



GREAT MINDS
UNIVERSITY OF JOS
PLATEAU STATE, NIGERIA

Presents a seminar in commemoration of
WORLD ZOOONOSIS DAY

TAGGED:

EUDAIMONIA

**A PANACEA FOR CREATING AWARENESS
TO ATTAIN A FREE ZOONOTIC WORLD**



HOST
T.M SOLOMON
PROVER, GREAT MINDS UNIOS



GUEST SPEAKER
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MODERATOR
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SECRETARY, GREAT MINDS UNIOS

6TH
JULY, 2025

STARTS BY 8:00PM

VENUE: GOOGLE MEET

• **F E A T U R I N G :** •

**INSIGHTFUL TALK | WELFARE ORIENTATION | PROACTIVE SENSITIZATION
QUESTIONS AND ANSWERS | MASSIVE GIVE AWAY
AND LOTS MORE!**

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**A SERIES TARGETED TOWARDS CREATING AWARENESS, PROMOTING PUBLIC HEALTH
AND SUSTAINING A FREE ZOONOTIC WORLD!!!**



ZOONOSES



Prof Pwaveno H. Bamaiyi

***Department of Veterinary Public Health and
Preventive Medicine, University of Jos***







A man who is right with
God cares for his animal,
but the sinful man is hard
and has no pity.

Proverbs 12:10 (New Life Version)

ZOONOSES

- **Zoonosis** are infections which are naturally transmitted between vertebrate animals and people.
- Derived from Greek word zoon(animals) and noses (diseases). People , birds, animals , arthropods and inanimate environment are all involved in cycles of zoonotic infections.

Genesis 1:21 So God created the great creatures of the sea and every living thing with which the water teems and that moves about in it, according to their kinds, and every winged bird according to its kind. And God saw that it was good.

Surah Al-An'am 6:38

**There is no animal that crawls
on the earth, no bird that flies
with its two wings, but are
communities like you**

Surah An-Nahl Ayat 66 (16:66 Quran)

In livestock, too, you have a lesson-

**We give you a drink from the
contents of their bellies, between
waste matter and blood, pure milk,
sweet to the drinker.**



WORLD ZOOONOSES DAY

—6th JULY—



WORLD ZOOONOSES DAY 2025

Preventing the
Next Pandemic
Starts with
Awareness

World Zoonosis Day (WZD) is celebrated annually every July 6, to raise awareness about zoonotic diseases that can be transmitted between animals and humans. This year's theme is "One Health, One Future: Preventing Zoonotic Outbreaks Together" emphasizes the importance of collaboration among One Health stakeholders



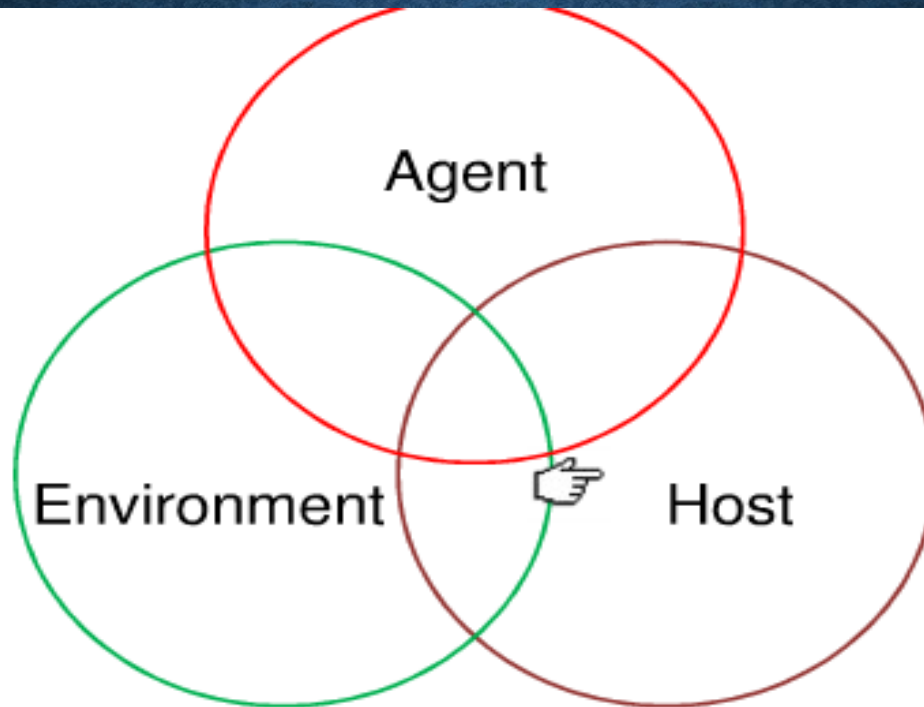
The first vaccine on Earth was developed by Edward Jenner, who created a vaccine against smallpox in 1796. He used cowpox to immunize a young boy, James Phipps, against smallpox, marking the beginning of vaccination as a recognized method of disease prevention, [according to the World Health Organization \(WHO\)](#). 



The first successful rabies vaccine was developed by Louis Pasteur in 1885. He administered the vaccine to a young boy named Joseph Meister, who had been severely bitten by a rabid dog. This marked a turning point in the fight against rabies, as it was the first time a human had been successfully vaccinated against the disease. 



ZOONOSES



Zoonotic diseases are multifactorial and their occurrence is affected by interactions between the host, the agent and the environment

God gave man dominion over animals and nature

Genesis 2:19-20

19 Now the LORD God had formed out of the ground all the wild animals and all the birds in the sky. He brought them to the man to see what he would name them; and whatever the man called each living creature, that was its name.

20 So the man gave names to all the livestock, the birds in the sky and all the wild animals.



WHY ZOOONOSES?

- 1. We keep animals for various reasons**
- 2. We take animal products (meat, milk, eggs, cheese, etc)**
- 3. We play with animals (recreation)**
- 4. We come across animals**
- 5. Ecosystem**
- 6. Responsible for 2.5 billion cases of human infection and 2.7 million human deaths globally every year!**

ZOONOSSES

Approximately **1500** infectious diseases are recognized
in humans

Of these **60%** are due to zoonoses

however

75% of recently emerging infectious diseases (EID)
have been caused by zoonotic pathogens

AETIOLOGIC AGENTS INVOLVED IN ZONNOSES

- **Viral zoonoses**

Viral zoonoses are virus infections of animals that can be naturally transmitted to man often with devastating effect. Rabies is perhaps the prime example of a zoonotic viral infection. Other viral zoonoses are avian influenza , crimean-congo haemorrhagic fever , Ebola and Rift valley fever .

- **Bacterial zoonoses**

Every year millions of people get sick, because of foodborne zoonoses caused by different types of pathogenic bacteria such as Salmonellosis , Campylobacteriosis etc. Other bacterial zoonoses are: anthrax , brucellosis , *E. coli* , leptospirosis , plague , shigellosis and tularaemia .

- **Rickettsial zoonoses**

Rickettsiae are extremely small sized obligate intracellular prokaryotes, which multiply by binary fission.

Rickettsial diseases are primarily transmitted by arthropods. The major reservoirs of infection are humans, rats, mice and small mammals .

The main sources of human infection are affected domestic animals and their products.

- **Parasitic zoonoses**

Parasitism is the major health problem both for animals and humans, which constitutes major part of the zoonoses. Some of the examples of parasitic zoonoses include cysticercosis, echinococcosis, toxoplasmosis, etc.

- **Fungal zoonoses**

Fungus is the main source of the most of the skin problems and mostly occurs due to direct contact. In most developing countries, zoonotic diseases are among those diseases that contribute significantly to an already overly burdened public health system.

TRANSMISSION ROUTES OF ZOOONOTIC DISEASES

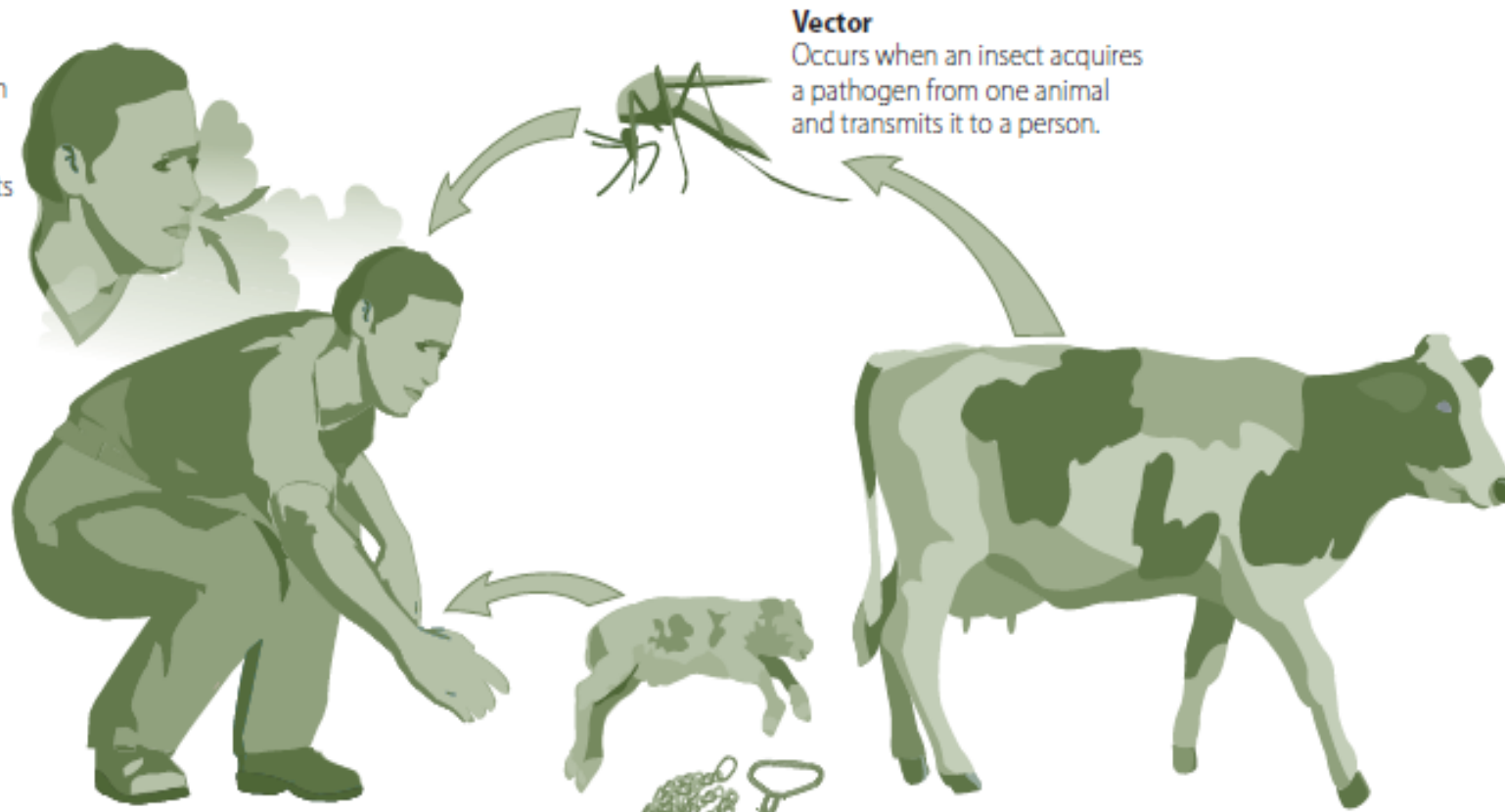
- **Aerosol**
- **Oral**
- **Direct Contact**
- **Fomite**
- **Vector**

TRANSMISSION ROUTES OF ZONOTIC DISEASES

Aerosol
Occurs when droplets are passed through the air from an infected animal and are breathed in by a person. Most exposure occurs when droplets are created from birthing tissues (placenta, birthing fluids), soil contaminated with feces, urine or bacteria and a person breathes in the dust particles.



Oral
Occurs by ingesting food or water contaminated with a pathogen. This can occur if animal products, such as milk or meat, are not pasteurized or cooked properly. Eating or drinking after handling animals without washing your hands could also lead to oral zoonotic disease transmission.



Vector
Occurs when an insect acquires a pathogen from one animal and transmits it to a person.

Direct Contact
Requires the presence of a pathogen in the environment or within an infected animal. A person becomes exposed when the pathogen directly touches open wounds, mucous membranes or the skin.

Fomite
A fomite is an inanimate (non-living) object that can carry a pathogen from an animal to a person. Examples of fomites include contaminated obstetrical (O.B.) chains, brushes, needles, clothing or bedding (straw, shavings).

TABLE OF ZOONOTIC DISEASES THEIR ORGANISMS AND TRANSMISSION

Disease	Organism	Main reservoirs	Usual mode of transmission to humans
Anthrax	<i>Bacillus anthracis</i>	livestock, wild animals, environment	direct contact, ingestion
Animal influenza	influenza viruses	livestock, humans	may be reverse zoonosis
Avian influenza	Influenza virus, avian strains	poultry, ducks	direct contact
Bovine tuberculosis	<i>Mycobacterium bovis</i>	cattle	milk
Brucellosis	<i>Brucella species</i>	cattle, goats, sheep, pigs	dairy products, milk
Cat scratch fever	<i>Bartonella henselae</i>	cats	bite, scratch
Cysticercosis	<i>Taenia species</i>	cattle, pigs	meat
Cryptosporidiosis	<i>Cryptosporidium species</i>	cattle, sheep, pets	water, direct contact
Enzootic abortion	<i>Chlamydophila abortus</i>	farm animals, sheep	direct contact, aerosol
Erysipeloid	<i>Erysipelothrix rhusiopathiae</i>	pigs, fish, environment	direct contact
Fish tank granuloma	<i>Mycobacterium marinum</i>	fish	direct contact, water
Food poisoning	<i>Campylobacter species</i>	poultry, farm animals	raw meat, milk

TABLE OF ZOONOTIC DISEASES THEIR ORGANISMS AND TRANSMISSION

Giardiasis	<i>Giardia lamblia</i>	humans, wildlife	waterborne, person to person
Glanders	<i>Burkholderia mallei</i>	horse, donkey, mule	direct contact
Haemorrhagic colitis	<i>Escherichia coli</i> O157	ruminants	direct contact (and foodborne)
Hantavirus syndromes	Hantaviruses	rodents	aerosol
Hepatitis E	Hepatitis E virus	not yet known	not yet known
Hydatid disease	<i>Echinococcus granulosus</i>	dogs, sheep	ingestion of eggs excreted by dog
Leptospirosis	<i>Leptospira species</i>	rodents, ruminants	infected urine, water
Listeriosis	<i>Listeria monocytogenes</i>	cattle, sheep, soil	dairy produce, meat products
Louping ill	Louping ill virus	sheep, grouse	direct contact, tick bite
Lyme disease	<i>Borrelia burgdorferi</i>	ticks, rodents, sheep, deer, small mammals	tick bite
Lymphocytic choriomeningitis	Lymphocytic choriomeningitis virus	rodents	direct contact
Orf	Orf virus	sheep	direct contact
Pasteurellosis	<i>Pasteurella multocida</i>	dogs, cats, many mammals	bite/scratch, direct contact
Plague	<i>Yersinia pestis</i>	rats and their fleas	flea bite
Psittacosis	<i>Chlamydophila psittaci</i>	birds, poultry, ducks	aerosol, direct contact
Q fever	<i>Coxiella burnetii</i>	cattle, sheep, goats, cats	aerosol, direct contact, milk, fomites

TABLE OF ZOONOTIC DISEASES THEIR ORGANISMS AND TRANSMISSION

Rabies	Rabies viruses	dogs, foxes, bats, cats	animal bite
Rat bite fever (Haverhill fever)	<i>Streptobacillus moniliformis</i>	rats	bite/scratch, milk, water
Rift Valley fever	Rift Valley fever virus	cattle, goats, sheep	direct contact, mosquito bite
Ringworm	Dermatophyte fungi	cats, dogs, cattle, many animal species	direct contact
Streptococcal sepsis	<i>Streptococcus suis</i>	pigs	direct contact, meat
Streptococcal sepsis	<i>Streptococcus zooepidemicus</i>	horses, cattle	direct contact, milk
Tickborne encephalitis	Tickborne encephalitis virus	rodents, small mammals, livestock	tickbite, unpasteurised milk products
Toxocariasis	<i>Toxocara canis/cati</i>	dogs, cats	direct contact
Toxoplasmosis	<i>Toxoplasma gondii</i>	cats, ruminants	ingestion of faecal oocysts, meat
Trichinellosis	<i>Trichinella spiralis</i>	pigs, wild boar	pork products
Tularemia	<i>Francisella tularensis</i>	rabbits, wild animals, environment, ticks	direct contact, aerosol, ticks, inoculation
Zoonotic diphtheria	<i>Corynebacterium ulcerans</i>	cattle, farm animals, dogs	direct contact, milk
West Nile fever	West nile virus	wild birds, mosquitoes	mosquito bite

SOME ZOONOTIC DISEASES IN NIGERIA

Tuberculosis	Ring worm
Brucellosis	Leptospirosis
Campylobacteriosis	Listeriosis
Tetanus	Cryptosporidiosis
Lassa Fever	Anthrax
Congo fever	Salmonellosis
Leishmaniasis	Chlamydiosis
Rabies	Toxoplasmosis
E.coli	Tuberculosis

[illegible]

RABIES





Aquador mata-perros.
(1850)





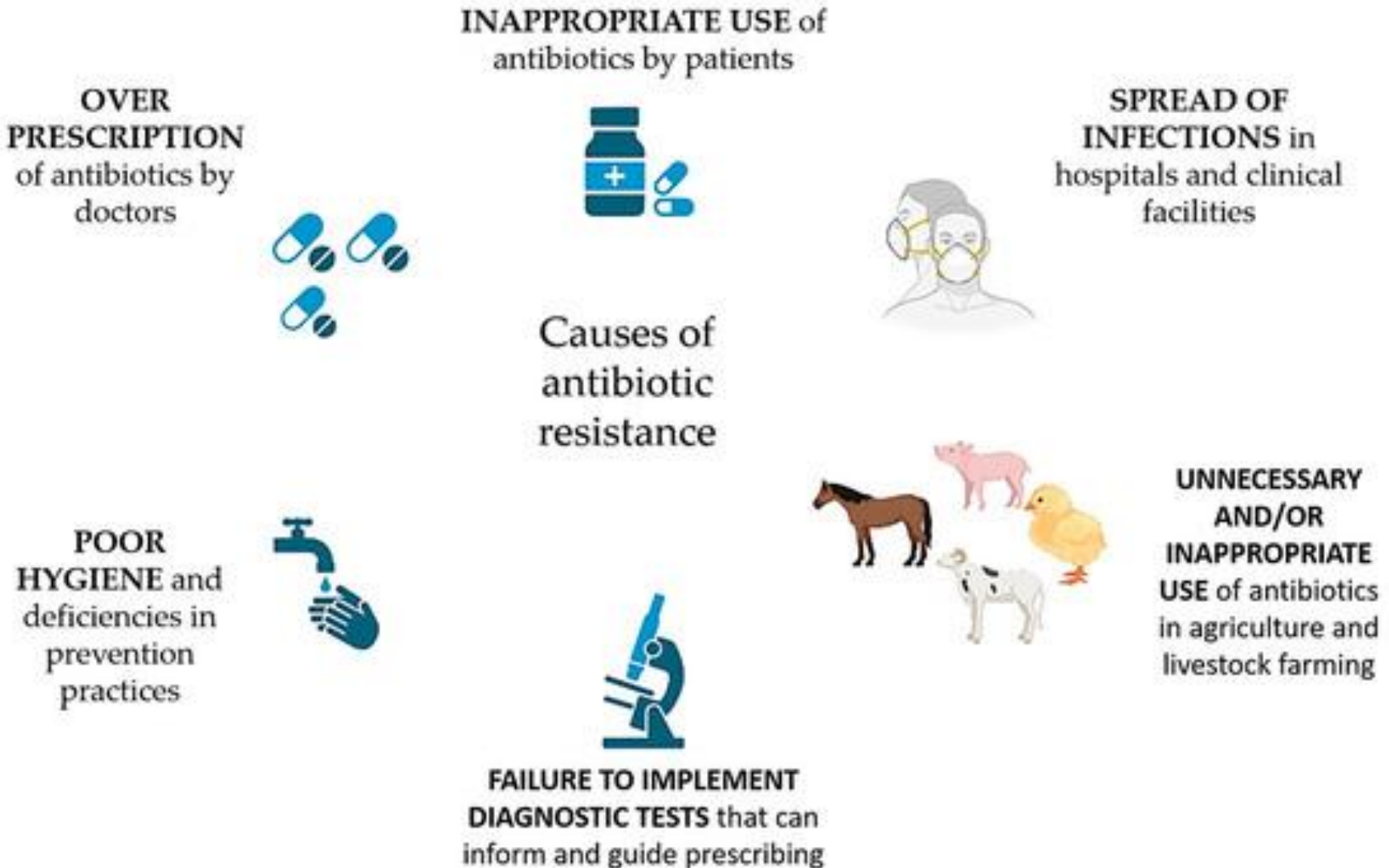
BRUCELLOSIS

#IDFridays

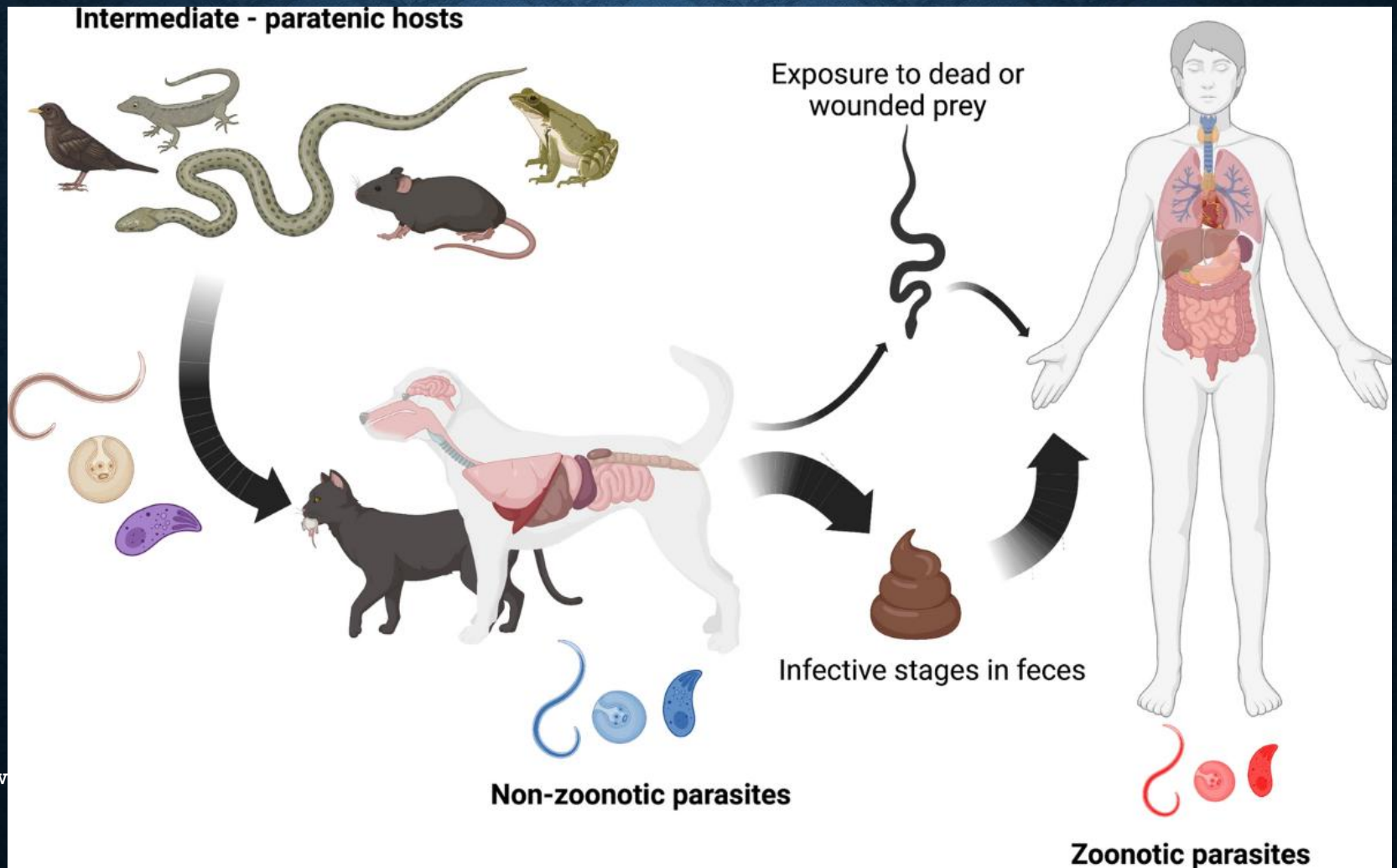




ANTIMICROBIAL RESISTANCE (AMR)



ZOONOTIC PARASITES



Roundworms



Hookworms



Tapeworms





Lassa Fever

Phases

1

Fatigue



General Weakness



Fever



2

Headache



Sore Throat



Vomitting



Diarrhoea



3

Face Swelling



Low Blood Pressure



Nose Bleeding



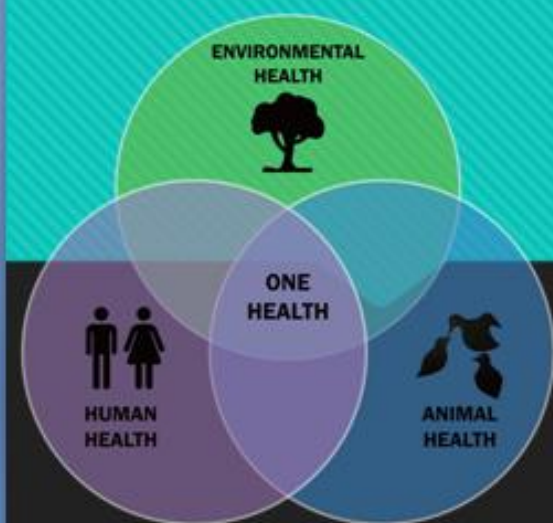
ANTHRAX

In July 2023, Nigeria experienced its first confirmed anthrax outbreak, affecting livestock on a multi-species farm in Niger State, with eight animal deaths reported. The Nigeria Centre for Disease Control (NCDC) confirmed the outbreak after samples from the farm tested positive for anthrax





THE ANTHRAX SCARE: CAN WE WIN THE BATTLE? (ONE HEALTH APPROACH)



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Slides available at www.blessing.ng



ZOONOTIC TUBERCULOSIS



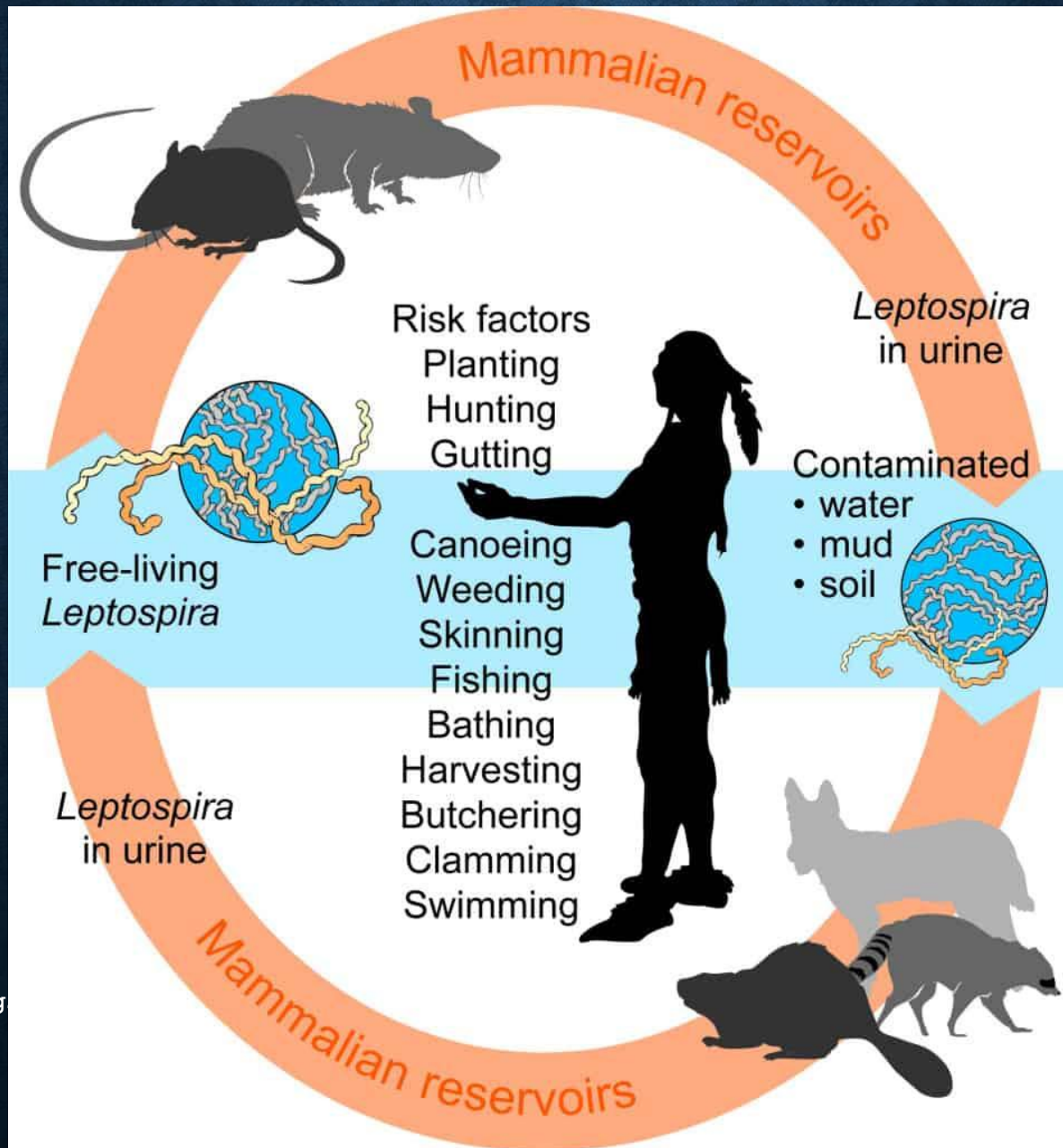
WHAT IS ZOONOTIC TB?

- Zoonotic tuberculosis (TB) is a form of tuberculosis in people caused by *Mycobacterium bovis*, which belongs to the *M. tuberculosis* complex.
- It often affects sites other than the lungs (extra-pulmonary), but in many cases is clinically indistinguishable from TB caused by *M. tuberculosis*.
- Within animal populations, *M. bovis* is the causative agent of bovine TB. It mainly affects cattle, which are the most important animal reservoir, and can

RISK FACTORS

- While the most common route of transmission of *M. bovis* to humans is through contaminated food (mainly untreated dairy products or, less commonly, untreated meat products), airborne transmission also poses an occupational risk to people in contact with infected animals or animal products, including farmers, veterinarians, slaughterhouse workers and butchers.

LEPTOSPIROSIS

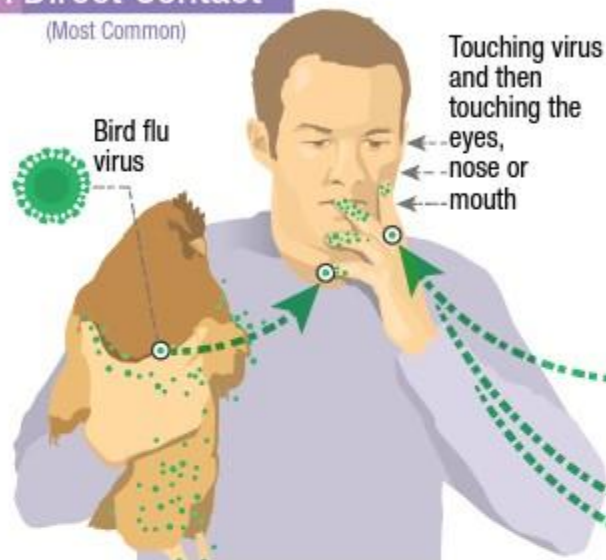


How Infected Backyard Poultry Could Spread Bird Flu to People

Human Infections with Bird Flu Viruses Rare But Possible

1 Direct Contact

(Most Common)

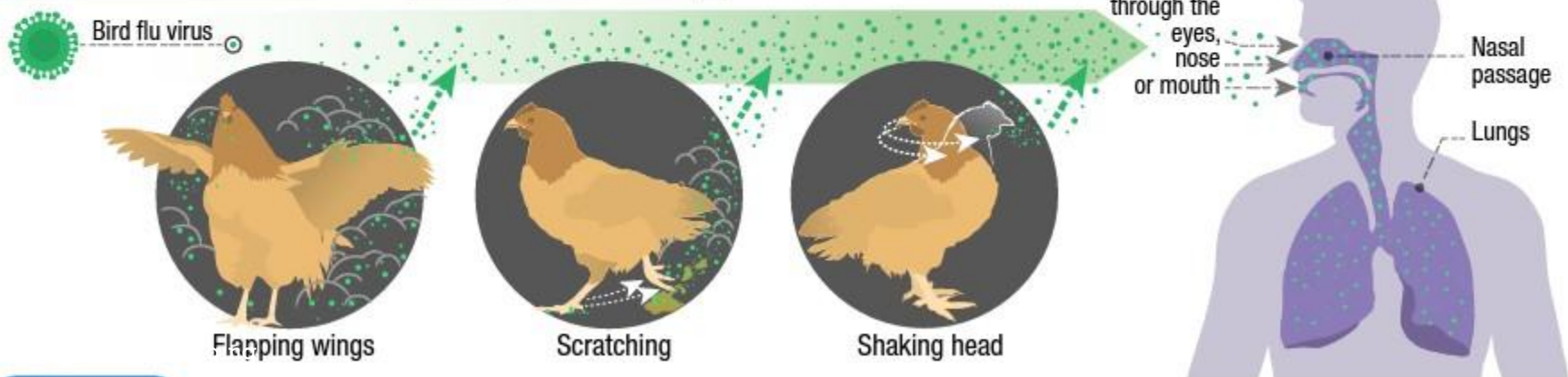


Infection can occur without touching poultry.

2 Contaminated Surfaces



3 Bird Flu Virus in the Air (in Droplets or Dust)



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

www.cdc.gov/flu/avianflu/avian-in-humans.htm

CS330154

TOXOPLASMOSIS

ZOONOSES FACTSHEET

Diseases that spread from animals to people

WHAT IS IT?

Protozoa are very small -
we cannot see them
without a microscope.

Toxoplasma gondii is a protozoa (a type of germ) that can infect animals and humans to cause sickness.

Animals can spread Toxoplasma as oocysts in their poo, or other cysts may be in their meat.

HOW DOES IT SPREAD?



Toxoplasma can infect lots of animals including dogs, cats, rats and humans but **cats are the most important spreaders** of the disease.

Cats usually become infected by eating infected rats or birds.

People become infected by accidentally eating cysts that are shed in the poo of infected cats, especially when cleaning litter trays and not washing hands properly afterwards. People are sometimes infected by eating undercooked meat, especially if it hunted or killed at home and not bought from the shop.

WHAT DOES IT DO?

If you are healthy, a Toxoplasma infection may feel just like a bad flu. Toxoplasma infection is most dangerous to **pregnant women**. Toxoplasma infection can cause miscarriage, problems with the foetus' brain or eyes.

Plague (Black death, Bubonic plague)

Aetiology: *Yersinia pestis*



COVID-19



[COVID-19 CORONAVIRUS](#) / DEATH TOLL

[UPDATES](#) - [Graphs](#) - [Countries](#) - [Death Rate](#) - [Incubation](#) - [Age](#) - [Symptoms](#)

Last updated: April 13, 2024, 01:00 GMT

Coronavirus Death Toll

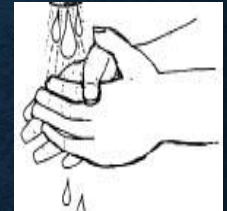
7,010,681 deaths

7,010,681 people have died so far from the coronavirus COVID-19 outbreak as of April 13, 2024, 01:00 GMT.

There are currently [704,753,890 confirmed cases](#) in [229 countries and territories](#). The [fatality rate is still being assessed](#).

HOW TO PREVENT ZOO NOTIC DISEASES

- **Good hygiene**
- Always wash your hands
- After handling animals, carcasses or meat
- After using the toilet
- Before eating or preparing food
- Use toilets. Never use the veld as a toilet, or if you have to, dig a deep hole and cover up with soil
- Clean up dog and cat faeces lying around and prevent children from coming into contact with these

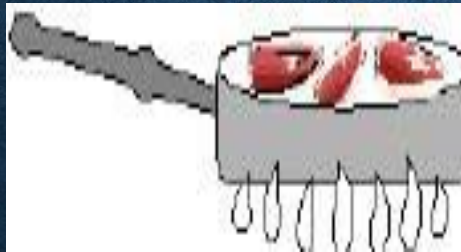


CORRECT FOOD PREPARATION

- **When slaughtering animals, cutting up meat and preparing food avoid contamination with dirt, flies, faeces and dirty water**
- **Do not eat meat from animals that have died either suddenly or after being ill. Leviticus 22:8; Deuteronomy 14:21**
- **Do not eat meat which contains lumps that do not look normal or has an unusual smell**



- **Cook meat well**
- **Buy meat from reputable dealers only**
- **Boil milk which has not been pasteurised**
- **Do not keep perishable food for long periods before use**

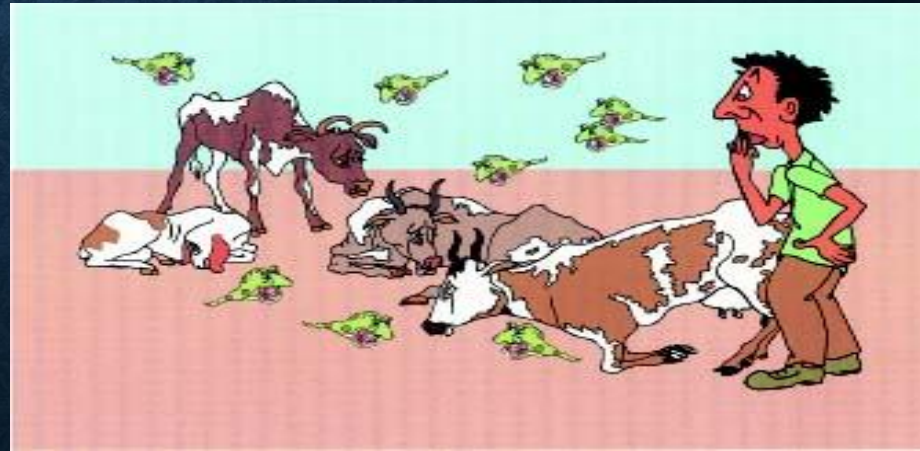


- Keep perishable food refrigerated when possible
- Wash dirt from vegetables before eating



TAKE CARE WHEN HANDLING SICK OR DEAD ANIMALS, ABORTED FOETUSES AND AFTERBIRTH

- Do not cut open animals which have died suddenly
- Use gloves when opening up a dead animal, handling aborted fetuses or afterbirth, or assisting during birth
- Wash hands in soap and water and even disinfectant after handling sick or dead animals, aborted fetuses and afterbirth
- Burn or bury carcasses, especially those from animals that have died suddenly



GOOD ANIMAL HEALTH MEASURES

- Vaccinate animals against the serious diseases affecting animals and people to protect both yourself and your animals (e.g. rabies, brucellosis, anthrax)
- Deworm pets
- Have cattle tested yearly for brucellosis and tuberculosis. If the cattle are positive for these diseases, you should sell them for controlled slaughter through an outlet where the meat will be inspected. Do not sell them to other people, because you are then only passing the problem on to them
- Do not feed raw offal to animals



WASH BITE WOUNDS PROMPTLY WITH SOAP AND WATER AND DISINFECTANT, AND SEEK MEDICAL ATTENTION

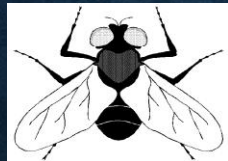


- Bites from animals can spread diseases (e.g. rabies and tetanus). There are many bacteria in an animal's mouth which can cause infection

- Do not handle strange or wild animals that appear tame



- Control rats and flies



CAN ZOONOTIC DISEASES BE TREATED?

- Some of these diseases can be treated, but you can get very sick and even die from others e.g. rabies and anthrax



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PREVENTION IS ALWAYS BETTER THAN CURE!

The first vaccine on Earth was developed by Edward Jenner, who created a vaccine against smallpox in 1796. He used cowpox to immunize a young boy, James Phipps, against smallpox, marking the beginning of vaccination as a recognized method of disease prevention, [according to the World Health Organization \(WHO\)](#). 



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ZOONOTIC DISEASE PREVENTION(W.A.S.H)

W.A.S.H

WASH



- Wash your hands often!!
- Use running water and soap or antimicrobial hand gels
- WASH BEFORE**—preparing food; eating; having contact with infants or young children
- WASH AFTER**—having contact with pets or other animals; cleaning up pet waste or cages; using the restroom; blowing your nose; changing infant diapers

Clean and disinfect pet areas regularly.

- Pick up pet waste in the yard weekly
- Clean and disinfect pet cages at least weekly
- Change cat litter boxes daily
- Clean bird cage linings daily

Avoid

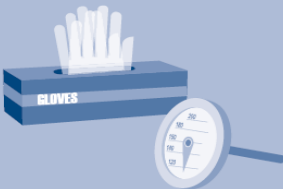


- Avoid wildlife animals
- Wildlife animals can be reservoirs for a variety of diseases

Avoid disease transmitting vectors

- Insect vectors, such as mosquitoes, ticks, and fleas can be carriers of a variety of zoonotic diseases
- Avoid vector areas (e.g., wooded areas for ticks) or activity times (e.g., dusk and dawn for mosquitoes)

SAFETY



- Use personal protection
- Wear gloves when handling feces or items in animal areas
- Use insect repellents and wear long sleeves and long pants when outdoors or in wooded areas
- Use appropriate flea and tick preventative products for pets—consult your veterinarian

Use proper food preparation procedures

- Do not eat raw or undercooked meat or eggs or consume raw milk or unpasteurized dairy products
- Cook foods thoroughly to a temperature of at least 160 °F
- Wash fruits and vegetables before eating
- Use separate cutting boards for cutting meats and vegetables to avoid cross contamination
- Promptly refrigerate unused foods

HEALTH



- Maintain good physical health for yourself and your pet
- Keep pet vaccinations current
- Have your pet checked regularly for intestinal parasites (e.g., worms)
- Do not feed pets undercooked or raw meat; Feed a well-balanced commercial dry food

Public Health
IOWA STATE UNIVERSITY*

**TO PREVENT ZOOONOSES YOU
MUST TAKE CARE OF YOUR
ANIMALS!**

Healthy Animals=Healthy Humans

REFERENCES

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Thank You