - Mortality rate reaching up to 10%.

Stages	Case Definition
Stage 4: Laboratory Case Definition	<ul style="list-style-type: none"> • Demonstration of LSD virus (Capripox) specific antibody in the blood of a suspected animal using virus neutralisation test (VNT) or AGID.

Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:



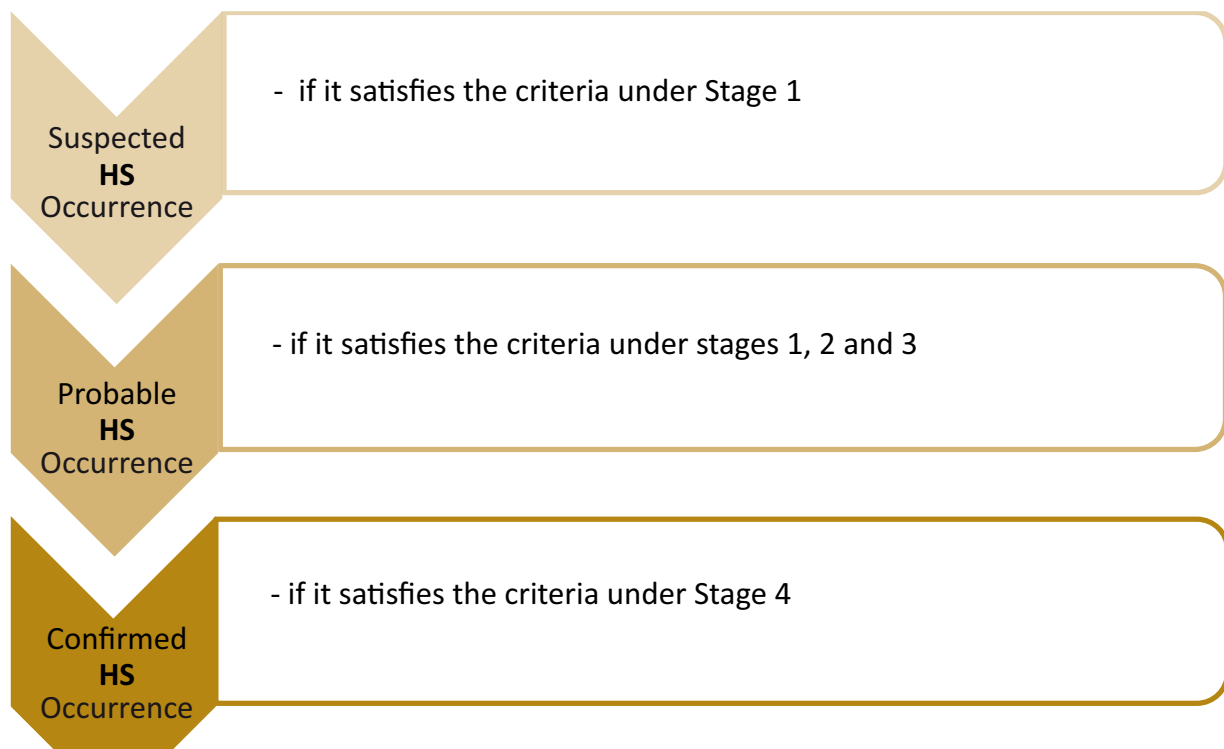
Haemorrhagic Septicaemia (HS)

Affects cattle; caused by Pasteurella multocida, serotypes E:2 (African) and B:2 (Asian)

Stages	Case Definition
Stage 1: Clinical Case Definition	<ul style="list-style-type: none"> • Edematous swellings on the head, neck and brisket. • Mortality is high in older calves and young adults. • Case fatality rate can reach up to 100% (only a few affected animals recover). • Salivation and nasal discharge.
Stage 2: Post-Mortem Case Definition	<ul style="list-style-type: none"> • Widespread haemorrhages, oedema, and hyperemia. • Edema consists of a coagulated serofibrinous mass with straw-coloured or blood-stained fluid. • Swelling of the head, neck, and brisket occurs in nearly all cases.
Stage 3: Epidemiological Case Definition	<ul style="list-style-type: none"> • Trend suggestive of HS occurrence: <ul style="list-style-type: none"> - The season of the year (wet season), rapid course (acute), and high herd incidences (high morbidity and mortality), with fever and edematous swellings - Occurrence of outbreaks as a result of stress factors, such as high humidity and high temperature.

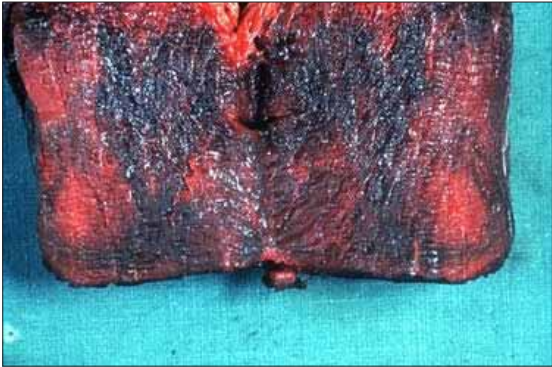
Stages	Case Definition
Stage 4: Laboratory Case Definition	<ul style="list-style-type: none"> • Identification of the causative agent, <i>Pasteurella multocida</i> (a Gram-negative bacilli) in the blood of affected animal using a Gram, Leishman's or methylene blue stains.

Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:



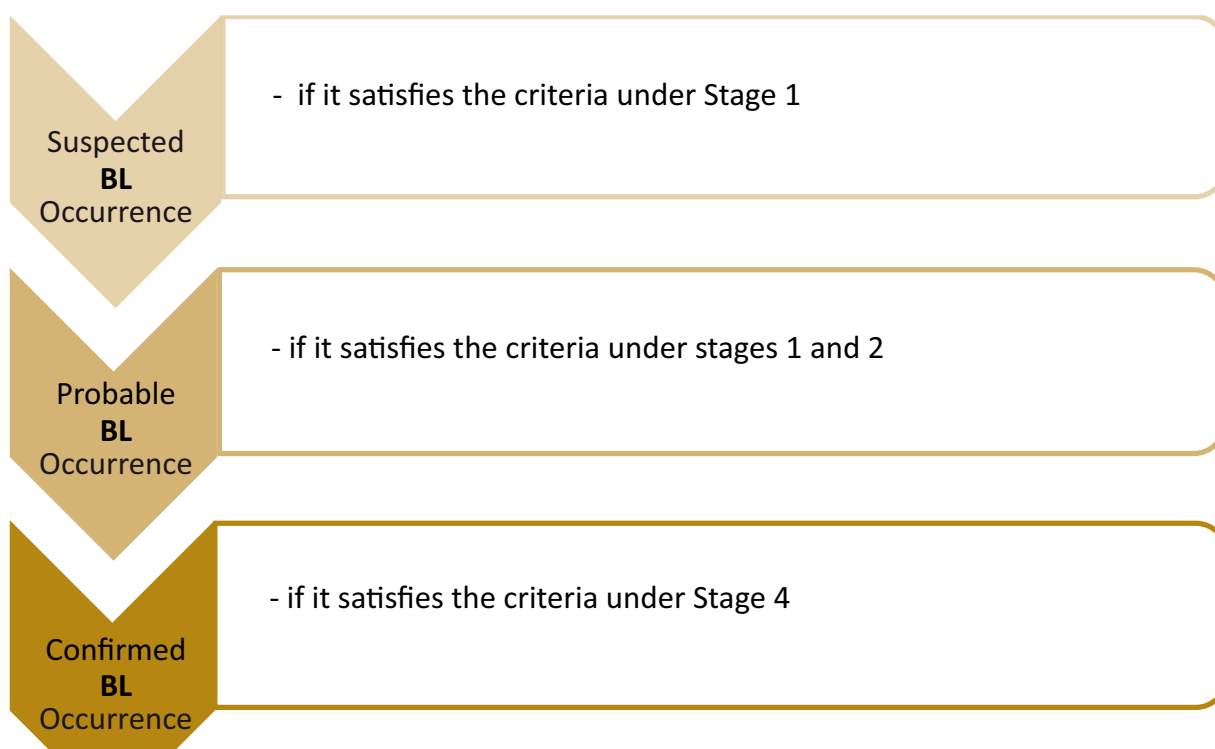
Blackleg/Clostridial Myositis (BL)

- Affects cattle and the etiological agent is *Clostridium chauvoei*.

Stages	Case Definition
<p>Stage 1: Clinical Case Definition</p>	<ul style="list-style-type: none"> • Lameness. • Hot and painful swelling commonly in the hip, shoulder, chest, back and neck. • The affected muscle is dark red to black and dry and spongy. • Touching of the swelling gives gaseous feeling.
<p>Stage 2: Post-Mortem Case Definition</p>  <p><i>Blackleg, muscle of a cow. Note the characteristic black colour and the dry appearance of the necrotic muscle, with tiny gas bubbles just visible in the tissue (Merck Veterinary Manual).</i></p>	<ul style="list-style-type: none"> • In a dead cow, there will be a characteristic black colour and dry appearance of the affected muscle, with tiny gas bubbles just visible in the tissue.


Stages	Case Definition
Stage 3: Epidemiological Case Definition	<ul style="list-style-type: none"> trends suggestive of BL occurrence: <ul style="list-style-type: none"> Young animals up to 24 months old are most susceptible. Sudden death of affected animals.
Stage 4: Laboratory Case Definition	<ul style="list-style-type: none"> Laboratory demonstration of <i>Clostridium chauvoei</i> in affected muscle using fluorescent antibody test.

Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:

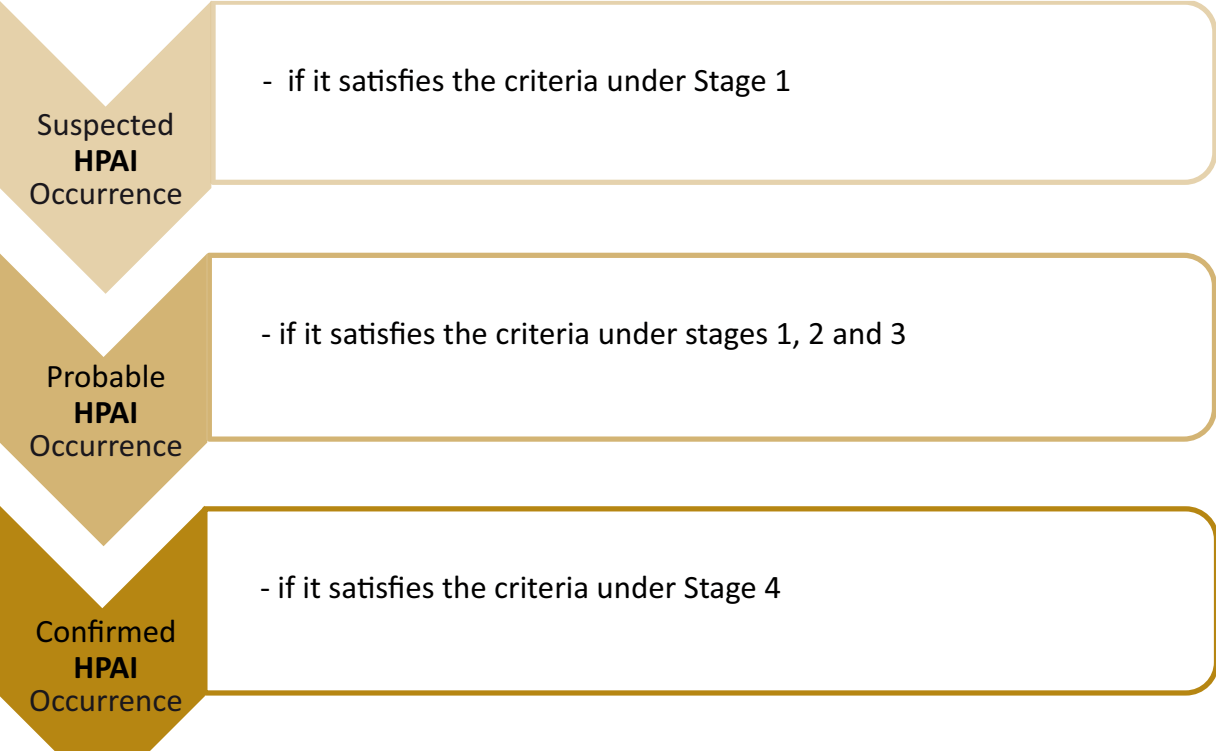


Highly Pathogenic Avian Influenza (HPAI)

- Affects poultry, non-domestic birds as well as humans. It is caused by influenza virus A of family orthomyxoviridae.



Stages	Case Definition
<p>Stage 1: Clinical Case Definition</p>  <p><i>Congestion and blood spots on the skin of hocks and shanks (DEFRA)</i></p>	<ul style="list-style-type: none"> • Sudden death with very high morbidity and mortality in poultry (chickens and turkeys). • Clinical cases show severe respiratory signs, watery diarrhea, nervous signs and drastic drop in egg production. • In non-poultry birds, usually none or mild respiratory signs.
<p>Stage 2: Post-Mortem Case Definition</p>	<ul style="list-style-type: none"> • Congestion and necrosis in multiple organs, especially pancreas, liver, spleen, kidneys, focal and diffuse haemorrhages, enteritis
<p>Stage 3: Epidemiological Case Definition</p>	<ul style="list-style-type: none"> • A high morbidity and mortality in domestic birds (sometimes reaching 100%) should lead to suspicion of HPAI.
<p>Stage 4: Laboratory Case Definition</p>	<ul style="list-style-type: none"> • Detection of AI specific antibodies in the sera of suspected bird using HI. • Virus isolation on tissue samples (trachea, lung, intestine, CNS) and cloacal and tracheal swabs using PCR.

Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:



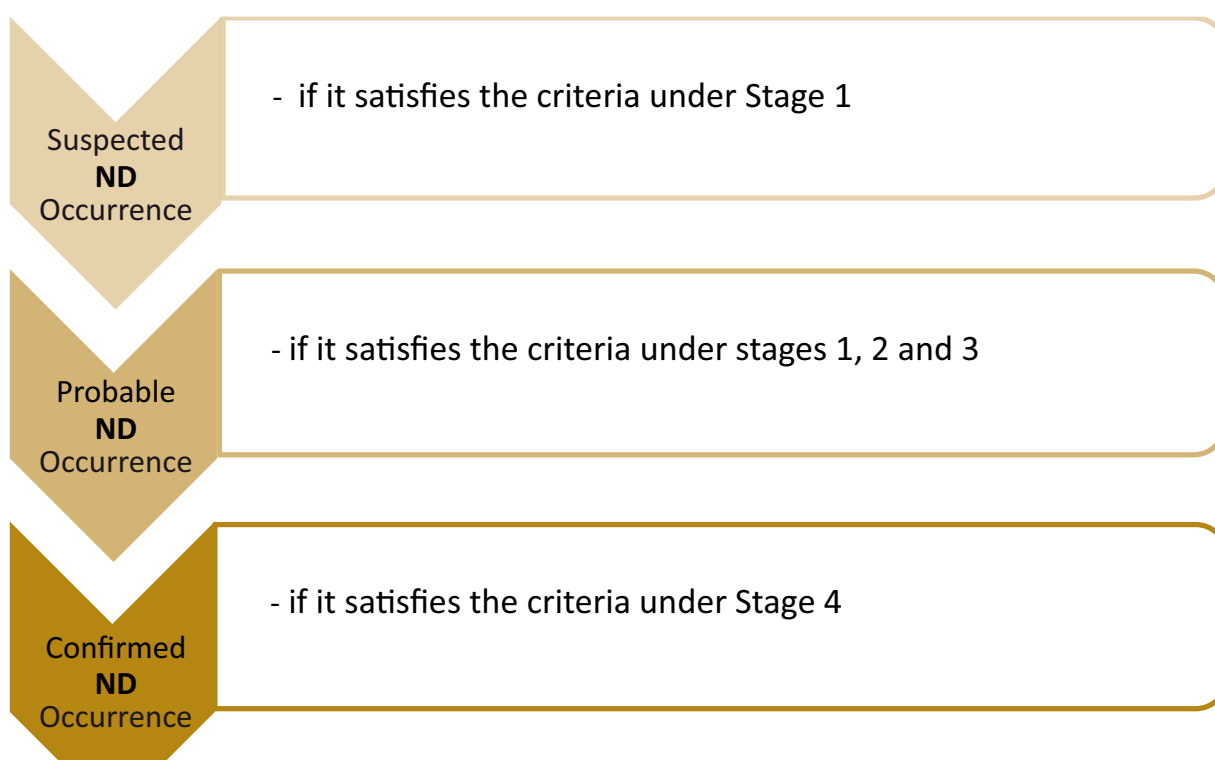
Newcastle Disease (ND)

- Affects both domestic and wild birds - chickens being the most susceptible. The etiological agent belongs to the family paramyxoviridae in the genus Avula virus.

Stages	Case Definition
<p>Stage 1: Clinical Case Definition</p>  <p><i>Bird with twisted neck (DEFRA)</i></p>	<ul style="list-style-type: none"> • Combination of the following clinical signs are seen in ND: <ul style="list-style-type: none"> - Low to high morbidity and mortality - Nervous signs such as loss of balance, circling, head tremors, wing and leg paralysis - Respiratory signs such as increased respiratory rate and coughing. - diarrhea. - Sudden drop in egg production accompanied by production of abnormal eggs (misshapen, soft or missing shells) • It is a differential diagnosis of HPAI
<p>Stage 2: Post-Mortem Case Definition</p>  <p><i>Blood spots in the mucosa of the proventriculus (DEFRA)</i></p>	<p>The following may be seen on ND infected birds:</p> <ul style="list-style-type: none"> • Edema of the neck and thorax, • Haemorrhages in the trachea, proventriculus, gizzard, Peyer's patches, caecal tonsils.

Stages	Case Definition
Stage 3: Epidemiological Case Definition	<ul style="list-style-type: none"> • A moderate to high morbidity and mortality of birds involving respiratory and nervous signs including diarrhea should lead to suspicion of ND.
Stage 4: Laboratory Case Definition	<ul style="list-style-type: none"> • Detection of ND specific antibodies in the sera of suspected bird using HI. • Virus isolation from the following tissues: <ul style="list-style-type: none"> - oro-nasal swabs, as well as samples from lung, kidneys, intestine, spleen, brain, liver and heart tissues from a dead bird, or - both tracheal and cloacal swabs from a live bird

Case Classification: A disease event reported by an AHP and/or a CAHW is considered as:



Protocol for Reporting the Occurrence of Livestock Diseases in the Somali Regional State

- Whenever an animal health personnel (AHP) or a community animal health worker (CAHW) learns about occurrence of animal disease in her/his locality, s/he will gather and transmit information to the woreda AHP.
- The information is transmitted by verbal description (for CAHWs) or written report of the main features of the event by detailing clinical manifestations and other relevant information.
- The woreda AHP may communicate and discuss the case with an NGO AHP to organize an investigation of the reported occurrence when it is necessary.
- Simultaneously, the woreda AHP will transmit the information to the Regional Veterinary Diagnostic Laboratory (RVDL) and Regional Livestock, Crop and Rural Development Bureau (LCRDB) and call for further investigation (if it is deemed necessary).
- Response campaign (control vaccination) will be organised by LCRDB and Woreda Veterinary Office (WVO) after the case has been investigated with support from the RVDL.
- The reporting CAHW and other CAHWs in the affected woreda/s will take part in the response campaign on a contractual basis.
- Based on the investigation carried out by the woreda and/or NGO AHP and RVDL, disease reporting formats will be filled and sent simultaneously to LCRDB, RVDL and Federal Epidemiology Unit using the national disease reporting format.

Glossary: Scientific and Equivalent Somali Names for Priority Livestock Diseases in Somali Regional State

Scientific Names	Somali Names
Peste des Petits Ruminants (PPR)	Susun, Hulumbe, Kalore, Soon-soon, Keliga qeshey, Kaligii cune, Dhifhar, Kalideune, Qalwodumuye, Shuben, Dabaran, Dif dere, Marchakas
Sheep and Goat Pox (SGP)	Furuq, Geed Caanood, Sogudud, Furuq ke-adiga, Cashi, Baga
Pneumonic Pasteurellosis	Boog, Cunabarar, Guuh, Rinweyiney, Qufa, Huda oliye, Hargabka
Contagious Caprine Pleuro-Pneumonia (CCPP)	Sembobka Adiga, Gubulo Adiga, Somboob, Gubulo, Senbab ke-riyaha, Sombesa rae, Sombabka areka
Camel Pox	Hergeb, Ajero, Furuqa gel
Camel Trypanosomosis	Dukan, Melig, Gendi, Qanin
Foot and Mouth Disease (FMD)	Cabeeb, Haleb, Raf-dila, Burunbur, Oyale,
Contagious Bovine Pleuro-Pneumonia (CBPP)	Gubulo looda', Sembob, Sembobka Looda', Senbab Ke-looda, Sombesa Ioni
Lumpy Skin Disease (LSD)	Roor, Barber ror, Geed Anod, Baga Ioni, Udurka meqarka
Haemorrhagic Septicaemia (HS)	Cunobarar/Medhabarar/Boog/Dhure/Cuno-qabad, Qufa, Huda
Anthrax	Kud, Haran, Bahtin (camel), Lahugal, Chita,
Blackleg	Itayse, Garab gooye, Dhigis, Harka
Highly Pathogenic Avian Influenza (HPAI)	Hargab ka shimbiraha
Newcastle Disease (ND)	



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