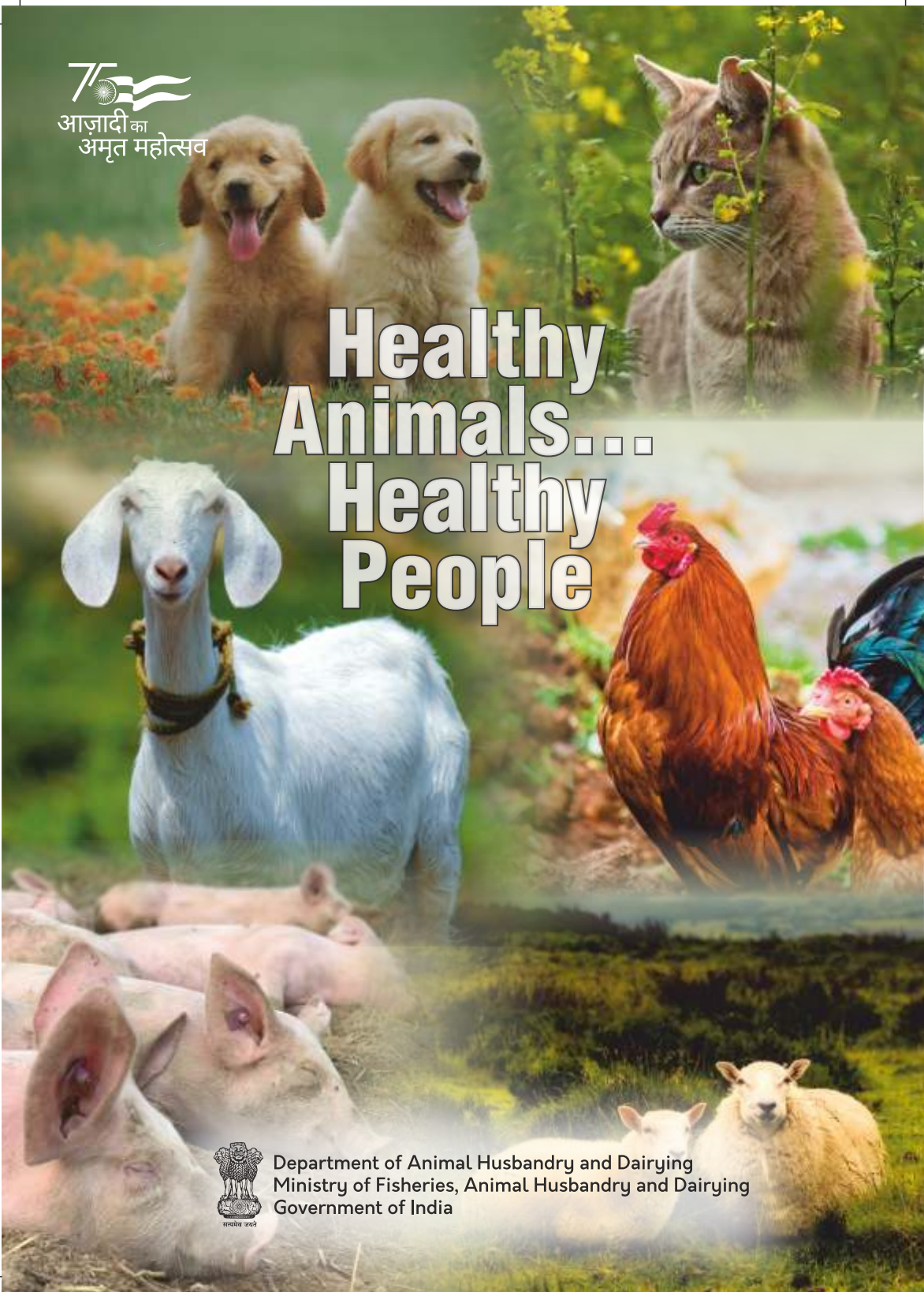


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आज़ादी का
अमृत महोत्सव

Healthy Animals... Healthy People



Department of Animal Husbandry and Dairying
Ministry of Fisheries, Animal Husbandry and Dairying
Government of India



Healthy Animals... Healthy People

**Information booklet to identify risk
factors associated with disease
transmission from animals to humans
and their preventive strategies**



Department of Animal Husbandry and Dairying
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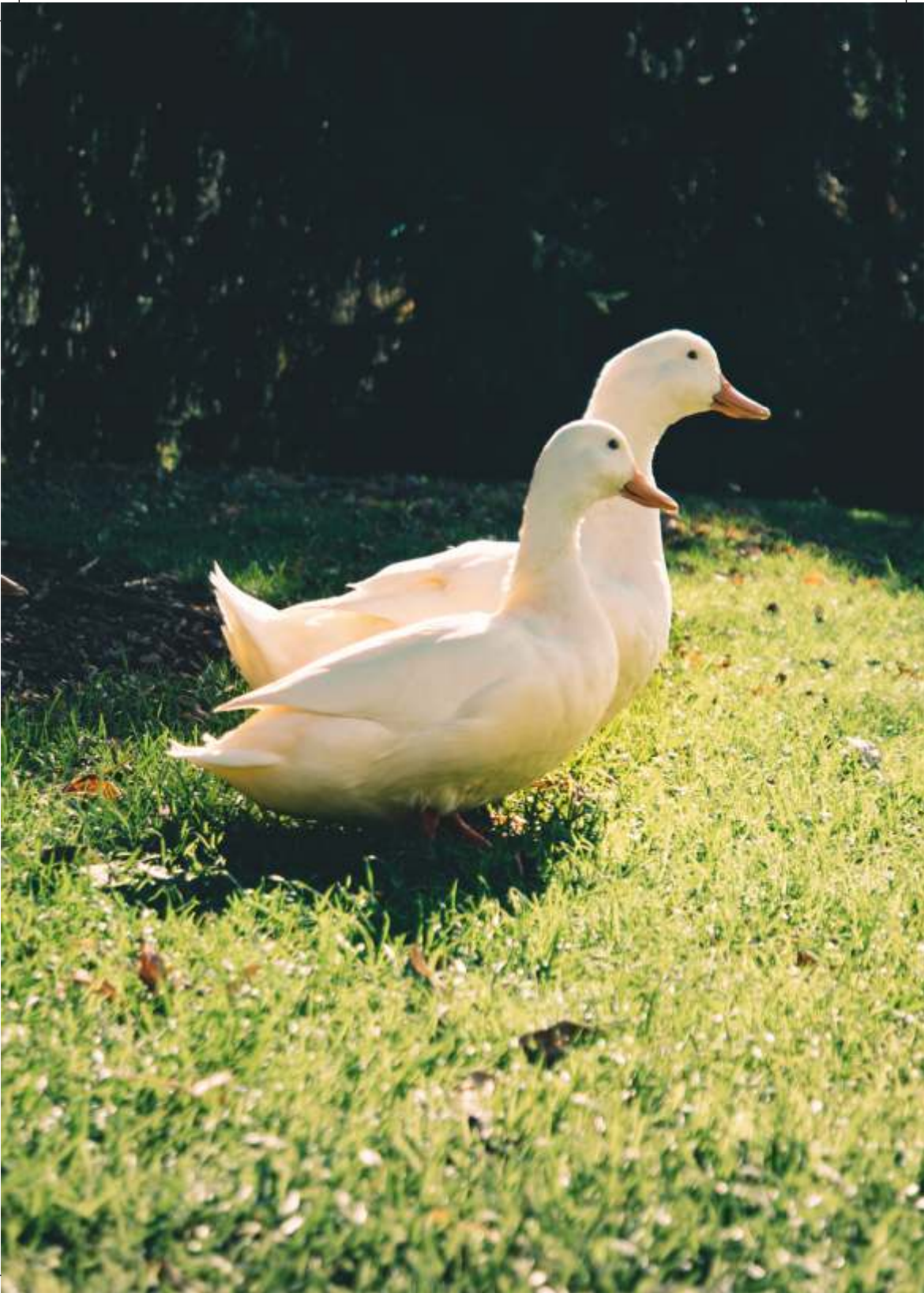




Start learning now...

- About 60% of human infections originate from animals (i.e. are zoonotic in nature).
- More than 70% of all new and emerging infectious diseases affecting people are zoonotic.
- The rapid intensification of livestock production, including poultry production, presents an increasing risk area for zoonotic disease emergence.
- One Health approaches are needed to reduce the risk of zoonotic disease.

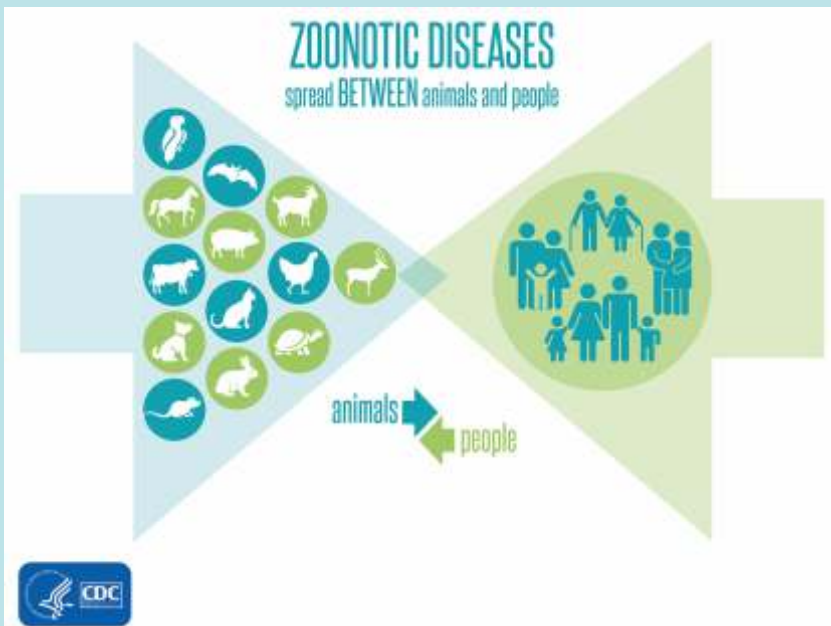
(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7563794/>)



ONE HEALTH

One Health is an approach that recognizes that the health of people is closely connected to the health of animals and our shared environment. One Health is not new, but it has become more important in recent years. This is because many factors have changed interactions between people, animals, plants, and our environment.

These changes have led to the spread of existing or known (endemic) and new or emerging zoonotic diseases, which are diseases that can spread between animals and people. Every year, millions of people and animals around the world are affected by zoonotic diseases.





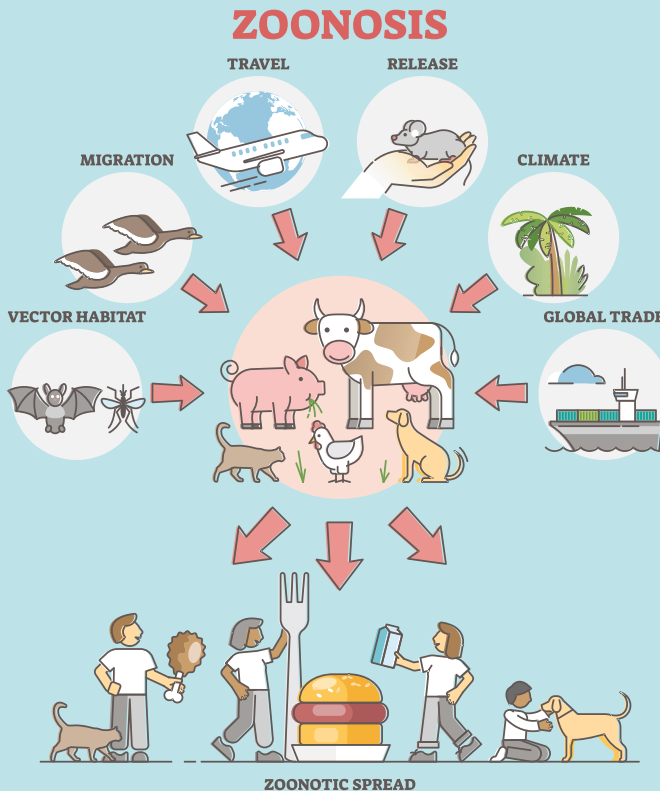
Zoonotic Diseases

Animals provide many benefits to people. Many people interact with animals in their daily lives, both at home and away from home. Animals provide food, fiber, livelihoods, travel, sport, companionship, and education.

We might come into contact with animals in either urban or rural settings, during travel, while visiting animal exhibits, or while enjoying outdoor activities.

However, animals can sometimes carry harmful germs that can spread to people and cause illness – these are known as zoonotic diseases or zoonoses.

Zoonotic diseases are caused by harmful germs like viruses, bacterial, parasites, and fungi. These germs can cause many different types of illnesses in people and animals, ranging from mild to serious illness and even death. Animals can sometimes appear healthy even when they are carrying germs that can make people sick, depending on the zoonotic disease.



How do Zoonotic Diseases spread ?

Direct Contact

Coming into contact with the saliva, blood, urine, mucous, feces, or other body fluids of an infected animal.



Indirect Contact

Coming into contact with areas where animals live and roam, or objects or surfaces that have been contaminated with germs.

Vector Borne

Being bitten by a tick, or an insect like a mosquito or a flea.



Food Borne

Contaminated food can cause illness in people and animals, including pets.

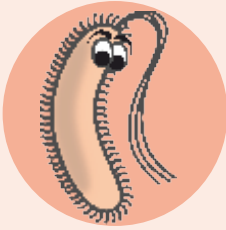
Why do Zoonotic Diseases matter ?

People can come into contact with animals in many places.

Anyone can become sick from a zoonotic disease, including healthy people and healthy animals.

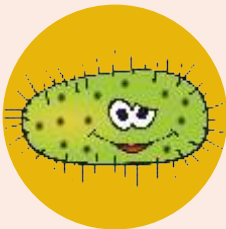


List of Diseases



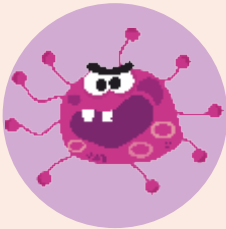
BACTERIA

Campylobacteriosis
E. Coli Infection
Salmonellosis
Listeriosis
Q Fever
Anthrax
Brucellosis



VIRUSES

Influenza
Rabies



PARASITES

Trichinosis
Cryptosporidiosis

Enteric Zoonotic Diseases (EZD)

Enteric or Foodborne zoonotic diseases are caused by consumption of food or water contaminated by pathogenic (disease-causing) microorganisms such as bacteria, viruses and parasites.

They enter the body through the gastrointestinal tract where the first symptoms often occur. Many of these micro-organisms are commonly found in the intestines of healthy food-producing animals.

The risks of contamination are present from farm to fork and require prevention and control throughout the food chain.

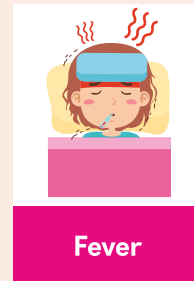
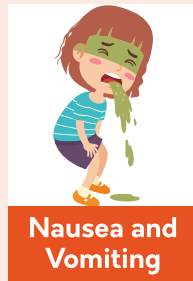
Lets learn some of the most common foodborne diseases.



1. Campylobacteriosis

- It is a diarrheal disease in humans caused by Campylobacter bacteria.
- Pigs, cows, chickens, and other birds and animals even showing no clinical symptoms carry this bacteria.

Clinical signs in humans



How does it spread ?

- Eating undercooked food
- Drinking contaminated water or raw milk
- Contact with the stool of infected animals

Prevention

- Do not let infants and children touch raw poultry products or packaging
- Use separate cutting boards for raw and cooked meat and vegetables, fruit, or cheese
- Do not eat or drink unpasteurized dairy products, including raw milk
- Cook poultry thoroughly
- Always wash your hands with soap and water

2. E. Coli Infection

- There are hundreds of strains of E. coli and most strains do not make people sick. Some strains, including E. coli O157:H7, produce a toxin called "Shiga toxin" that can make people sick (also called STEC).
- E. coli live in the intestines of people and animals including cows, goats, sheep, deer, and elk. A major source for human illness is cows. STEC generally does not make animals sick.

Clinical signs in humans

- Diarrhea
- Stomach Pain
- Nausea and Vomiting
- Fever

How does it spread ?



Eating contaminated food



Drinking contaminated water or raw milk



Contact with stool of infected animals



Swallowing contaminated recreational water

Prevention

- Cook all food products thoroughly
- Do not drink raw milk or unpasteurized dairy products and juices
- Use separate cutting boards for raw and cooked meat and vegetables, fruit, or cheese
- Wash all fruits and vegetables before eating

3. Salmonellosis

- It is an illness caused by a group of bacteria called Salmonella, which is a major cause of diarrhea.
- The bacteria are found in the stool of sick and healthy people and animals. Pets and farm animals can carry the bacteria and spread Salmonella.

Clinical signs in humans

Diarrhea

Nausea and Vomiting

Stomach Pain

Fever

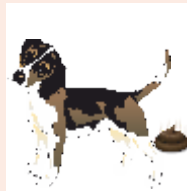
How does it spread ?



Eating contaminated food



Poor hand hygiene



Contact with stool of infected animals



Touching reptiles

Prevention

- Cook all food products thoroughly
- Do not eat raw eggs or drink raw milk
- Use separate cutting boards for raw and cooked meat and vegetables, fruit, or cheese
- Do not let children touch reptiles
- Always wash your hands with soap and water

4. Listeriosis

- It is an illness caused by eating food contaminated with Listeria bacteria.
- The disease mostly affects pregnant women, newborns, and adults with weakened immune systems.

Clinical signs in humans



How does it spread ?

- Soil and water
- Animals and animal products
- Raw milk

Prevention

- Cook all food products thoroughly
- Do not drink raw milk
- Use separate cutting boards for raw and cooked meat and vegetables, fruit, or cheese
- Wash raw vegetables and fruit before eating

5. Q Fever

- It is a disease in people and animals caused by the bacteria *Coxiella burnetii*.
- In animals, the disease is also known as Coxiellosis

Clinical signs in humans

- High fever
- Feeling tired
- Chills or sweat
- Headache
- Muscle aches
- Cough
- Nausea, vomiting, or diarrhea
- Chest pain

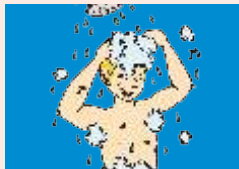
How does it spread ?

- Touching feces, urine, milk, or blood from an infected animal.
- Breathing in dust that contains Q fever bacteria.
- Touching a newborn animal or birthing products (placenta, birth fluids) from an infected animal.
- Drinking raw (unpasteurized) milk.

Prevention



Avoid contact with infected animals during birthing when possible



Shower and change your clothes and shoes after working with animals



Eat and drink only pasteurized milk and milk products (cheese, cream, butter)

6. Trichinosis

- Also called trichinellosis, it is caused by eating raw or undercooked meat of animals infected with a species of worm called Trichinella.
- Infection can only occur by eating raw or undercooked meat containing Trichinella.



Prevention

- Cook meat and meat products to safe temperatures
- Cook wild game meat thoroughly
- Freeze pork for 20 days
- Cook all meat fed to pigs or other wild animals
- Do not allow hogs to eat uncooked carcasses of other animals, including rats
- Clean meat grinders thoroughly if you prepare your own ground meats

7. Cryptosporidiosis

- It is caused by a parasite called Cryptosporidium. The parasite has a hard outer shell, so it can live outside the body for a long time and is very hard to kill.
- The parasite lives in the intestines of people and animals. An infected animal passes the parasite in their stool. People get the disease when they swallow the parasite.

Clinical signs in humans

- Diarrhea
- Stomach Pain
- Nausea and Vomiting
- Fever

How does it spread ?



Eating contaminated food

Swallowing contaminated water or beverages



Swallowing contaminated recreational water

Contact with contaminated stool



Prevention

- Wash your hands with soap and water
- Do not drink unpasteurized or raw milk or juices
- Wash all fruits and vegetables before eating

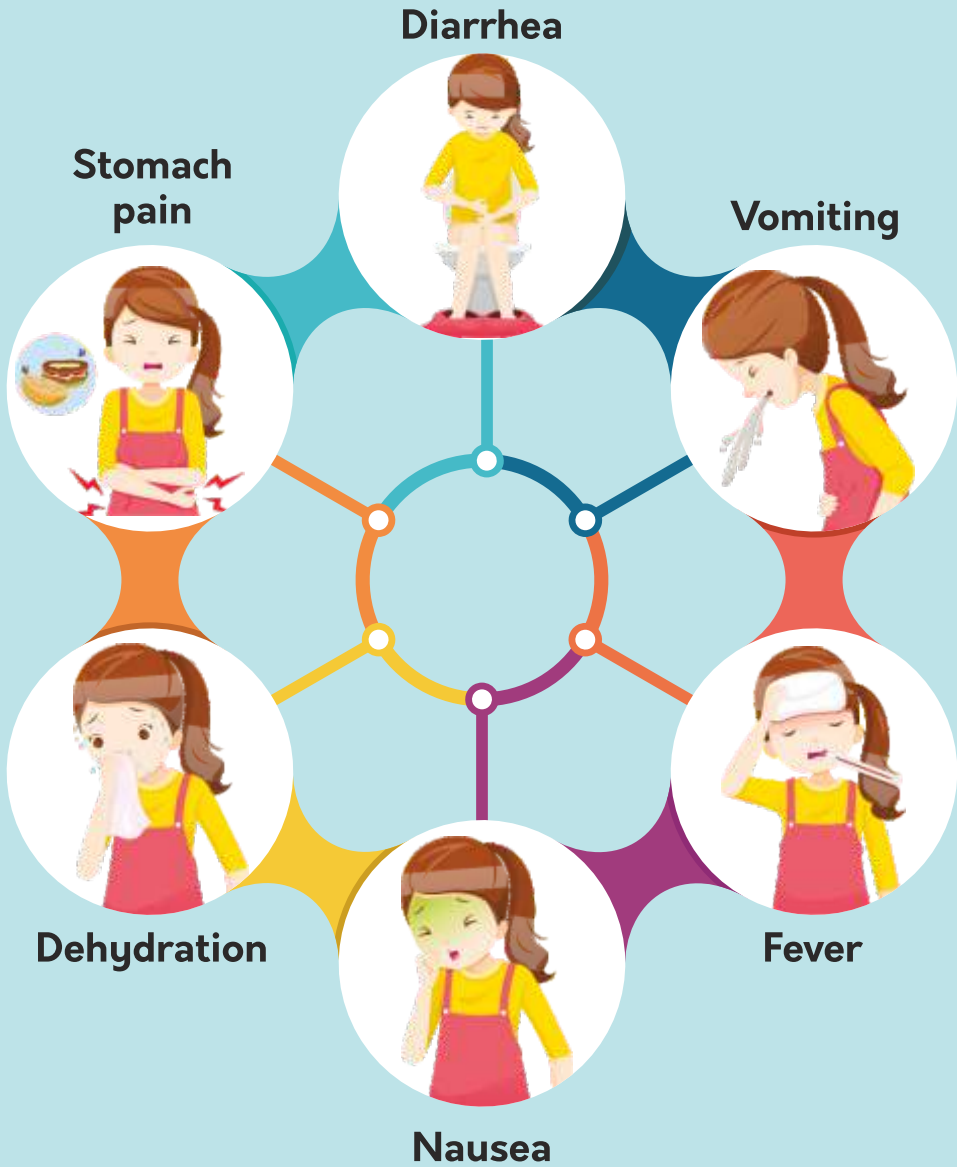
Common Symptoms for EZD in Animals

Animals often appear healthy, but they may not be. Common symptoms include :

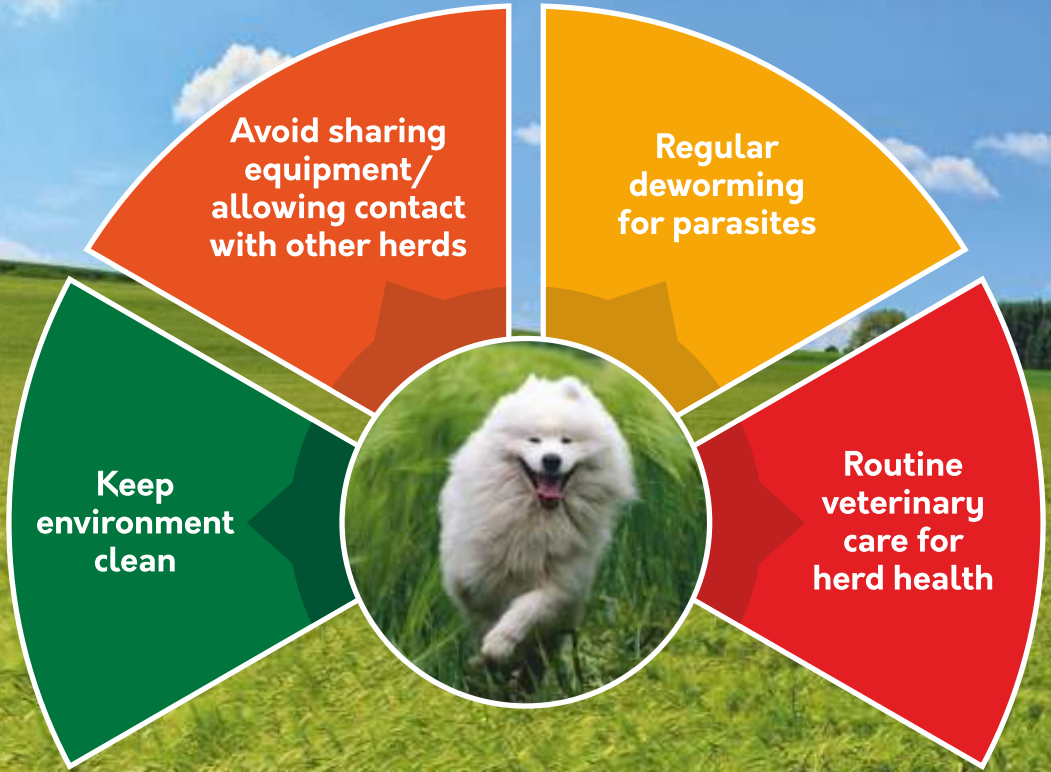
- ☛ Diarrhea (especially in young animals)
- ☛ Septicemia
- ☛ Respiratory tract infection with fever, dyspnea, nasal discharge
- ☛ Anorexia



Signs and Symptoms in humans



How can EZD be prevented in Animals ?



How can EZD be prevented in humans ?



Always wash hands

after handling animals, their manure, bedding, etc. before eating after handling raw meat.



Always wash raw fruits and vegetables



Cook food thoroughly



Do not drink raw milk

A large indoor chicken farm with many white chickens and red combs. The chickens are densely packed in rows, filling the frame. The floor is covered in straw or wood shavings. The ceiling is high with many lights and a red hanging object. The word "INFLUENZA" is written in large, white, outlined letters across the center of the image.

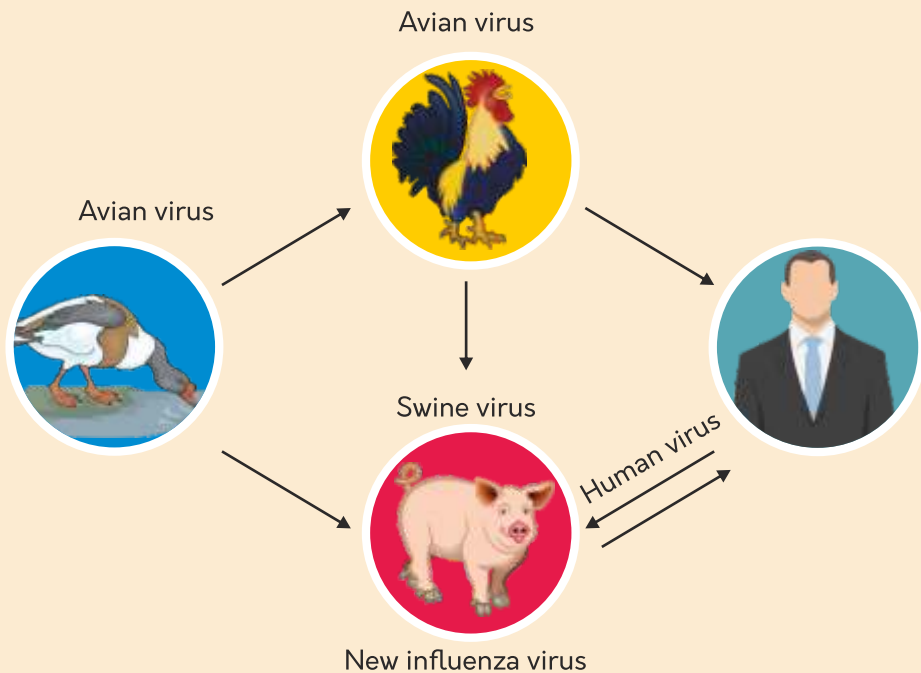
INFLUENZA

Influenza

- It is caused by influenza virus also known as “the flu”.
Influenza is a viral infection that attacks your respiratory system, resulting in an acute respiratory infection
- Humans, Pigs, Birds are common hosts

Why is Influenza a cause of concern ?

- Influenza can be serious and even deadly in humans and animals
- The influenza virus changes often (mutates)
 - Hard to prevent
 - Can get more than once
- Influenza in one species can change and infect another species



Clinical signs in :

Pigs

- Diarrhea
- Fever (Temperature of over 103 degrees Fahrenheit)
- Off Feed (does not want to eat or drink)
- Eye Discharge
- Lethargic (tired, does not want to move)

- Sneezing, runny nose, cough, difficulty in breathing



Poultry

- Decreased Egg Production
- Misshapen Eggs Soft, Thin Shells
- Swelling around head, neck, and eyes
- Purple Comb
- Sneezing, runny nose, cough, difficulty in breathing

- Purple Wattle
- Purple legs
- Sudden increase in flock deaths



Humans

Fever of 100°F or higher

Headache

Runny/stuffy nose

Cough



Sore throat

Muscle/body aches

Fatigue (tiredness)

What to do if my Animal is sick ?

- ☛ Quarantine (Isolation) - Keep sick animal away from other animals and people
- ☛ Call your veterinarian

What to do if I am sick ?

- ☛ Cover your mouth and nose when you cough and sneeze
- ☛ Stay at home
- ☛ Minimize contact with animals and other people
- ☛ Consult a doctor

SPECIAL NOTE: Tell your doctor if you have recently been around pigs or chickens.

Prevention

Animals

- ☛ Keep the area clean
- ☛ Avoid contact with sick animals or sick people
- ☛ Consult a veterinarian

Humans

- ☛ Wash hands frequently
- ☛ Cover your mouth when you cough
- ☛ Stay at home when sick
- ☛ Vaccinate
 - Annual seasonal vaccine for humans
- ☛ Avoid contact with sick people and sick animals





Who else is at risk for getting sick ?



VISITORS AND THE PUBLIC !

These diseases can be severe or even deadly for young children and anyone with a weakened immune system



The goal is to keep ourselves, our animals, and people visiting our animals safe





RABIES

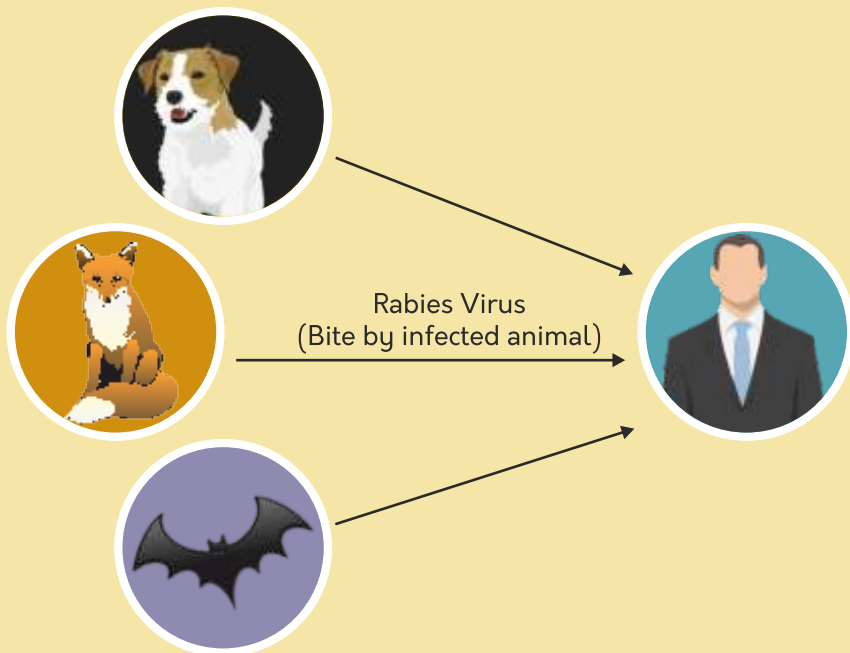


Rabies

- ☛ It is caused by the virus “rhabdovirus”
- ☛ Rabies 100% fatal but 100% vaccine preventable
- ☛ A deadly viral disease spread by infected animal’s saliva, but it is 100% vaccine preventable. Saliva acts as the intermediate of disease transmission from rabid animal to human.
- ☛ Raccoons, Dogs, Skunks, Foxes, and Bats are common hosts

Why is Rabies a cause of concern ?

- ☛ The virus affects and harms the brain which ultimately results in death if not treated timely
- ☛ It is a public health concern as it spreads from infected animal to human
- ☛ Transmitted from saliva of infected animals through bites, cuts, wounds and scratches



Signs of Rabies in : Animals

Probable signs would be:

- ☛ Aggressiveness
- ☛ Anorexia
- ☛ Nervousness
- ☛ Excessive drooling and foaming at the mouth
- ☛ Abnormal behavior such as
 - Wild animals are losing their fear of humans
 - Animals that are normally active at night are seen during the day



Humans

2 types of symptoms:

- ☛ Flu-like symptoms - Fever, Headache and anxiety, Sore throat and cough
- ☛ Neurologic period- Aggression, Convulsions, Hypersalivation and hydrophobia, Hallucinations, Paralysis, Hyperventilation



What to do if my Animal is sick ?

- ☛ Capture the dog and lock it in a room
- ☛ Give safe food and water
- ☛ Do not approach the dog
- ☛ Observe the body language and signs
- ☛ Call your doctor/ veterinarian for treatment
- ☛ Adhere the guidelines of vaccination

What to do if I am sick ?

- ☛ Emergency preparedness when bitten by dog - Wash the wound immediately and thoroughly with soap and running water for at least 10-15 minutes
- ☛ Seek immediate medical attention





Prevention

Animals

- Protect your pet
- Vaccinate your pets as per the direction of veterinarian / doctor
 - 1st dose- at 3 months of age
 - Repeat annually
- Stay away - never handle unfamiliar and stray animals
- Do not touch dead animals
- Learn - the common behavioural changes of a dog
- Disseminate - Create awareness to prevent
- Extreme caution must be exercised to avoid dog bites in public places. Keep your dog chained, fenced, and locked up

Humans

- Avoid contact with sick and wild animals
- Seek medication immediately
- Vaccination schedules to be followed
- Do not rely on traditional healers and home remedies
- Report the bite to the nearest local authorities such as veterinary offices, doctors



Clean Hands make you healthy!

Wet your hands with clean, running water and apply soap.



Lather your hands by rubbing them together with the soap.



Scrub your hands for at least 20 seconds.

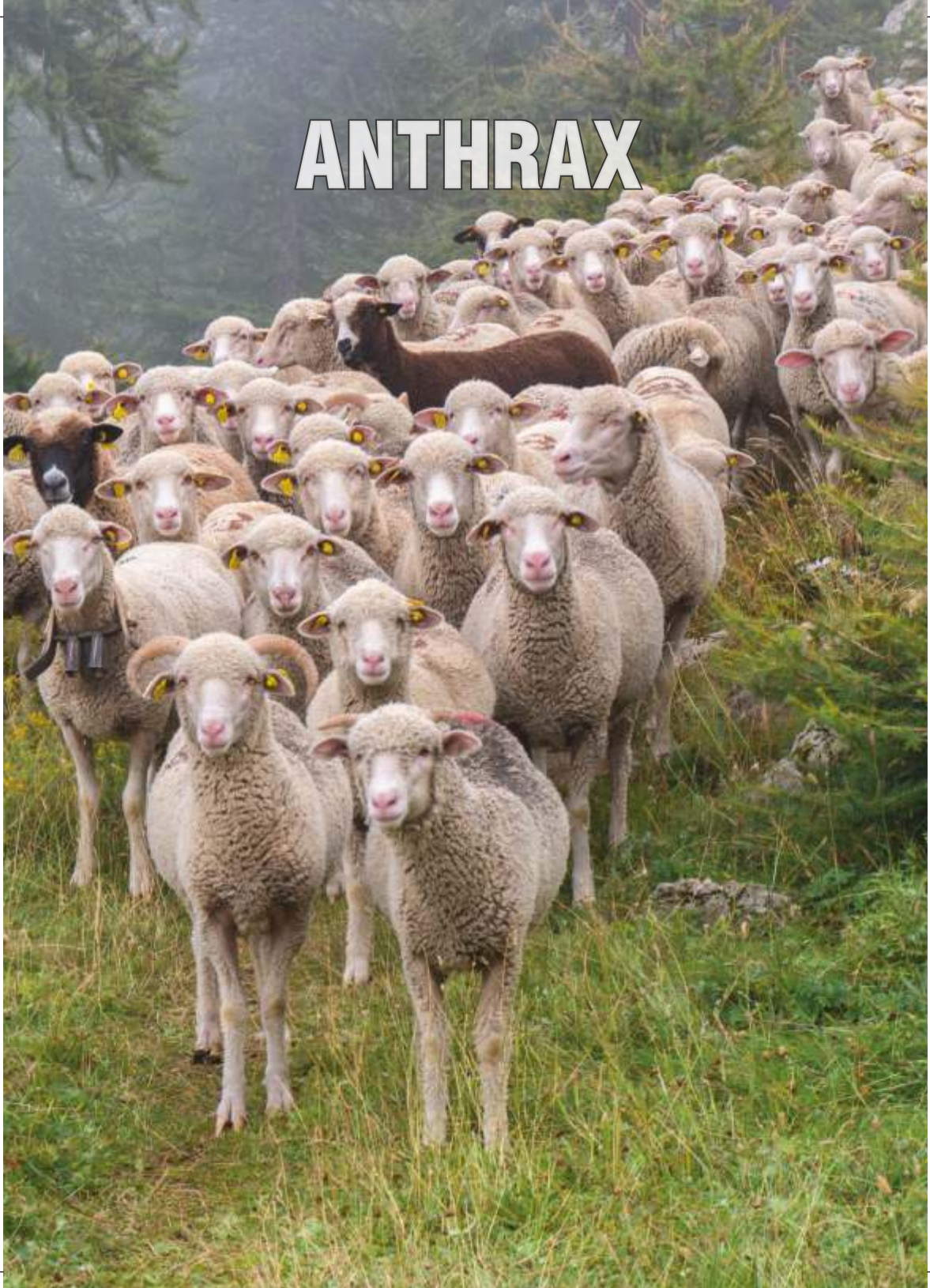


Rinse your hands well under clean, running water.



Dry your hands using a clean towel or air dry them.

ANTHRAX

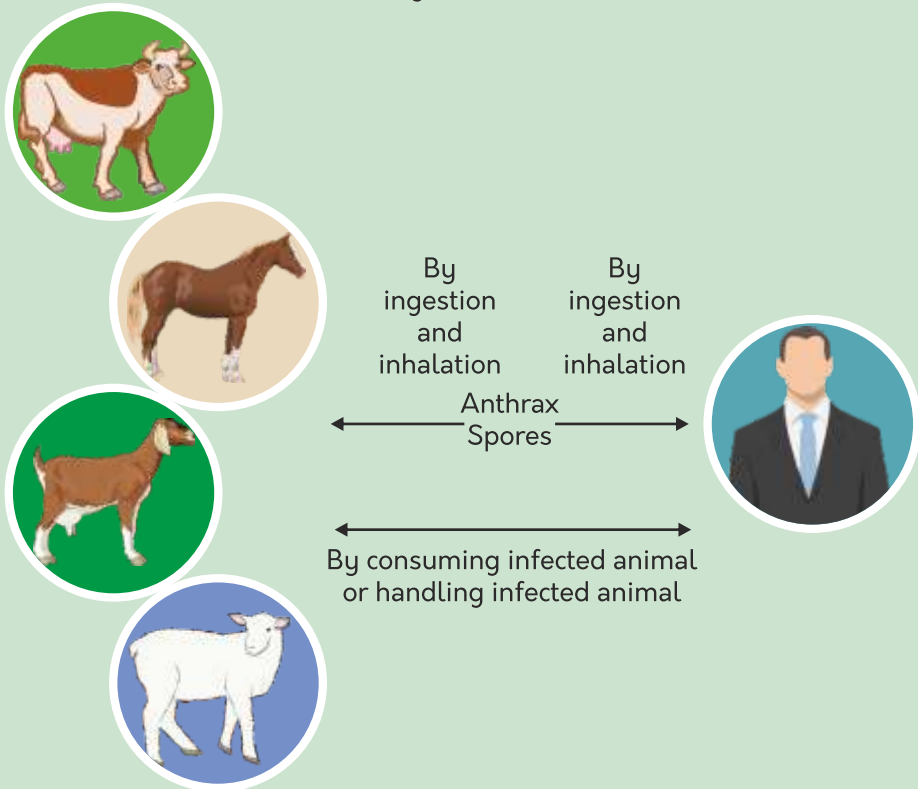


Anthrax

- ☛ It is caused by a bacteria called *Bacillus anthracis* that affects both humans and animals.
- ☛ Anthrax is a bacterial infection that infects livestock and humans. It leads to bloody discharge from different body openings or death in animals and affects either the skin, intestine or lungs in humans
- ☛ Cattle, Sheep, Goats, Horses, etc. are common hosts

Why is Anthrax a cause of concern ?

- ☛ It occurs naturally in soil and commonly affects domestic and wild animals
- ☛ People can get sick with anthrax if they come in contact with infected animals or contaminated animal products
- ☛ It can cause serious lung infection

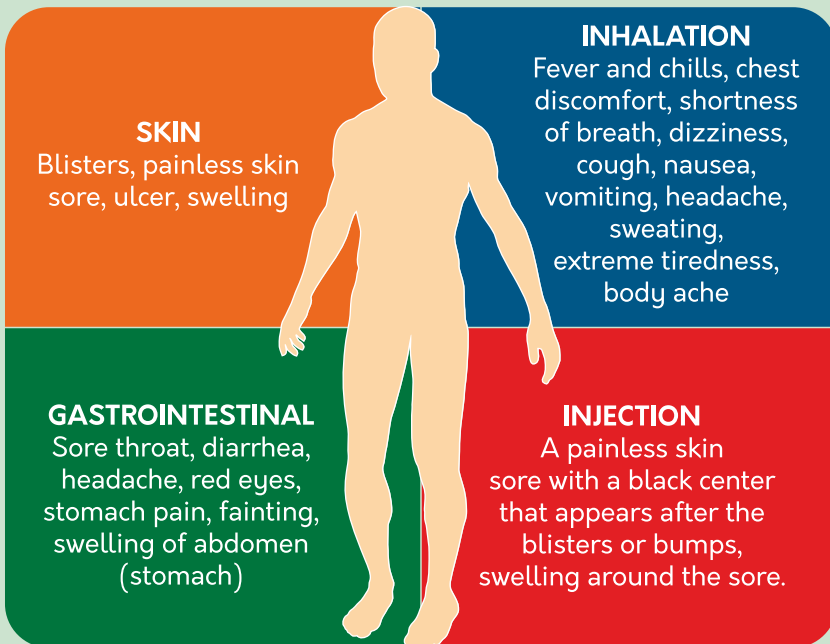


Signs of Anthrax in : Animals

- High fever
- Staggering
- Trembling
- Collapse
- Bloody discharge from natural body opening
- Pregnant animal may abort
- Breathing difficulties



Humans



What to do if my Animal is sick ?

- Isolate the infected animal and separate them from other animals
- Report immediately and visit Veterinarian for treatment

What to do if I am sick ?

- Visit doctor and explain you have been exposed to anthrax
- Get anthrax vaccine (antibiotics) as prescribed by doctors
- Test blood, skin and respiration secretions



Prevention

Animals

- Isolation of sick /infected animals
- Ensuring animal vaccination as per the schedule
- Keep area clean and hygienic
- Proper disposal and sanitation of the dead infected animal to prevent the spread

Humans

- Avoid handling infected animals
- Seek medical attention at the earliest
- Adhere to treatment prescribed by the doctor

BRUCELLOSIS



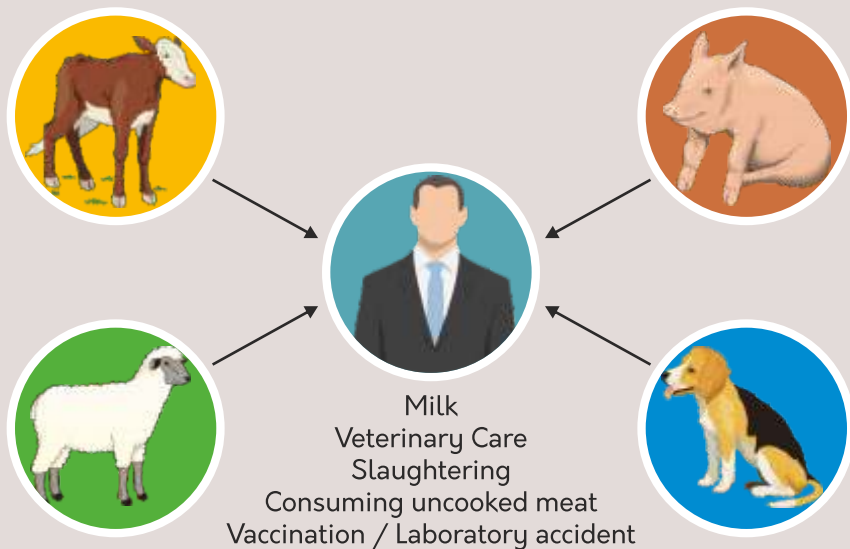
Brucellosis

- ☛ Brucellosis is caused by bacteria of the genus Brucella
- ☛ The disease in people, sometimes referred to as undulant fever, is a serious public health problem, especially when caused by B melitensis.
- ☛ Buffaloes, Bisons, Camels, Pigs, Sheep, Goats, Elks, Dogs, Horses etc. are common hosts.

Why is Brucellosis a cause of concern ?

- ☛ Bacterial disease that spreads from infected animals or by consuming unpasteurised animal products by humans
- ☛ Patients can also have bronchitis, pneumonia
- ☛ Cause infection in testicles, spleen, liver
- ☛ Cause central nervous system infection (meningitis and encephalitis)

How does Brusellosis transmit ?



Signs of Brucellosis in : Animals

- ☛ Vaginal discharge
- ☛ Joint injuries
- ☛ Decrease in milk production
- ☛ Birth of weak calves
- ☛ Abortion of cattle



Humans

- ☛ Fever
- ☛ Joint pain
- ☛ Painful lymph nodes
- ☛ Weight loss
- ☛ Headache
- ☛ Severe stomach pain

What to do if my Animal is sick ?

- ☛ Isolate the infected animal.
- ☛ Immediately inform veterinarian or animal health professional.

What to do if I am sick ?

- ☛ Visit doctor and get tested
- ☛ Take medication as per prescription.
- ☛ Stick to medication schedule



Prevention

Animals

- ☛ Isolation of sick animals
- ☛ Ensuring animal vaccination as per the schedule
- ☛ Annual check-up of all cattle in the farm must be carried out.

Humans

- ☛ Avoid handling infected animals
- ☛ If working in a domain like animal husbandry
- ☛ take all precautions as per standard procedures.
- ☛ Seek immediate medical attention



Who else is at risk for getting sick?



**People
working
in farms**

**Dairy
Farmers**



Butchers

Veterinarians



**People
working in
Meat
Processing
Plants etc.**



Small things you can do to protect yourself and your family from zoonotic diseases



⇒ Keep hands clean

Washing your hands right after being around animals, even if you didn't touch any animals, is one of the most important steps you can take to avoid getting sick and spreading germs to others.

If soap and water are not readily available, you can use an alcohol-based hand sanitizer that contains at least 60% alcohol.

Because hand sanitizers do not get rid of all types of germs, it is important to wash your hands with soap and water if they are available.

⇒ Know the simple things you can do to stay safe around your pets.

- Prevent bites from mosquitoes, ticks, and fleas.
- Learn more about ways to handle food safely – whether it is for yourself or your family, your pet, or other animals.
- Be aware of zoonotic diseases both at home, away from home (such as at petting zoos or other animal exhibits), in childcare settings or schools and when you travel.
- Avoid bites and scratches from animals.





BIOSECURITY

What is Biosecurity?

Biosecurity – steps to help prevent the introduction and spread of disease

- ☛ Keeps your animals safe from the introduction of new germs
- ☛ Helps minimize the spread of existing germs
- ☛ Helps prevent sickness from spreading TO or FROM humans and animals

Biosecurity : What can you do ?

- ☛ Encourage healthy interactions between animals and people
 - Ask people to wash their hands before and after handling your animals
 - Discourage kissing animals, driving strollers through barns, using pacifiers that could be dropped, etc.
- ☛ Keep human eating areas away from animal areas



Visitors can carry germs inside the farm on their clothes, boots, their own bodies, or even their vehicles.

Visitors should:

Wear clean boots and clothes



Wash hands before and after



Stay out of the barn when sick

- Do not share equipment with other farms
 - Even healthy animals can pass germs
- Keep your area clean and organized
- Separate any animals who appear to possibly be sick
- Do not bring suspected ill animals to fairs



How to be safe around Animals

Know that animals carry germs that can make people sick



Never eat, drink or put things into your mouth in animal areas



Older adults, pregnant women, and young children should be extra careful around animals



Wash your hands with soap and water right after visiting the animal area







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