Veterinary Needs of the Growing Population of Backyard Chickens: *Are You Prepared?*

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**Introduction**

**Increasing population of urban chicken “farms”**
- Origin of food knowledge
- Welfare issues
- Hobby
- Values to children

**Need for Veterinary Care**
- Small flocks → Pets
- All have names
- Willingness to bring in to clinic for care
- Still want to eat eggs
- Many vets will not see chickens
- Myriad websites started by owners
  - Some good, some bad information

**Where to Begin.....**
- Be familiar with chickens in general
- Be familiar with basic husbandry and Biosecurity
- Be familiar with common chicken diseases
- Be familiar with diagnostics and treatments
- Be familiar with medication restrictions
- Evaluate if needed treatment and use of birds are compatible
- Be prepared to euthanize if indicated
- Necropsy familiarity, collection of dx samples
- Disposal issues
- Know who to contact

**The Chicken**
- Comb
- Ear lobe
- Wattles (roosters)
- Crop area
- Vent area
- Shank
- Spur

**Inside the Mouth**
- Choanal Slit – on roof of mouth
  - Common site for culture
- Papillae
- Tongue

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Inner Anatomy
- Thymus
- Esophagus
- Crop
- Lungs
- Liver
- Proventriculus
- Ventriculus
- Spleen
- Follicles
- Kidney
- Pancreas
- Duodenum
- Cecal pouch
- Cloaca
- Bursa
- Oviduct

Husbandry
- Space to scratch
- Plently of clean fresh food and water
- Protection from weather and predators
- ENVIRONMENT, FOOD & WATER – THE most common causes of disease issues
- Must follow city ordinances if in the city limits

Biosecurity
Protecting your flock from diseases and prevention of disease spread

The Egg
- Air cell (large end)
- Amnion
- Allantois
- Albumen (small end)
- Yolk Sac
- Germ

Basic Handling
- Clean nests
- Collect frequently
- Refrigerate ASAP
- To wash or not to wash – if dirty, discard
  o > nickel-size area of dirt

Common backyard chicken diseases

Common diseases
- Trauma from predators
- Lameness
- Crop issues
- Diarrhea/Pasted vent
- Reproductive issues
- Respiratory
- External parasites
- Intestinal parasites
- Fowl Pox
- Sudden Death
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Trauma
- Predators
  - Dogs, cats
  - Raccoon, skunk, fox
  - Hawks, Owls
- Accidents
  - Foot stuck in slats
  - Horse steps on bird

Lameness
- Bumblefoot
  - Callus on bottom of foot
  - Deep cellulitis
- Arthritis
  - Bacterial, Viral
  - Age
- Marek’s Disease
  - Herpes virus
- Trauma
  - Fracture, strain, laceration, etc
- Toxin
  - Aflatoxin
  - Frostbite
- Nutritional
  - Vitamin D def (Rickets)
  - Riboflavin def
  - Ca/P imbalance

Bumblefoot
- Very common lesion
- Wet bedding
- Rough grounds
- Overweight bird
- High perches

Lameness - general
- Not walking or limping
- Leg may be out to the side
- Marek’s disease can have a very similar presentation
- Joint with excess fluid

Crop Issues
- Crop impaction
  - I often find lots of straw in these impactions
  - Could be a local block
  - Could be anywhere in the intestinal tract
- Sour crop
  - Ileus
  - Antibiotic use

Palpation of the Crop
Sits to the right side of the neck
Intestinal Tract
- Mouth
- Esophagus
- Crop
- Distal esophagus
- Preproventriculus
- Ventriculus
- Small Intestine
- Cecal pouches
- Large intestine

Gizzard (Ventriculus)
- Lots of obstructions found here in my experience
- Where SI exits the gizzard

Diarrhea/Pasted Vent
- Diarrhea
- Excess urine
- Stress
- Disease
- Feed issue
- Water issue
- Too hot

Reproductive issues #1 cause for calls
- Abnormal Eggs
- Egg bound
- Not laying
- Ascites
- Cancer
- Infection
- Nutrition
- Obesity

Egg Bound
- These are egg layers
- Be cautious about medications being used
- If O tells you he won’t eat the eggs, he is lying!
- Oviduct sits to the left within cloaca

Fixing a Prolapse
- I do this with no anesthesia
- It does hurt a bit but these are egg layers that wish to continue
- It’s just the needle poke that hurts – I’ve tried a bit of lidocaine gel but doesn’t seem to help

Respiratory Issues – BEWARE!!
- Periorbital swelling
- Sneezing
- Mucus
- Avian Influenza, NDV Bronchitis, ILT, Mycoplasma, Coryza, Bordetella, E. coli...
- Rales
- Dyspnea
- Blood discharge
Parasites - Internal
- Roundworms
- Tapeworms
- Cecal worms
- Gape worms
- Coccidia

External parasites
- Sticktight fleas
- External Parasites - Mites
- Scaley Leg Mites - *Knemidokoptes*
- Red Mites - *Dermanyssus gallinae*

Fowl Pox
- Very common
- Carried primarily by gnats and mosquitos
- Virus – no direct treatment
- Supportive care
- Vaccine available

Sudden Death
- Fatty liver disease
  - Bleed out into abdomen
  - Most common in hens
- Pasteurellosis
  - Carried by rodents, cats
- Heart attack
  - Most common in broilers
  - Growth too rapid
- Reportable diseases
  - Avian Influenza, vND

Diagnostics
- CBC, Chemistry screen – not as commonly used in chickens as in other species but can be helpful
- Radiographs – the next best thing to necropsy in my opinion
- ELISA and other tests for serum
  - Mycoplasma
  - Salmonella
  - Infectious bronchitis
  - Reovirus
  - Newcastle disease
  - Infectious Bursal Disease
  - Others
- PCR testing
  - Mycoplasma
  - Avian Influenza and Exotic Newcastle
  - Others
- Culture and Sensitivity or MIC
  - One of my most commonly done diagnostics
- Necropsy
  - Best done on a fresh specimen
If a bird passes away and O calls you, have them dip the body in cold soapy water to cool down the body.

Body heat causes more rapid breakdown of internal organs.

**If Reportable Disease is Suspected**
- Call your state veterinarian for further instructions! Make sure you have their number in your phone contacts.
- Call if you are not sure. Especially if you have a lot of sick or dying birds in a flock with no other explanation.
- Other “explanations” could be:
  - Closed up in a hot house (like a dog in a car)
  - Known toxin exposure, e.g., rat poison

**Other Issues to Consider**

What do you do when a bird must be eliminated?
- Illness
- Crowing
- Fighting
- Not producing
- Overcrowding
- Over the limit
- No longer want birds

**Treating backyard chickens**

**Treatments**
- Very limited due to “Food Animal” status
- Preventive Care is a must
- Supportive Care is vital – fluids are your best friend 😊
- Think WWOD? (What Would Organics Do)
- Chickens are considered “major species”, as are turkeys
- If you need to treat, ALWAYS contact [FARAD.org](http://fard.org) (Food Animal Residue Avoidance Database) for withdrawal time recommendations!!!
- NEVER use the restricted medications. These include fluoroquinolones and cephalosporins. Yes, that means you CANNOT use Baytril!

**Extra-label Drug Use in Food Animals**
- Extra-label use is limited to circumstances when the health of an animal is threatened, or suffering, or death may result from failure to treat.
- Extra-label use to enhance production is prohibited.
Drugs Prohibited for use in Food Animals

§ 530.41 Drugs prohibited for extra-label use in animals. (a) The following drugs, families of drugs, and substances are prohibited for extra-label animal and human drug uses in food-producing animals:

(1) Chloramphenicol;(2) Clenbuterol;(3) Diethylstilbestrol (DES);(4) Dimetridazole;(5) Ipronidazole;(6) Other nitroimidazoles;(7) Furazolidone.(8) Nitrofurazone.(9) Sulfonamide drugs in lactating dairy cattle (except approved use of sulfadimethoxine, sulfabromomethazine, and sulfaethoxypyridazine);(10) Fluoroquinolones; and(11) Glycopeptides.(12) Phenylbutazone in female dairy cattle 20 months of age or older.(13) Cephalosporins (not including cephapirin) in cattle, swine, chickens, or turkeys:

(i) For disease prevention purposes;(ii) At unapproved doses, frequencies, durations, or routes of administration; or(iii) If the drug is not approved for that species and production class.(b) The following drugs, families of drugs, and substances are prohibited for extra-label animal and human drug uses in nonfood-producing animals: [Reserved] (c) [Reserved] Code of Federal Regulations / Title 21 - Food and Drugs / Vol. 6 / 2013-04-01371

(d) The following drugs, or classes of drugs, that are approved for treating or preventing influenza A, are prohibited from extra-label use in chickens, turkeys, and ducks:(1) Adamantanes.(2) Neuraminidase inhibitors.


From the Code of Federal Regulations

AMDUCA

The regulations describe the conditions under which FDA approved drugs can be used in a manner inconsistent with the approved labeling as long as such use is by or on the lawful written or oral order of a licensed veterinarian within the context of a Veterinary-Client-Patient Relationship (VCPR). This regulation only applies to FDA approved drugs and the use must be therapeutic in that the animal must be sick or might die if not treated, and there needs to be a valid veterinarian client patient relationship. For more details refer to the 21CFR 530.

Extra-label drug use in Food Animals

Extra-label use of drugs may be considered by food animal veterinarians only when:

1. There is no approved new animal drug that is labeled for such use and that contains the same active ingredient in the required dosage form and concentration, except where a veterinarian finds, within the context of a valid veterinarian client patient relationship, that the approved new animal drug is clinically ineffective for its intended use.
2. Before prescribing or dispensing an approved new animal or human drug for an extra-label use in food animals, the veterinarian must:
   - Make a careful diagnosis and evaluation of the conditions for which the drug is to be used;
   - Establish a substantially extended withdrawal period prior to marketing of milk, meat, eggs, or other edible products supported by appropriate scientific information, if applicable;
   - Institute procedures to assure that the identity of the treated animal or animals is carefully maintained; and
   - Take appropriate measures to assure that assigned time frames for withdrawal are met and no illegal drug residues occur in any food producing animal subjected to extra-label treatment.

Using Non-Food Animal or Human drugs in Food Animals, e.g., Meloxicam

The following additional conditions must be met for a permitted extra-label use, in food producing animals, of an approved human drug, or of an animal drug approved only for use in animals not intended for human consumption:
   - Such use must be accomplished in accordance with an appropriate medical rationale; and
   - If scientific information on the human food safety aspect of the use of the drug in food producing animals is not available, the veterinarian must take appropriate measures to assure that the animal and its food products will not enter the human food supply.
   - Extra-label use of an approved human drug in a food producing animal is not permitted if an animal drug approved for use in food producing animals can be used in an extra-label manner for the particular use.

Treatment: Extra-label Drug Use
   - Stick with labeled products if possible
     - You can usually find these at local feed stores
     - Stay away from the sulfas in layers – longer w/d times needed
   - If you go off label, try to stay with the same drug classes as those in the products labeled for other poultry use
   - Topical products are not excluded from needing w/d times
   - Silver sulfadiazine is considered a sulfa so try to avoid
   - My first antibiotic if a pill is needed = Amoxicillin
   - Only treat those that are ill (under most circumstances)
   - Liquids can be mixed with food or put on bread
   - My go to dewormer is fenbendazole, 25 mg/kg SID x 3 d
     - Will slow or stop egg production
**Euthanasia and Disposal**

**AVMA approved euthanasia methods**

**S3.4 Poultry**

Euthanasia methods for poultry (domesticated birds used for egg, meat, or feather production [e.g., chickens, turkeys, quail, pheasants, ducks, geese]) include gas inhalation, manually applied blunt force trauma, cervical dislocation, decapitation, electrocution, gunshot, captive bolt, and injectable agents. Where appropriate, additional comments are included to address physiologic differences among avian species, variations in environment, and the size or age of birds (*AVMA Guidelines for the Euthanasia of Animals: 2013 Edition*).

**Field Euthanasia**

- I usually do cervical dislocation but I am very good at it — if you aren’t, don’t do it.
- May offer to take back to clinic for euthanasia
- Can use drugs if you have them to use outside your clinic

**In-Clinic Euthanasia**

- My recommendation
- Ketamine, Telazol or gas to immobilize
- Euthanasia solution IV in the wing vein

**Disposal**

What do you do with the bird once it’s been euthanized?

- **Cremation/Incineration** — most folks don’t have this option
- **Trash** — for a few birds, this is what most urban growers do
- **Composting** — good option if no drugs have been used
  - If bird was otherwise healthy and no drugs were used, eating them is an option, e.g., roosters
- **Burial** — if drugs have been used, make sure to bury deep enough so other pets/wildlife can’t get access.

**Disposal issues**

Serious repercussions may occur when veterinary health professionals who should be well-informed about the necessity for proper disposal of animal remains fail to provide it, or fail to inform their clients how to provide it, whether there was intent to cause harm or not (*AVMA Guidelines for the Euthanasia of Animals: 2013 Edition* - 138,139).
Recommended References

- Avian Disease Manual, AAAP
- Storey’s Guide to Raising Chickens, Gail Damerow
- AVMA.org for drug use information
- FARAD.org to find withdrawal times
- FDA animal drugs
- msucares.com (Mississippi State University)
- MANY other university/college and state websites
- MANY individual websites – use caution

My contact information (I prefer e-mail, if possible)

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