Zoo Medicine

* Responsibilities
  + Animal shipment coordination
    - Reasons for animal movement
    - Coordination between zoos
    - Coordination with local regulations
    - USDA Accreditation
    - Pre-shipment testing
  + Quarantine Program
    - 30-90 days
    - Arrival exams
    - Parasite screenings
    - Full diagnostic exams
      * Physical exam
      * Bloodwork
      * Infectious Disease Testing
      * Diagnostic Imaging
  + Preventative Care
    - Every animal at zoo has scheduled physical exams (typically annual)
    - Vaccinations
    - Parasite control
    - Routine diagnostics
    - Contraception – Reversible so animals can still be part of breeding pool
    - Nutrition
    - Examples:
      * Non-Domestic Felids
        + Exams – every 1-2 years
        + Dental care
        + Vaccinations

Panleukopenia, Rhinotracheitis, Calicivirus

Rabies

Canine Distemper

* + - * + Routine lab tests and imaging
        + Disease testing – FeLV, FIV, Coronavirus, Toxoplasmosis
      * Great Apes
        + Exams – every 2-3 years
        + Dental Care
        + Cardiac Evaluation
        + Routine sampling and imaging
        + Vaccinations – Rabies, Tetanus, Influenza, MMR
        + Disease Surveillance:

Hepatitis A, B, C, Measles, Herpes simplex 1, 2, Respiratory Syncytial virus, Epstein Bar

* + - * Other Unique Species Considerations
        + Meerkats

Have very elaborate social structure

If single meerkat is removed for exams and later put back, the group may attack it

Must be examined all at once

* + - * + Penguins

Exams done in drained penguin pool

All penguins in pool and water is drained with them inside

All exams done in the same day

* + Training
    - Animals can be trained to perform certain behaviors that make physical exams easier
    - Certain exams that could be skewed with anesthesia can be done while the animal is awake
    - The less an animal needs to be anesthetized, the better
    - Can be used to do ultrasounds, blood pressure measurements, blood sampling, etc.
  + Anesthesia
    - Mainly done on larger animals
    - Fish can be anesthetized using a powdered anesthetic mixed into water that is pumped over the gills
  + Veterinary Services
    - Addressing Illness or Injury
    - Pathology – Necropsy
  + Animal Welfare in Zoos
    - Physical Well Being
      * Appropriate and safe environment
      * Health Care
      * Nutrition – food and water
    - Five Freedoms:
      * Freedom from hunger and thirst
      * Freedom from discomfort
      * Freedom from pain, injury, and disease
      * Freedom to express normal behavior
      * Freedom from fear and distress
    - Five opportunities to thrive (Replaced Five Freedoms):
      * Opportunity for a well-balanced diet
      * Opportunity to self-maintain
      * Opportunity for optimal health
      * Opportunity to express species-specific behavior
      * Opportunities for choice and control
  + Education
  + Administration
    - Exhibit Design
    - Policy development and review
    - Protection of human health
    - Outreach