


Vaccination During Animal Disease Emergencies

*Overview
Basic Mechanics*



Vaccines in Animals

- Disease prevention intervention
- Regulated by the U.S. Department of Agriculture, Center for Veterinary Biologics
 - Veterinary biologics for commercial use must be produced at a USDA-approved establishment, and be demonstrated to be pure, safe, potent, and efficacious


National Veterinary Stockpile

- Established through HSPD 9
- Countermeasures for damaging animal diseases
- Deployment within 24 hours



Types of Vaccines

- Types
 - Modified live vaccines (MLV)
 - Killed inactivated vaccines
- Withdrawal times
- Use determined by
 - Disease
 - Species
 - Vaccine availability
 - Approval for use




Vaccine Administration

- Single use disposable syringes
- Automatic multi-dose syringes
- Bottle-mount syringe (automatic self-filling syringe)
- Parenteral
 - Intramuscular
 - Subcutaneous
- Intranasal
- Needle-free injection
- Ocular
- Oral
- Spray/topical

VACCINE HANDLING

Maintaining a Cold Chain


- Stays within appropriate temperature range
- If not...
 - Loss of potency or effectiveness
 - Changes not visually apparent
- Refrigeration, freezing
 - Avoid freeze-thaw cycles
- Avoid light



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Vaccine Storage Units


- Dedicated appliances to store vaccines
- Avoid door, drawer
- Limit door opening
- Monitor temperatures
- Secure power supply



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Diluents

- May be stored separate from vaccine
- Guidelines for reconstitution
- Diluents are NOT interchangeable
 - Between vaccine types
 - Between manufacturers
 - Between lots



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Maintaining Sterility in Multi-Dose Vials

- Do not remove rubber stopper
- Antiseptic before piercing
- New needle before piercing
- Do not submerge vial into melted ice/water
- Label when opening/reconstituting

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Receiving Vaccines

- Inspect immediately upon arrival
 - Signs of physical damage
 - Expiration date
 - Sufficient diluent included
 - Cold chain maintained

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Transporting Vaccines

- Maintain cold chain
- Diluents should travel with corresponding vaccines
- Note packing time
- Check for damage
- Expiration date



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If the Cold Chain is Broken

- Any indication that a proper temperature has not been maintained:
 - Mark the vaccine “DO NOT USE”
 - Contact supervisor or other authority for further instructions
 - Do NOT immediately discard the vaccine unless directed to do so

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Vaccination Strategies During an Outbreak

- Dependent upon
 - Scope of the outbreak
 - Objectives
 - Population at risk
 - Nature of the disease
 - Resource availability
 - Geographic considerations
 - Trade restrictions
 - Resource availability
- Suppressive vs. targeted vaccination
- Depopulation




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PREVENTING DISEASE TRANSMISSION DURING VACCINATION

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Preventing Disease Transmission During Vaccination

- Biosecurity
 - Wash hands
 - Wear gloves
 - Use new needle
 - Disinfect reusable equipment
 - Dispose of trash on-site
 - Wear disposable shoe covers/boots



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Record Keeping

- Individual and/or group animal IDs
- Name, address of animal owner
- Species, age, sex, breed of animals
- Date of vaccination
- Route, location of vaccination
- All vaccine information
 - Include withdrawal time

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Personal Safety When Vaccinating

- Needle sticks
- Vaccine exposure
- Sharps disposal
- Animal hazards
 - Livestock handling, restraint
- Environmental hazards



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Resources

- USDA Foreign Animal Disease Preparedness (FAD PReP) Guidelines: Vaccination for Contagious Diseases
– http://www.aphis.usda.gov/animal_health/emrs/naheems.shtml

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