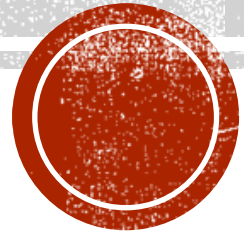
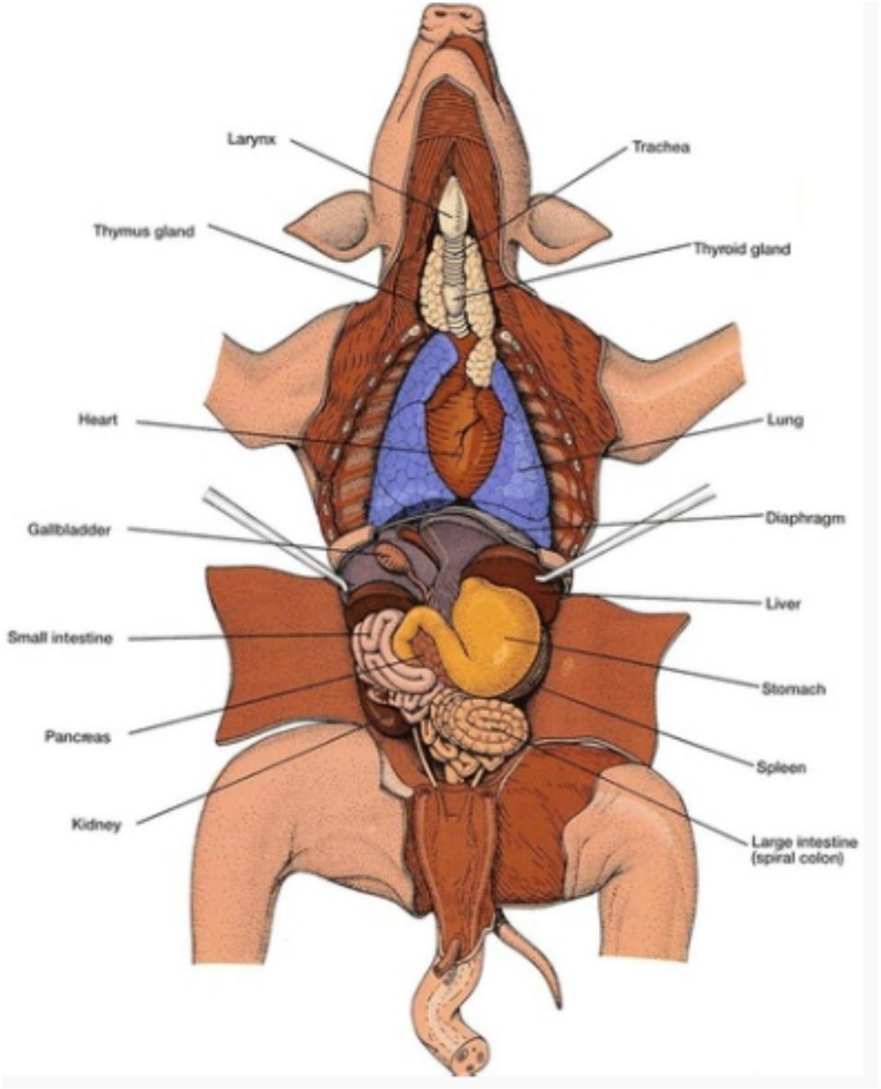
SWINE MEDICINE

Dr. Candice



SWINE ANATOMAY

- Monogastrics
- Omnivores
- Knowing normal anatomy and behavior is important
- External structures and behavior
- Internal structure appearance and location



https://www.minipiginfo.com/pig-anatomy-and-terminology.html

PHYSICAL EXAM PARAMETERS

- New Born
  Heart Rate: 200-250 bpm
  Respiratory Rate: 50-65 bpm
- Weanling
  - Heart Rate: 90-100 bpm
  - Respiratory Rate: 25-40 bpm
- Growers
  - Heart Rate: 80-90 bpm
  - Respiratory Rate: 30-40 bpm
- Finishers
  - Heart Rate: 70-80 bpm
  - Respiratory Rate: 25-35 bpm

PHYSICAL EXAM CONTINUED

- Adult pigs
  - Heart Rate: 70-80 bpm
  - Respiratory Rate: 13-18 bpm
- Rectal Temperature: 100-102.5 F
- Be consistent and systematic
  - Snout to Tail
  - Same way each pig/group
- Wear gloves for exam
- Boot covers highly recommend

SO WHAT IS NORMAL?

- As a Veterinarian your skill of observation is key in solving animal illness issues.
- Thorough History from producers is the first step….
- Your job is to guide producer through questions that can assist you in your exams and differential list
- Your producer knows their pigs, sees them daily and can pick up on subtle issue you lay lissnon anyone time visit or exam
- Before your visit or when you first arrive before you get to the animal you must get a thorough history

START YOUR INVESTIGATION

- Mapping area where pigs are and age groups within pens
- Questons for producer
  - Total pigs on property
  - How many sick
  - How many dead
  - Time frames
  - Ages and locations of ones that had died
  - Clinical signs
  - Previous treatment and results
  - Any recent dead within hours Need to be saved for necropsy or one showing the sickest signs that can be euthanized (last)

HISTORY COLLECTED NOW WHAT?

- LOOK, LISTEN AND WAIT
- Take some time here
- Look over the groups or pens
- Listen for coughing, sneezing other sounds
- Exam the feeders how they operate, watering system ventilation system
- Waste management
- Movement of the pigs
- Interaction or pigs with each other between groups or Fence contact
- Make notes and diagrams

NEXT STEP…CATCH THAT PIG

- Obtain vitals on groups members. Maybe not every pig but those effected and a few not showing clinical signs within th same group
- Start with healthy animals and move towards sickest via your group mapping.
- You do not want to be a vector to spread disease further
- Catching pigs can be done by various ways
  - Tighten the pen to squeeze animals together
  - use snares To immobilize the animal for the exam
  - Good old-fashioned jump on the pig and catch it
- Remenber ear protection!!!

BRING OUT THE DECEASED

- Necropsy is an invaluable resource in swine medicine
- Pathological changes in the body can direct you to your diagnosis and guide treatment
- Vital to know the changes diseases make within the body and overall anatomy of animal you are posting
- Animals that have been deceased for greater than 3 to 4 hours depending on the ambient temperature outside may not be useful.
- If a carcass that is not recently dead within several hours it may be better for the overall well-being of the herd to euthanize the sickest animal showing clinical signs.

DIFFERENTIAL LIST

- Sort out a list of possibilities of disease
- Amazing resource
  - Iowa State Swine disease manual
  - Multiple disease look the same and a rule in/out process may be needed if lab work and testing can not be performes

SAMPLE COLLECTION

- Live animals if sending tests to laboratory
- Restraint for good sample and less stress on you, your help and the animal
- Blood samples- ear veins, blind jugular stick
- Tissue for biopsy
- Necropsy tissues reserve a fresh set of tissues and a set preserved in formalin
- Fecal sample should not be forgotten
- Skin Scraping

PRE-WEANING DISEASE CONCERNS

- Issues concerning the Sow
- MMA Complex
- M: Mastitis
  - Inflammation of the mammary gland
  - Causes teat end injury: piglet bites, environment trauma {rough ground, object trauma scratching}
  - Poor environmental hygiene
- Mastitis may lead to no milk or low milk production and poor colostrum piglets need
- Clinical signs: swelling and heat of glands, off colored or thicken discharge

MASTITIS CONTINUED

- Solution
  - Cut fighting teeth
  - Change management practice
    - Removing feces and urine more frequently
    - Remove solid flooring
- Remove piglets and graft to another sow
- Place supplement feeders
- Treatment
  - Penicillin (300,000 IU)
    - 1 mL per 100 lbs (45 kg)
    - Twice daily
    - In the muscle, 18 ga 1.5 in needle

MASTITIS CONTINUED

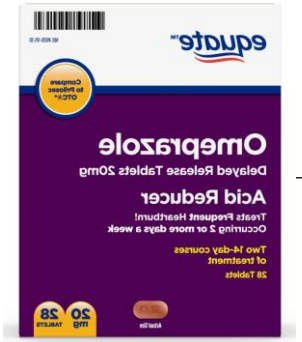
- Treatment
  - ***Excede
    - Stronger and longer lasting than penicillin cost higher but better results
    - 1 ml per 44 lbs (20 kg)
    - Inject near base of the ear
    - Side note: safe all sizes, labeled for repiratory disease:A. pleuropneumoniae, H. Parasuis, P. Multocida, S. Suis
  - Nuflor
    - 15mg/kg injected in the muscle of the neck
    - Repeat 72 hours
    - Also labeled for respiratory disease

MMA COMPLEX

- Second "M" stands for Metritis
  - Inflammation of the uterus
- Causes:
  - Retained piglets
  - Retained placenta
  - Bacterial infection for open system due to farrowing
  - Delayed farrowing
  - Too many arms in the pig
- Treatment
  - Uterine flush: 2-3 time a day
    - Hypertonic saline
    - Hydrogen Peroxide

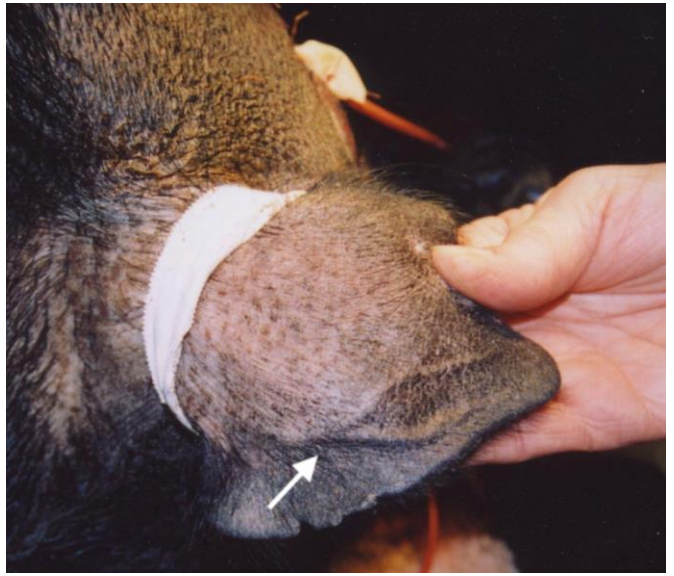
METRITIS CONTINUED

- Treatment
  - 1-2 liters of solution delivered intra-uterine
  - Oxytocin 10 IU every 3-4 hours
  - Antibiotics: Excede, Nuflor
- With decreased appettite
  - Sucralfate 3-5 pill twice daily
    - Coats stomach to prevent GI ulcers
  - Omeprazole 40 mg orally once daily to prevent ulcers
- NSAIDS
  - For pain and inflammation
  - Flunixin Meglumine 1 ml per 100 lbs (45 kg)



METRITIS

- IV fluids may be needed
- Hypertonic iv through ear vein or mediametatarsal
- Metritis can cause pain and irritation to sow and enable savaging of young.
- Crushing- due to piglet weakness



MMA COMPLEX

- Agalactia
  - Definition no milk production
  - The combination of conditions that challenge the sow, stops milk production
- No colostrum, no milk
- Piglets starvation, weakness, hypoglycemia
- Treatment
  - Underlying disease treatment
  - oxytocin

PIGLET ANEMIA

- All piglets have low iron reserves at birth
- Sows milk provides very little iron available to piglets
- Mipk provides 10-50 % of iron needs
- Iron is needed For red blood cells
- With rapid growth and increased blood circulation piglets need supplement
- Injectable*** oral powder supplement
- Complicating factors
  - Copper defiecncy
  - Vitamin E/selenium
- Easy fix 100-200mg iron 24-48 hours after birth

PIGLET ANEMIA

- Clinical signs
  - Weak, lethargic
  - Death at weaning

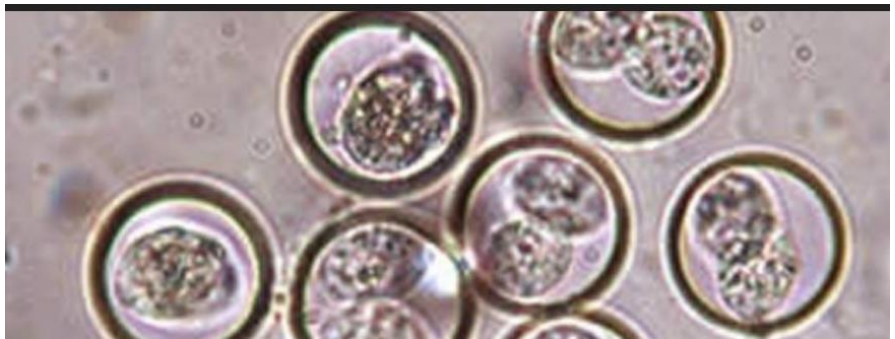
Necropsy

Pale tissues, edema in lungs and thin walled heart.

DIARRHEA

- Piglet scours causes rapid dehydration
- Hypoglycemia
- Death

- COCCIDIOSIS
  - Coccidia is a protozoal parasite that prevents fluid absorption at the level of the intestinal villa
  - Yellow watery, pasty/greasy diarrhea, often frank blood
  - Shivering
  - Arched back
  - lethargy



COCCIDIA

- Etiology: obtained from oral ingestion from cysts in fecal material
- Incubation 3-5 days
- Diagnosis:
  - Quick, cheap, simple
  - Fecal flotation
    - Obtain fecal sample pea to grape sized
    - Mix in test tube with zinc sulfate or sugar solution
    - Full to the top ad for a "dome"
    - Place cover slip
    - Rest for 10 min and exam un the microscope for cysts


NDC # 50989-098-29
OvaSol
FECAL FLOTATION MEDIUM
Containing Zinc Sulfate
NET CONTENTS: 2.9 lbs. (1.32kg.)
VEDCO
FOR ANIMAL USE ONLY
KEEP OUT OF REACH OF CHILDREN
DIRECTIONS
Testing Procedure

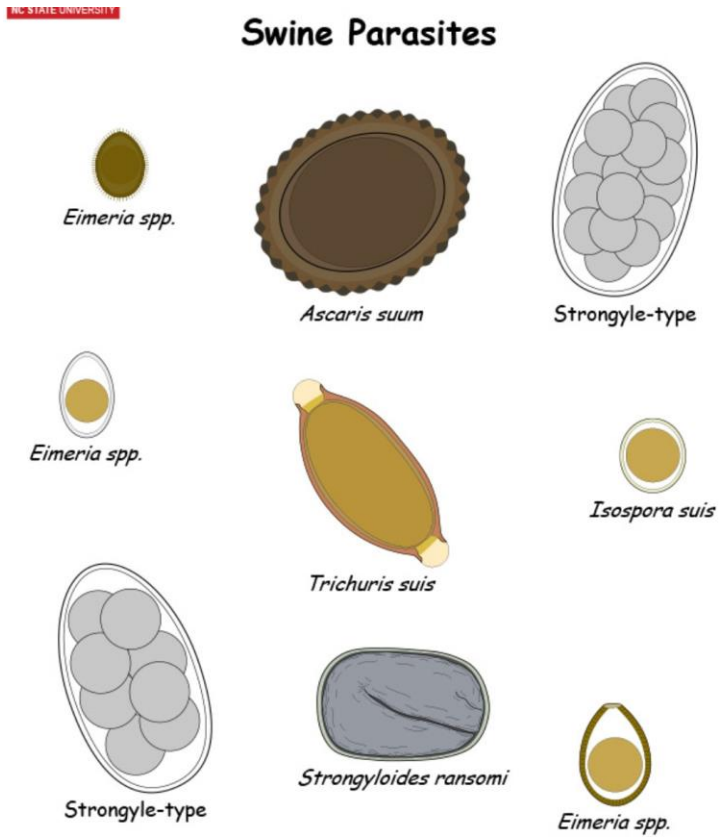

1 Gallon
VETone
Sugar-Med™
Solution
Sugar (Pre-Mixed)
Fecal Flotation Medium
Specific Gravity 1.27
For In Vitro Laboratory Use Only.
Keep out of reach of children.
VI 510147
Net Contents: 1 Gallon

COCCIDIA

- Treatment
  - Amprolium: 9.6% 1 mL per 12.5 kg orally once daily for 7 days
  - Totazuril: once dose orally (with feeding tube if needed) 20 mg/kg
  - retest fecal for negative in 2-3 weeks post treatment
- Control:
  - Environmental hygiene
    - Bleach clean
    - Remove fecal material
    - Decrease wood

QUICK LOOK ON THE MICROSCOPE

- Under examination of feces from fecal flotation the following parasites can be seen
- Round worms
- Whip worms
- Coccidia
- Hook worms



SKIN LESIONS

- External parasites
  - Ticks, fleas and lice
  - Can cause whelps on skin and secondary infections

  - Treatment: Ivermectin injections : 1 mL per 75 lbs (34 kg)
    - Repeat every 3 weeks for lice

LICE LESIONS

MANGE

Crusty, scaley skin, typically generalized.
Diagnosis: skin scraping, e sure deep and multiple spots
Treatment: ivermectin: 1 ml per 110 lbs (50 kg)

SKIN LESIONS

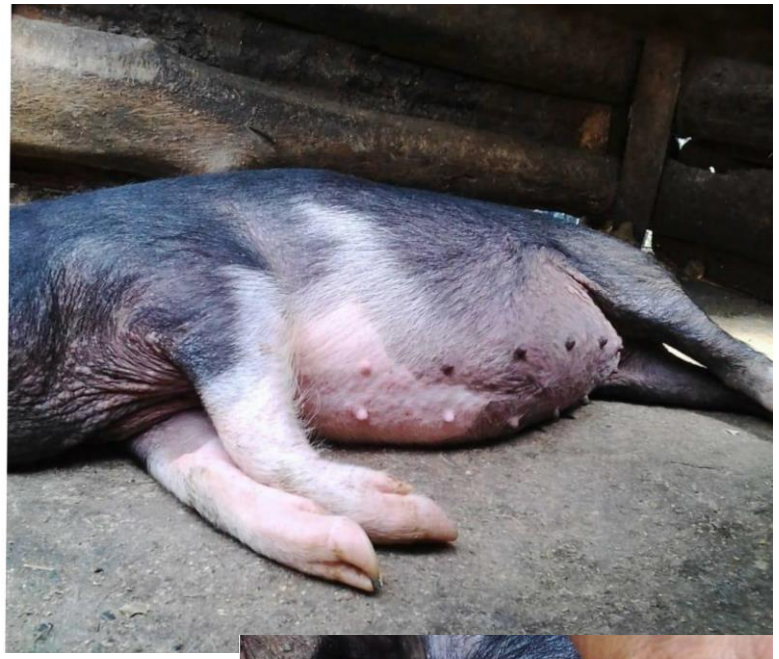
- Pityriasis Rosea
  - Dermatitis seen in 4-12 week old piglets
  - Raised reddened rings 1- 20 cm
  - Genetic
  - Typically grow out of condition
  - Pig hides
  - Secondary staph causing greasy pig is risk
  - Treatment only needed if staph is noted: by cytology under microscope or clinical signs
  - Medications: lime sulfer topically, penicillin excede

COURTESY OF DR. RANALD D. A. CAMERON.

SKIN LESIONS

- Contact Dermatitis
  - PIG SKIN IS SENSITIVE
  - Environmental factors
  - Hard Surfaces
    - Feces
  - Rule out mange with skin scrape

  - Treatment: clean environment
  - Dexamethasone 2-5 mg per pig daily



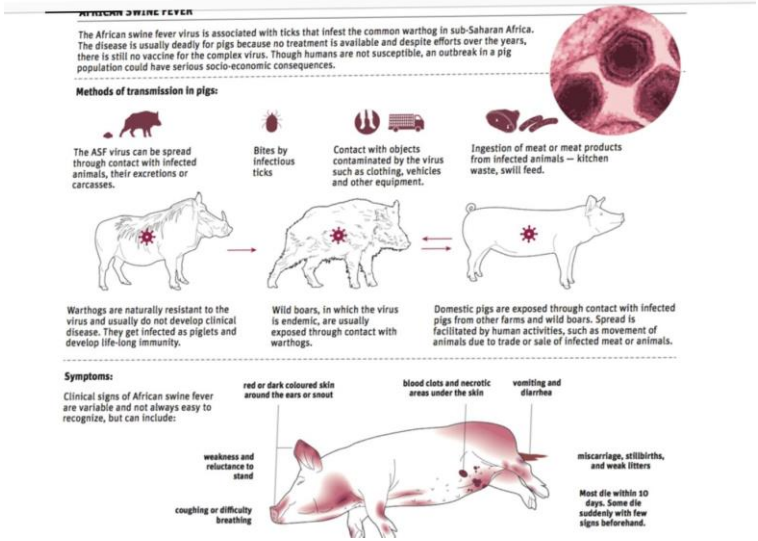
Needs skin scrape

Staph, forming

AFRICAN SWINE FEVER

History

Highly contagious viral disease first described in Africa in 1921. Reinfection rate and brake throughs have discouraged efforts in eradication. Importation limits on sign and sstoopingbthe feeding of waste food has aid in efforts to hault the disease.



AFRICAN SWINE FEVER

ASF is a large enveloped virus that with stand cook and hot temperature and remain in unprocessed tissue several weeks.
At room temperature virus has been infectious several months.
Life cycle of the virus includes the soft tick that takes a blood meal from a wart hog. However can be passed from pig to pig from bodily fluids and feces. Which includes saliva transfer. Pigs can remain shedding virus up to 1 month after contact

AFRICAN SWINE FEVER

Incubation 3-7 days within the host

Virus causes the body of the host to inflame blood vessels and cause bleeding inner the skin and within the body cavity

- High fever up to 42 C
- 5-10 days death
- Clinical signs include: abortions, lethargy, decrease appetite, Depression, vomiting, hyperemia: ears legs abdomen, bleeding from nose and rectum.
- No treatment available
- No vaccines
- Prevention aimed to prevent waste feeding and contact of infected swine

AFRICAN SWINE FEVER

- Images and information from Merck veterinary manual online