


Introduction to Poultry in Practice

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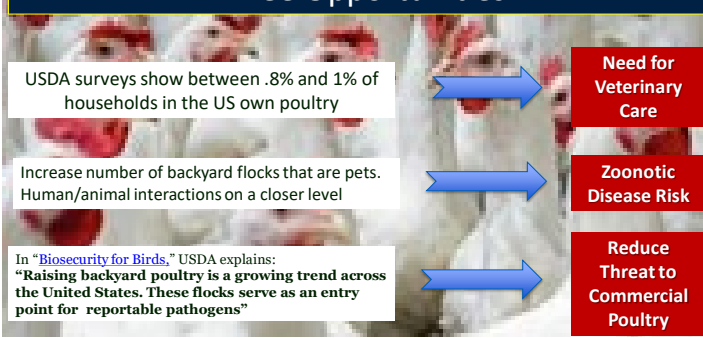
Super Fast Introduction to Poultry in Practice

1. Reasons to add poultry to your practice
2. Basic of regulations (local, state, fed, veterinary)
3. Common veterinary services for small flocks
4. Transporting Samples/Birds to Diagnostic Lab
5. Physical Exam – What to do/Handling/Anatomy
6. Primary Health Concerns





Reasons to Be a Poultry Friendly Practice Three Opportunities



USDA surveys show between .8% and 1% of households in the US own poultry


Increase number of backyard flocks that are pets. Human/animal interactions on a closer level

In "Biosecurity for Birds," USDA explains: "Raising backyard poultry is a growing trend across the United States. These flocks serve as an entry point for reportable pathogens"

Need for Veterinary Care

Zoonotic Disease Risk

Reduce Threat to Commercial Poultry



OPPORTUNITY – Need for Veterinary Care

If an owner purchases a chicken or duckling for \$1-\$5, will they be willing to provide for the cost of veterinary care?



This is not predictable.
Owners of chickens can have a profound emotional attachment to their birds.

Chicken Coops and Tractor Markets



OPPORTUNITY – Need for Veterinary Care

There are numerous suppliers of clothes, leashes, costumes, and chicken enrichment supplies




Please don't forget the Halloween costume controversy–

- The CDC did NOT state that chickens should not be dressed up in costumes, it advises owner to "handle them carefully to keep their family and chickens safe and healthy."

OPPORTUNITY – Lower Zoonotic Disease Risk

“Don't 'kiss' or 'snuggle' backyard chickens or you could get salmonella”, CDC warns
May 21, 2021



The slide features three photographs arranged in a triangular pattern. The top-left photo shows a woman in profile kissing a white chicken. The bottom-center photo shows a young child in a yellow shirt holding a brown chicken. The top-right photo shows a woman with blonde hair kissing a white lamb. The entire slide content is enclosed in a black border with a blue header bar and a dark blue footer bar.

OPPORTUNITY – Lower Zoonotic Disease Risk

Don't play chicken with your health


Since 2000, 70 Salmonella outbreaks have been linked to backyard poultry.

Number of Salmonella outbreaks per year

Year	Number of Salmonella outbreaks
2000	1
2001	1
2002	1
2003	1
2004	1
2005	1
2006	1
2007	1
2008	1
2009	1
2010	1

4,794 illnesses / 894 hospitalizations / 7 deaths

WASH YOUR HANDS
after handling backyard poultry
www.cdc.gov/features/salmonellapoultry



U.S. Department of Health and Human Services

Wild birds, especially waterfowl, are primary carriers for avian influenza.



Can carry the virus to small flocks with reduced biosecurity.
Owners may encourage contact with wild birds.



Small flocks and wild birds are primary source for commercial poultry
The virus is highly contagious.
Spread by debris/wind, equipment, visitors, etc

Low Pathogenic Avian Influenza (HPAI)

- Low pathogenicity avian influenza (LPAI) virus strains occur naturally in wild migratory waterfowl and shorebirds without causing illness. LPAI can infect domestic poultry, creating little or no signs of illness.
----- AVMA FAQs for Veterinarians, AVMA.org



UNTIL



5 MAY 2022
A deadly avian flu outbreak is accelerating its spread across the US, so far killing 37 million chickens and turkeys in 32 states.
The last major outbreak in 2014-15, which cost an estimated \$1 billion in damages.

Outline of a Poultry Disease Outbreak

California 2018-2020 Virulent Newcastle Disease

In May 2018, an owner brought several ill exhibition chickens to a **veterinary clinic** in southern California. The birds were displaying signs of virulent Newcastle disease (vND). Biological samples were collected from the chickens and sent the **California Animal Health and Food Safety (CAHFS) Laboratory** where vND virus was detected. The U.S. Department of Agriculture's **(USDA) National Veterinary Services Laboratories (NVSL)** confirmed vND in these birds on 17 May 2018.

Impact

2 years (5/2018-5/2020)


476 premises infected (backyard, exhibition, and commercial)

1.2 million birds euthanized

Economic cost \$\$

Virulent Newcastle Disease

- Sudden death / higher mortality
- Swelling around eyes and neck
- Respiratory -- Sneezing, gasping, nasal discharge
- Digestive -- Greenish watery diarrhea
- Nervous – Tremor, wings drooping, twisting of neck, circling, stiff



- If any type of poultry is infected with reportable
- IMMEDIATELY notify your State Department of Agriculture or the USDA (1-866-536-7593)
- ... per the Code of Federal Regulation

If you suspect a reportable disease, contact the office of your state department of agriculture and/or local USDA vet. Keep your state laboratory informed.



REGULATIONS

Flocks are governed by city, county, state and federal regulations

Local

- Local regulations can govern whether ownership is legal, permit type, type and number of birds allowed, coop construction, zoning
- These are the responsibility of the owner.
- Usually more an issue of property values and nuisance issues

However, it is illegal in most places to let your chickens run at large

In Quitman, Georgia it is specifically illegal to let your chicken cross the road




Regulations


State and Federal

- Protection of public health and agriculture industry
- If the chicks are purchased legally, products are consumed on premise, and the birds are not transported, AND no illnesses – no problems
- Transportation of birds across state lines requires a health certificate, testing

Licensed Veterinarians -- health certificates and treatments
To diagnose and treat poultry – good resources (FARAD website)

USDA Category II Accreditation (all animals)
to sign health certificates
treatments requiring a VFD (medicated feeds)

 Food Animal Residue Avoidance Databank


 Veterinarian's Guide to Residue Avoidance Management

SELECT SPECIES
Chicken are considered major species in the United States. Chicken are bred for their meat and eggs. Certain drugs are not for use in birds laying eggs intended for human consumption and are labeled as such.


SELECT SUB GROUP
all FDA approvals for chicken*

Laying hen classes:
replacement (layers)
egg layers
all laying hens

Not for hens laying eggs for human consumption:
broilers/fryers*
chicks
replacement (breeders)
excluding all layers*



VetGRAM HOME
FARAD Home
Egg Layers
Search
Pre-defined Searches
21 Approved FDA Drug Formulations



Bacitracin
Amprolium
Chlortetracycline
Erythromycin
Hygromycin
Meldane 2 - coumaphos
Proparacaine hydrochloride
Nystatin
Fenbendazole

©2019 Food Animal Residue Avoidance Databank

Layers -- 2022
Bacitracin
Amprolium
Coumaphos
Nystatin
Fenbendazole

REGULATIONS REGARDING TREATMENT --

All Poultry are Food Animals --- there is no exception for pets

GROUP I. Drugs with No Allowable Extra-Label Uses in Any Food-Producing Animal Species

CHLORAMPHENICOL
CLENBUTEROL
DIETHYLSTILBESTEROL (DES)
FLUOROQUINOLONE-CLASS ANTIBIOTICS
GLYCOPEPTIDES – all agents, including VANCOMYCIN
MEDICATED FEEDS
NITROIMIDAZOLES – all agents,
including DIMETRIDAZOLE, IPRONIDAZOLE, METRONIDAZOLE and others
NITROFURANS – all agents, including FURAZOLIDINE, NITROFURAZONE and others

GROUP II. Drugs with Restricted Extra-Label Uses in Any Food-Producing Animal Species

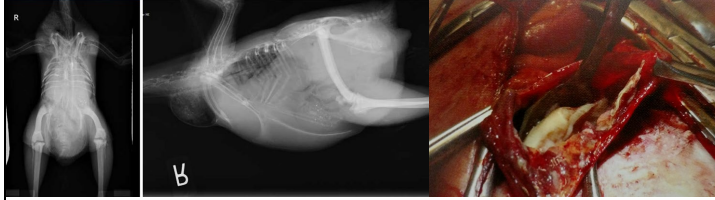
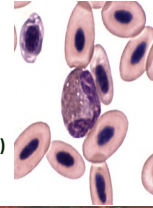
Cephalosporin – no ELDU involving unapproved dose, treatment duration, frequency, or administration route

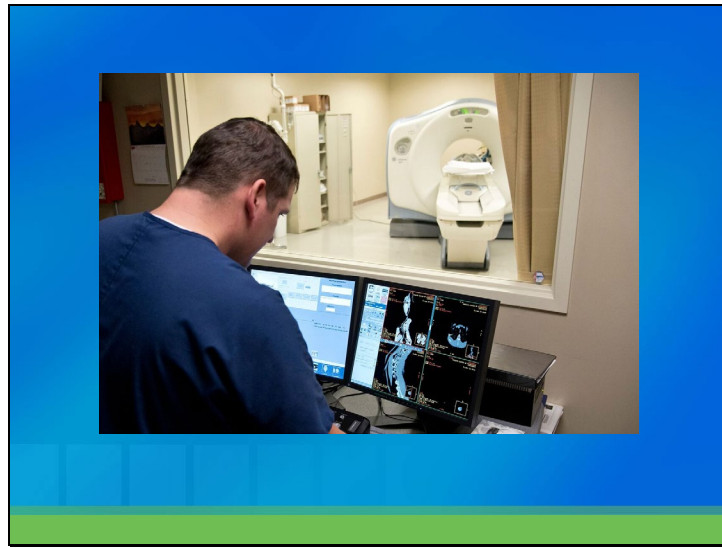
Treatment with Extra Label Medications

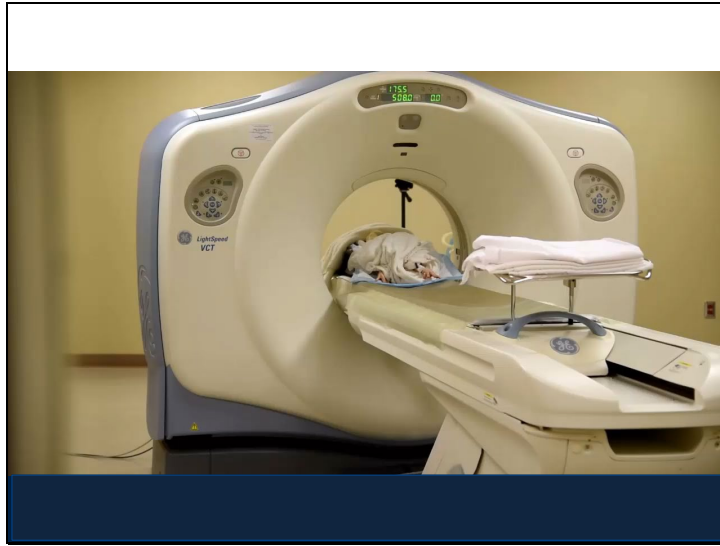
- Consider using a treatment and withdrawal time consent form.

Common Veterinary Services Provided to Poultry Patients

- Physical exam / Flock Evaluations
- Health Inspections
- Recognition/Diagnosis/Treatment
- Prescriptions
- Radiographs
- Ultrasound
- Surgery (Salpingohysterectomy, trauma repair, bumblefoot, fractures)
- CBC / blood chemistry







It usually starts with a phone call –

“ Hello, yeah, I have some chickens. I just bought them from _____ (source), and I quarantined them from my other chickens for _____ (length of time). Today, they have _____ (symptoms of your choice). Will you see them?”



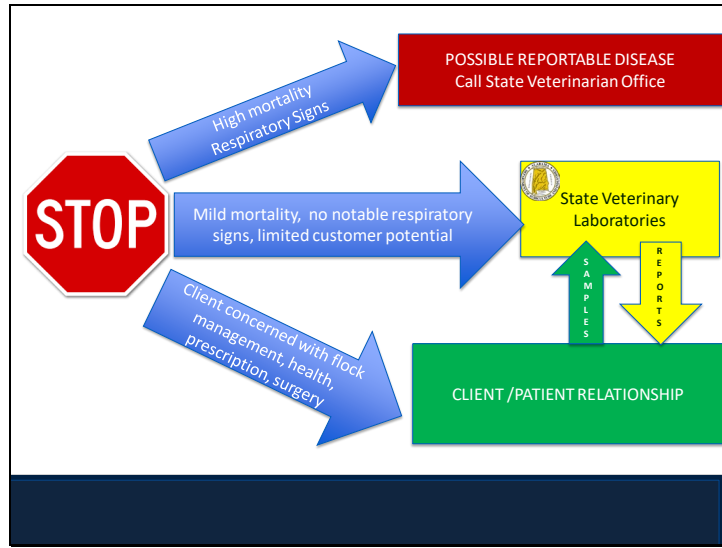
Don't just say "NO" to poultry

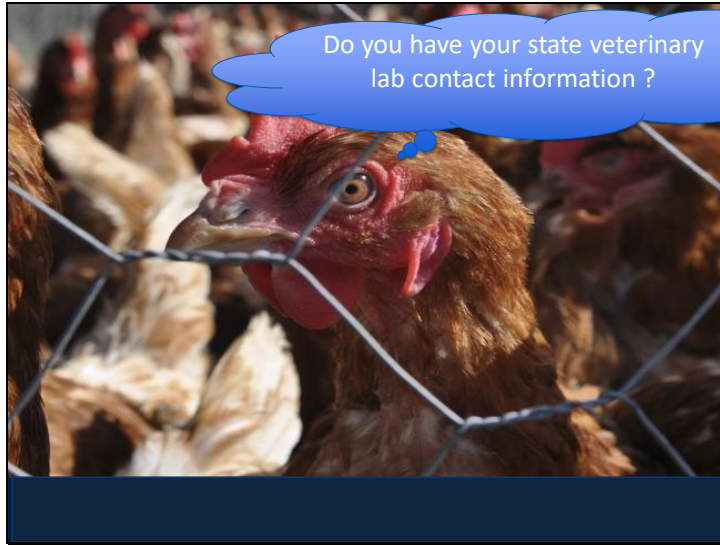
Ask a few questions --

- “What type of symptoms were those again?” Reason – are these compatible with a reportable disease
- “Have any died? How many?” Reason – high mortality may indicate a reportable disease
- “Where are the chickens located?” Reason – If they are across state lines, there are regulations
- “How many chickens (or other birds) do you have all together?” Reason – give an idea of the total picture

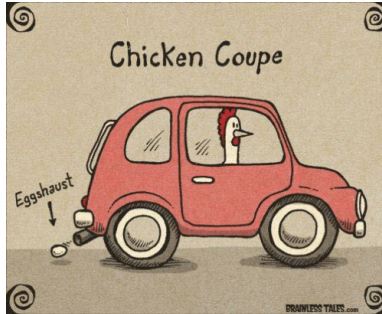
Consider --

- Reportable disease symptoms? High mortality? Respiratory signs?
- Can the birds be brought or mailed (deceased) to the lab ?
- Can the owner bring the birds into the clinic. (ask yourself, “Is this a reportable disease?)
- Can you make a farm call ?





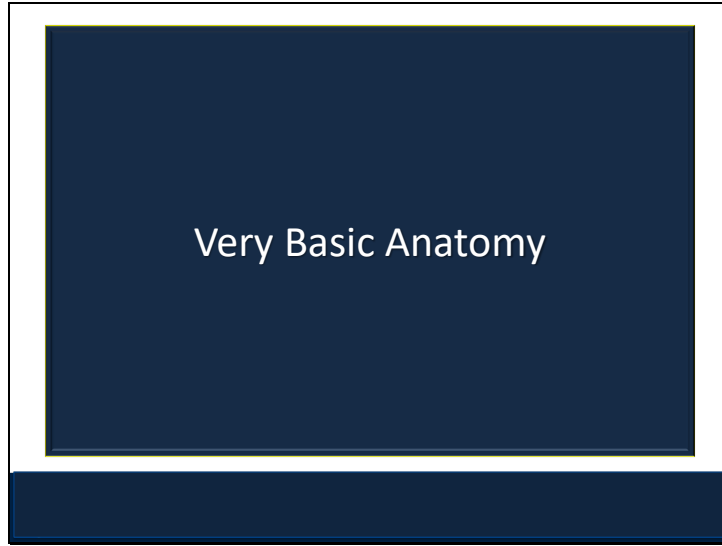
A quick note on transporting poultry

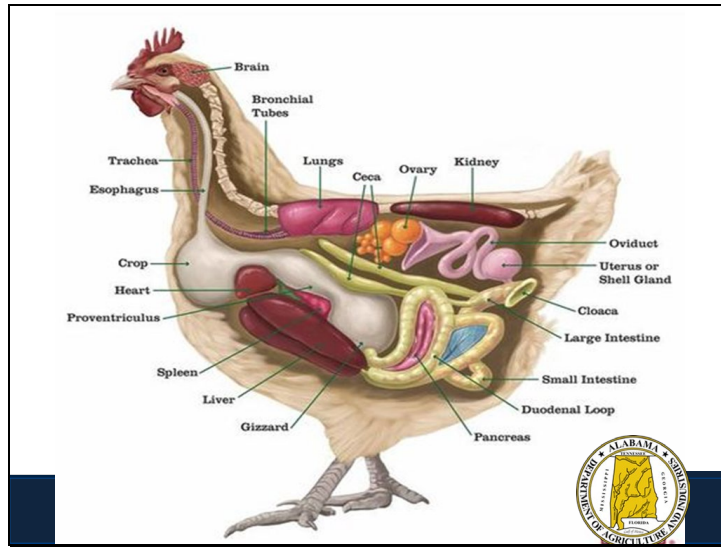


Her car is a free Range Rover.


All states (except Hawaii) will require that poultry being shipped across a state border come from flocks that either participate in NPIP (National Poultry Improvement Plan) OR follow the guidelines set forth for participation in the NPIP program. Some states require this for in state transport.







Unique Features of Normal Anatomy – Respiratory System

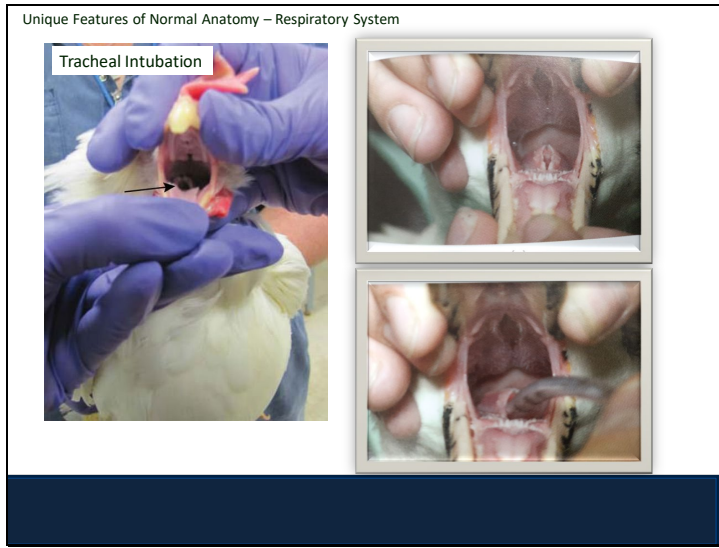


Respiratory Tract –

- Choanal Cleft in roof of mouth
- Lungs are located dorsal against the ribs and backbone
- Airsacs are located throughout coelomic cavity and extend into pneumatic wing bones
- Testing –
PCR – Non cotton, non wooden stick swab
Place in BHI broth tube OR RTT with a few drops of saline for VI & PCR
Send overnight

Choanal Cleft

This area is swabbed for respiratory disease PCR in most gallinaceous birds
Waterfowl – collect cloacal swab as well





Unique Features of Normal Anatomy – Respiratory Tract

A chicken's respiratory system is very complex

trachea (windpipe)

cervical air sac

lungs, shaped to fit around the ribs and spine

left caudal thoracic air sac

clavicular air sac

left abdominal air sac

left cranial thoracic air sac

Lateral view

Respiratory Tract –

- Choanal Cleft in roof of mouth
- Lungs are located dorsal against the ribs and backbone
- Airsacs are located throughout coelomic cavity and extend into pneumatic wing bones

Unique Features of Normal Anatomy – Gastrointestinal Tract

Gastrointestinal Tract

- Crop – storage of ingested food; allows food and water to mix
- Proventriculus – true stomach
- Ventriculus (Gizzard) – grinding – contains small stones (other items that do not pass through into the intestine)
- Duodenum – loop – pancreas is located in between
- Ceca – long and paired – breakdown of feed, absorption of water
- Cloaca – feces and urate excretion – exit via vent

The diagram shows a dissected bird's gastrointestinal tract. On the left is the crop, a large, sac-like structure. It leads to the proventriculus (true stomach), followed by the gizzard (ventriculus), which is a muscular organ used for grinding. The small intestine follows, with the pancreas located in a loop between the gizzard and the small intestine. The large intestine is shown as a long, thin tube. The tract ends at the cloaca, which leads to the vent. Labels include: Crop, Proventriculus, Gizzard, Small Intestine, Large Intestine, Cloaca, Vent, Pancreas, Postcrop Esophagus, and Proctodeum Esophageus.

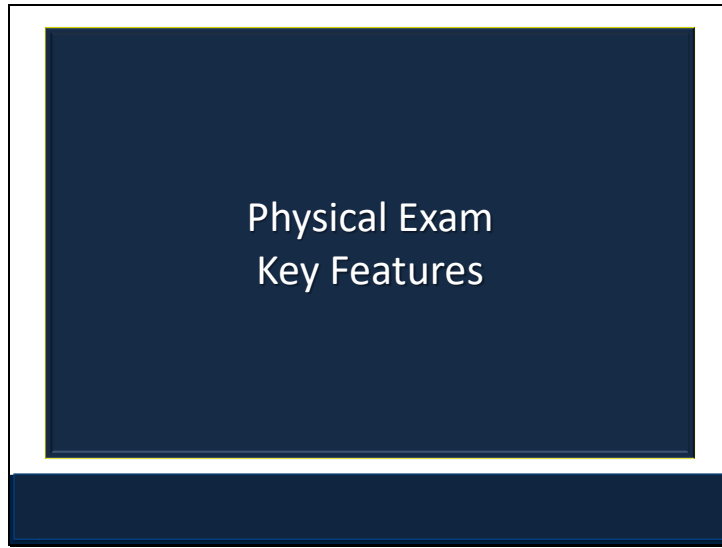
Proper ways to Hold or Restrain Poultry

Hand across back to restrain wings
Second hand to support weight just under crop
Do NOT compromise the abdominal movement



Appearance of a clean vent





Physical Exam

Before you lay your hands on the bird – assess its general appearance and behavior from a distance.

Stable

Color of wattles and comb

Appearance of vent

General energy level

Position of eyelids (half closed when not feeling well)

Temperature – 104- 107 F

Respiratory Rates – 15-30 rpm

Listen for gurgles, rales, wheezing

Heart rate up to 300 bpm

PLR

Menace reflex is reduced in chickens – corneal reflex





TYPICAL APPEARANCE OF A SICK CHICKEN



- *Pale comb & wattles
- *Hunched over
- *Head tucked back
- *Ruffled feathers
- *Sleepy/inactive/listless

THE CHICKEN CHICK
from The Chicken Chick

Body Condition Score –

Different between species
Different between breeds in a species

What is normal?

Evaluation of the amount of muscle on the keel bone for the type of bird

Meat breed chickens (broiler, broiler breeders), ducks, geese, turkeys

Layers breed chickens

Body condition score
In birds, avian body condition score is a most useful indication of prognosis. Simple avian body condition score is assessed by palpation of the pectoral musculature on either side of the keel (1 concave, Poor prognosis; 2 flat, 3 convex, elliptical, 4 semicircular, 5 beyond keel (M shape, cleavage, obese).

FIGURE 1. AVIAN BODY CONDITION SCORES

How to identify a hen in lay --

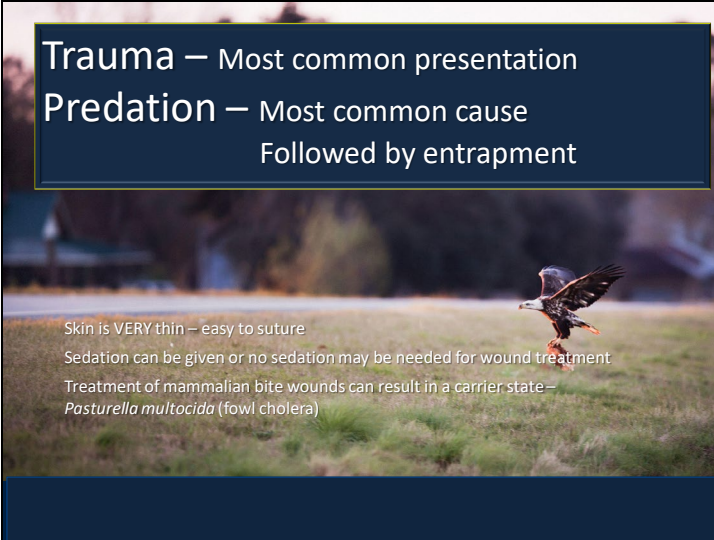
- *Head: eye, comb, general appearance
- *Vent: large, moist, bleached, pliable
- *Spread between pubic bones
- *Pubic bones thin, pliable



MOST COMMON HEALTH PROBLEMS IN SMALL FLOCKS

- 1) Trauma
- 2) Mismanagement that has stressed birds and caused a primary problem
- 3) Infectious Diseases
- 4) Nutrition -- including obesity in hens
- 5) Female reproductive issues
- 6) Toxic exposure





Trauma – Most common presentation
Predation – Most common cause
Followed by entrapment

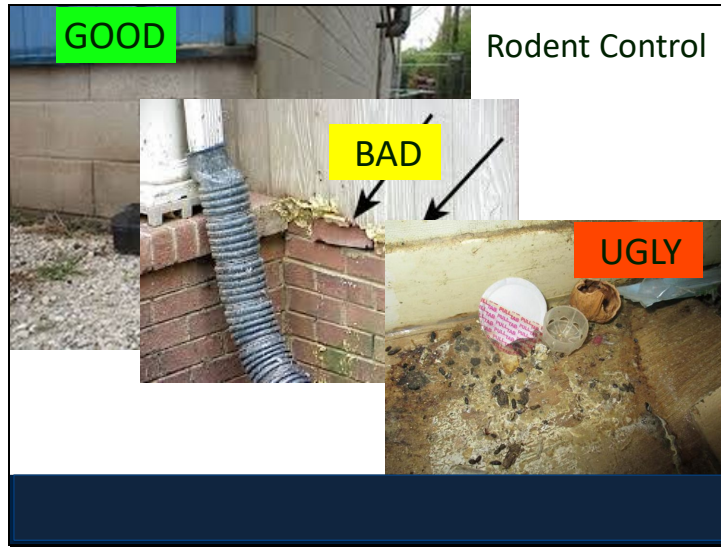
Skin is VERY thin – easy to suture
Sedation can be given or no sedation may be needed for wound treatment
Treatment of mammalian bite wounds can result in a carrier state –
Pasturella multocida (fowl cholera)











Evaluate feathering and footpad condition --

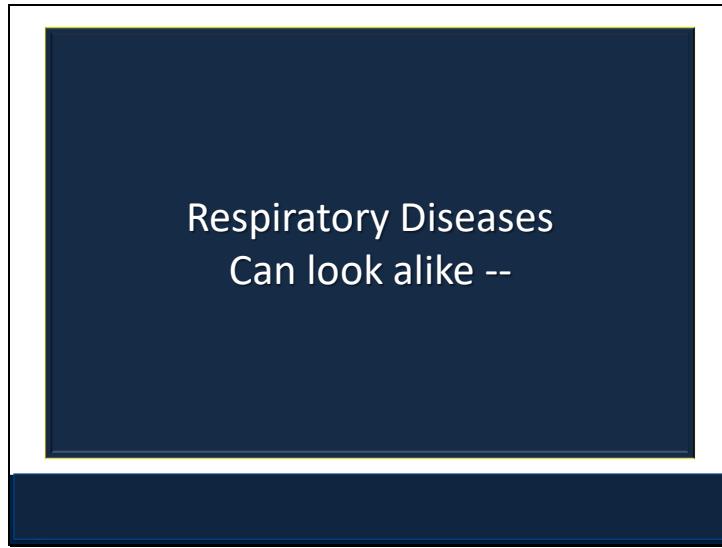
Feathering should be clean, no fecal material or litter, feathering over whole body
Wet flooring due to fecal material buildup can cause cutaneous burns.

Foot pads should be soft – without reddening, scabs or ulceration



Nutrition ---

General guideline –
If the problem does not appear infectious,
Collect a feed and water sample
Is it a commercially formulated food?
How long has it been at the farm?
Is it moldy? What does it smell like?



Chicken respiratory disease – clinical signs and lesions



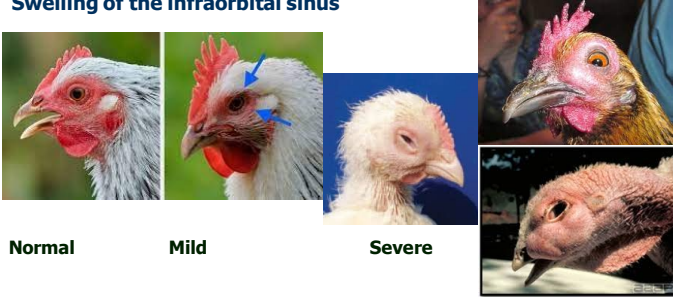
- Nasal and ocular discharges
- Wheezing, rales
- Sneezing, Coughing
- Gasping
- Head-shaking/scratching
- Mortality and morbidity, variable
- Conjunctivitis
- Sinusitis
- Rhinitis
- Laryngitis
- Tracheitis



1. Is this a reportable disease?
 - Duration
 - Mortality
 - Flock or Individual bird
2. Stabilize your patient
 - Oxygen rich environment
 - LOW STRESS



Swelling of the infraorbital sinus



Normal **Mild** **Severe**

Mycoplasma gallisepticum, Infectious coryza, Infectious bronchitis, Newcastle disease, Avian influenza, Infectious laryngotracheitis....partial list

Respiratory Disease - General Differentials

Avian Influenza *

Newcastle Disease (endemic and exotic forms) *

Mycoplasma (MG, MS, MM (turkey)

Infectious Bronchitis (IBV)*

Laryngotracheitis (LT)* (lifetime carrier)

Infectious coryza (*Avibacterium paragallinarum*)* (lifetime carrier)

Avian Pox (lifetime carrier)

Escherichia coli

Pasteurella multocida (lifetime carrier)

Aspergillosis

Gapeworm (*Syngamus trachea*)

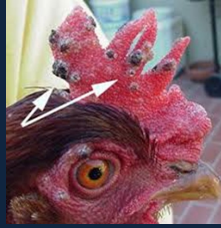
* - swab for PCR diagnostics at state lab

Ammonia from poor hygiene

Avian Pox


Two Clinical Forms

- DRY – CUTANEOUS
 - Cutaneous lesions (black scabs)
 - On unfeathered parts of bird
- Wet – TRACHEA/CHOANA
 - Oral diphtheritic lesions -- can look like ILT
 - Associated with mortality




Samples to collect :

- A) Birds or samples to lab
- B) Choanal Swabs in BHI or drops of saline in RRT
 - Five to Six swabs per tube
 - If there are multiple species/do not mix (Waterfowl – cloacal swab)
- C) Serum
- D) Send head with sinus intact (BEST) or Sinus swabs for bacterial culture
 - Take immediately to the lab or send overnight on ice



Avian Pox – Wet Form



Differentiate
ILT, Pox, other lesions
by histopathology

FieldCaseStudy.com

EEEP

The slide features three photographs. The top-left image shows a close-up of a bird's mouth with red, inflamed lesions. The top-right image shows a bird's mouth with a large red 'X' overlaid, indicating a specific condition. The bottom-center image shows a bird's head with yellow, crusty lesions on its beak and face. The text 'Differentiate ILT, Pox, other lesions by histopathology' is located in the bottom-left corner of the slide area. The website 'FieldCaseStudy.com' is in the top-right, and 'EEEP' is in the bottom-right.

Infectious Laryngotracheitis - ILT

Physical Exam OR Necropsy Findings ---

- Clinical Signs
 - Hemorrhagic Tracheitis
Frank blood in the trachea, bloody mucus or plugs,
COUGHING UP BLOOD
 - Cheesy plugs in trachea or larynx
 - Differentiate from "Wet" or Diphtheritic Pox



Aspergillosis

Brooder Pneumonia

Aspergillus fumigatus

Moldy, wet feed or bedding
Mold on hatching eggs or incubator

Diagnose
Necropsy / culture of lungs or airsacs

Treatment – expensive/ineffective
Remove mold source; clean and disinfect coop



Supportive treatment

- Keep warm (70F) and quiet
- Easy access to water and food
- Electrolytes with vitamin supplementation
- If not eating – consider tube feeding
- Treat secondary bacterial infection
- Pox – Separate birds with scabs /consider vaccination

Vaccinate any new birds that come to property

- **ILT – Leave birds together consider vaccination**

Vaccinate any new birds/birds should never leave property





Coccidiosis –

Younger birds (2-15 weeks) or immunocompromised (stressed)
Loose droppings / bloody droppings / weak birds / death
Fecal floatation or intestinal scraping (necropsy)
Treatment – Amprolium

Clostridial Disease -

Various ages, may occur in conjunction with coccidiosis
Loose droppings / bloody droppings / weak birds/ death
Lesions seen in intestine – necropsy
Treatment – Bacitracin



