Shelter Watch

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Our Mission:

We are committed to saving lives and reducing suffering of homeless dogs and cats through education, advancement of knowledge and shelter outreach.

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- Dr. Jan Scarlett, Professor of Epidemiology
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From the Director's Desk

This issue is devoted to vaccination since we continue to get many questions regarding this subject. Numerous articles have appeared in the popular media raising questions about the safety of vaccination in people and pets. Increased diagnoses of autism, various autoimmune diseases and other conditions have been linked to frequent vaccinations. Whether these associations are really causal, meaning vaccinations lead to disease, is not well understood. In light of the concerns raised, however, some parents and pet owners have stopped vaccinating. What most people today have not experienced is the devastating effects vaccine preventable diseases (e.g., diptheria, canine distemper) had in the centuries before vaccination. While vaccination always carries some risk (e.g., allergic reactions, fever, malaise), these risks are far smaller than the risk of severe illness or death if a person or pet becomes infected with the diseases against which we vaccinate.

It is also important to remember that if enough individuals are vaccinated in a population, non- vaccinated individuals are also protected. Protection for these susceptible individuals is a consequence of the inability of infectious disease agents to be transmitted from person to person when the proportion of immune subjects is high. At the population level, having many vaccinated individuals in a population results in "herd immunity". Several recent studies of the immune status of animals entering shelters demonstrate that the herd immunity of entering animals is low (~ 50%). This leaves about half of our shelter animals without protection against the most common and devastating canine and feline diseases - unless we vaccinate them in the shelter. Vaccination is not a substitute for good hygiene or other preventive measures, but should be used judiciously in conjunction with these other health-promoting strategies. If, after reading this issue, you have additional questions about vaccination, please do not hesitate to contact us.

In closure, I will share an important and exciting announcement. As of April 1st, Dr. Elizabeth Berliner – whom most, or all, of you know – assumed the position of the Director of the Maddie's Shelter Medicine Program at Cornell. She will continue to direct the Clinical Program as well, but now has the assistance of Dr. Holly Putnam who we introduced to you in our last issue. I am taking a 6 month sabbatical and will return this Fall on October 1st. It has been a pleasure and an honor to lead this program since its formal inception in September 2005, but I am moving towards retirement within the next couple of years. While in some ways it feels like leaving my "baby", I could not be more thrilled and relieved that Elizabeth is assuming the leadership role. Please congratulate her and welcome her to the Directorship!!

Jan M. Scarlett, DVM, PhD

Vaccination Strategies for Dogs in the Animal Shelter
Elizabeth Berliner, DVM

Core Vaccinations
"Core" vaccinations are vaccines that every dog should receive. In the animal shelter, core vaccinations include vaccines against Canine Distemper, Parainfluenza, Parvovirus; *Bordatella bronchiseptica*; and rabies.

A modified live or recombinant combination product for distemper, hepatitis, parainfluenza, parvovirus (DHPP) and an intranasal *Bordatella bronchiseptica* (Bb) in combination with Parainfluenza (cPi) should be provided at intake for all dogs in the shelter, regardless of shelter mission, intake policies, or anticipated outcome. Ideally, a rabies vaccine should be provided prior to release from the shelter.

Several studies have shown that dogs entering animal shelters have surprisingly low rates of protective antibody to distemper and parvovirus. This is much lower than those of owned animals who have seen a veterinarian, even if it's just one visit. These diseases are devastating if they enter an unvaccinated shelter population, and for that reason herd-level protection is critical to keeping the shelter-housed dogs healthy.

Non-core Vaccinations
These vaccines are considered "lifestyle" vaccines, meaning that the risk of exposure to the infectious agent can vary greatly depending on geography and activity. These non-core vaccines currently include those against leptospirosis, lyme disease, and canine influenza.

While these are not core for animal shelters, adopters should be advised at the time of adoption to consult with their veterinarians regarding adding these vaccinations to the preventive medical care for their pet. Furthermore, in shelters housing animals long-term or transporting animals into or out of regions with endemic canine influenza, the vaccine for canine influenza may be a useful addition.

The 2011 American Animal Hospital Canine Vaccination Guidelines are available at no charge on-line, and include a section specific to shelter-housed animals.

http://www.aahanet.org/PublicDocuments/CanineVaccineGuidelines.pdf

"In order to provide maximum protection to cats in shelters, it is recommended that cats be vaccinated at the time of intake."

Vaccines Strategies for Cats in Our Animal Shelter
Holly Putnam, DVM

Core Vaccinations
Feline Herpesvirus-1, Feline Calicivirus and Feline Panleukopenia are all potentially devastating viruses for which there are vaccines available. These three vaccines are considered core vaccines and essential for cats in shelters. They are usually combined into one vaccination known as FVRCP.

The risk of cats becoming exposed to rabies in shelters is quite low. However, because of the potential health risk to humans, it is strongly recommended that this vaccine be incorporated into the core vaccine schedule for cats.

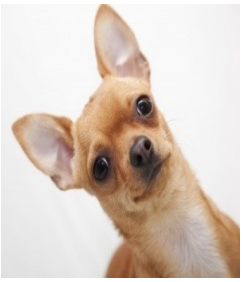
Non-core Vaccinations
There are several less commonly encountered infectious agents for which non-core vaccines are available. These include Feline Leukemia, Chlamydophilia felis, and Bordetella bronchiseptica. The vaccine for Feline Leukemia is sometimes recommended for shelters that utilize group housing for cats, where the potential for exposure to the virus is greater. The vaccines for C.felis and B.bronchiseptica are recommended for shelters that have confirmed and chronic outbreaks of these pathogens.

When choosing vaccines for cats in your shelter, it is best to use a modified live vaccine if one is available. This is because modified live vaccines provide immunity in just days compared to a killed vaccine, which may take 2 weeks to provide full protection.

In order to provide maximum protection to cats in shelters, it is recommended that cats be vaccinated at the time of intake. This allows their immune systems to respond to the vaccinations before they enter the general cat population within the shelter. This initial vaccination should be boostered two weeks later to be sure cats in the shelter can respond appropriately to infectious agents.

Kittens are an especially susceptible group as their immune systems are immature and often have inadequate ability to fight off pathogens. Shelter kittens should receive their first FVRCP vaccine at 4 weeks of age and receive a booster every 2 weeks until they are 18-20 weeks old. This protocol helps to ensure that kittens will be able to develop proper immunity when exposed to infectious diseases.
http://www.catvets.com/uploads/PDF/2006%20Vaccination%20Guidelines%20JAVMA.pdf

Shelter Protocols vs. Private Practice Protocols
Erin Connolly, DVM, Visiting Veterinarian



"Because the chance of disease exposure is often high in shelters, animals must be vaccinated at intake or prior to intake with core vaccines."

Vaccination protocols in shelters differ from those in private practice, in that vaccines in shelters are typically administered **earlier** and **more frequently** than in private practice. There are many reasons for these differences, including the higher chance of exposure to infectious diseases in shelters, the potential that many animals do not have immunity to infectious diseases at intake, and the severe consequences of infection that can often be life-threatening for both the affected animal and the shelter population.

Because the chance of disease exposure is often high in shelters, animals must be vaccinated at intake or prior to intake with core vaccines. Core vaccines for cats in shelters currently include feline viral rhinotracheitis, calicivirus, and panleukopenia (FVRCP). Core vaccines for dogs in shelters currently include distemper, adenovirus 2/hepatitis, parainfluenza, parvovirus (DA2PP/DHPP), and Bordetella bronchiseptica. Pregnancy and mild illness are not contraindications to administering core vaccines, as they may be in private practice, because the risk of infection in an unvaccinated animal is significantly greater than the risk of side effects caused by vaccination.

Puppies and kittens are vaccinated as young as 4 weeks of age in shelters, whereas most puppies and kittens in private practices will not begin their vaccination series until they are 6 weeks of age. Re-vaccination is recommended for puppies and kittens until maternal antibodies wane. Puppies and kittens in shelters must be re-vaccinated at 2-3 week intervals for the duration of their shelter stay, or until they are over 18–20 weeks old. Most puppies and kittens in private practices are vaccinated every 3-4 weeks until they are over 18-20 weeks old.

Has the Lab Mix Turned Into a Shar Pei? : Vaccine Reaction Basics
Anne Marie McPartlin, LVT

As with people, it is really difficult to predict whether a cat or dog will have an allergic reaction to vaccines. In a situation where they do react, it is important to respond quickly and continue to monitor. Symptoms of a reaction vary greatly from subtle lethargy to profuse vomiting and diarrhea. Clinical signs to watch out for include:

- Lethargy, inappetence
- Facial swelling
- Hives
- Vomiting and/or diarrhea
- Markedly dark pink/red mucous membranes
- Respiratory distress
- Collapse

It is important to consult with a veterinarian if an allergic reaction is suspected. How the reaction is managed will depend on the severity of the clinical signs. With a mild case of hives, an injection or oral administration of an antihistamine can sometimes do the trick. However, more severe swelling, vomiting/diarrhea, respiratory distress or collapse can warrant a trip to the emergency clinic. It is also important to remember that once initial symptoms are under control, the animal still needs to be monitored for symptom recurrence or new symptoms for at least 12 – 24 hours later.

It is helpful to have emergency drugs on hand for immediate administration in cases of anaphylaxis. Again, these should only be used under the direction of a veterinarian. Recommended drugs are:

- Epinephrine
- Diphenhydramine (injectable and oral)
- Dexamethasone sodium phosphate

Also depending on clinical signs, the animal may need supportive care such as IV fluids, gastroprotectants, or oxygen therapy. If any long term inhabitants of the shelter have had a prior vaccine reaction, a veterinarian may recommend premedicating the cat or dog with diphenhydramine +/- a steroid prior to vaccinating again. Keen observation is one of the most beneficial tools when dealing with vaccine reactions.

Vaccine Terminology and Usage
Dr. Natalie Lowry

Vaccine	Details	Pros	Cons	Boost	MaB
Inactivated	Infectious agent killed with chemical, heat, or radiation, and combined with adjuvant.	Stable, often not requiring refrigeration. No risk of reversion to virulent sate.	No replication, thus elicits weak immune response. Adjuvants associated with adverse reactions, including sarcomas. Usually not considered protected until 10-14 days following booster.	Y	N
Modified Live	Infectious agent rendered innocuous in laboratory. Still 'live', thus mimics natural infection.	Elicits strong antibody cellular and humoral responses. Life-long immunity possible with 1 or 2 injections. Usually protected with hours-days of first injection.	Reversion to virulent state possible. Often not recommended for immune compromise or pregnant animals. Usually requires refrigeration.	N	N
Subunit/ Conjugate	Only immune-stimulating antigenic fragments of the infectious agent are used, often combined with adjuvant. May be used in combination with recombination technology.	Lower chance of adverse reaction vs. inactivated vaccines, modified live.	No replication, thus elicits weak immune response, and requires boosting. Expensive to develop. May require refrigeration.	Y	Y/N
Toxoid	Bacterial toxins are inactivated with formaldehyde.	May not require adjuvant. Lower chance of adverse reaction vs. inactivated vaccines, modified live.	No replication, thus elicits weak immune response, and requires boosting.	Y	Y
DNA	The infectious organisms' antigenic DNA is injected into the host, causing host cells to incorporate the antigenic DNA, manufacture and display the target antigens.	Antigens are replicated by body's own cells. No risk of reversion to virulent sate. Lower chance of adverse reaction vs. inactivated vaccines, modified live.	Still undergoing clinical trials, not yet available.	Y/N	Y/N
Recombinant	Infectious organisms' DNA is inserted into an innocuous vector virus or bacteria.	Mimics natural infection. Stimulates strong immune response.	**May require boosting**. Immune response may be inferior to MLV and/or killed vaccines.	Y/N	Y

Boost = Does vaccine require booster to be protective? **MaB** = Is vaccine effective in face of maternal antibodies?

Feline Injection Site Q&A: What We Know & How We've Responded

Michael Robinson, Veterinary Student

Q: How frequently do injection site sarcomas occur?
A: Scientific studies have given some information, but the precise risk is not known. It is currently believed that the average incidence of a tumor at a vaccination site is ~8/10,000 cats (0.0008% risk)

Q: Is it only vaccines that can cause these tumors?
A: No, other injections have reportedly been connected with tumors - including antibiotics, steroids, suture material, etc. but not in high numbers.

Q: Is there a specific location that they occur?
A: One scientific study showed that 50% of tumors occurred between the shoulder blades, but this may be more reflective of historical vaccine techniques, rather than an increased risk in this location on the cat's body.

Q: Are there certain vaccines which seem to cause these tumors more often?
A: Scientific studies suggest that tumors are most often seen with injectable FeLV vaccinations, with the Rabies vaccine coming second.

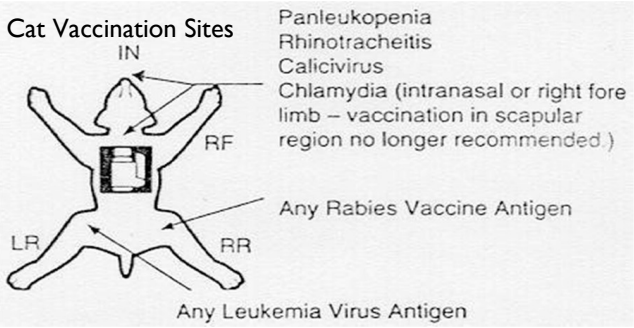
Q: Is there a cure?
A: Unfortunately no - these tumors often require radical surgical removal, then supplemented with chemotherapy to prevent/delay their reoccurrence. If the tumor is low on a limb and caught early, amputation may be curative. Tumors from vaccines given close to the body may be harder to completely remove.

Q: What strategies do shelters use to minimize the occurrence of these tumors?
A: Most shelters only give 'core' vaccines to cats. Each vaccine is given in certain limbs, which improves documentation. Shelters strive to place the injection site on a lower extremity. This way, in the rare instance a tumor should develop, curative amputation may still be an option.

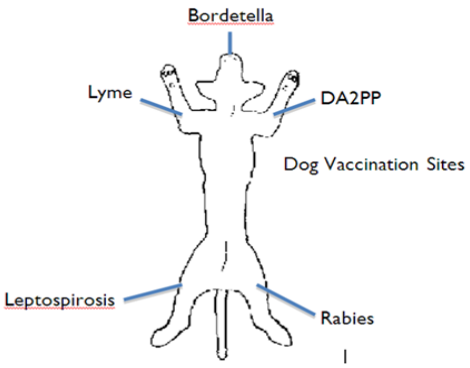
Q: Why vaccinate at all?
A: This is a good question! The diseases that we vaccinate our cats for at the shelter could not only spread very quickly, should it be brought in by another animal, but also carry bad medical outcomes if the cat were to catch it. Given these tumors are a rare complication, the benefit of continued protection against these diseases is much greater than the risk of developing a tumor.

Q: What should I be looking for at vaccination sites?
A: Learn the '1,2,3 Rule' - if a mass is still growing one month after vaccination, becomes greater than two cm in size, or if it persists for more than three months, talk to your veterinarian about evaluating it.

"Given these tumors are a rare complication, the benefit of continued protection against these diseases is much greater than the risk of developing a tumor."



Source: Vaccine Information Catsnip, available at http://76.162.27.245/vaccine.htm



Events Calendar

May 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 Shelter Med Club Clinic	2 Shelter Medicine II Course	3	4
5 Healthy Pet Clinic	6	7 Shelter Medicine II Course	8 Southside Clinic	9 Shelter Medicine II Course	10	11
	Clinical Rotation in Shelter Medicine (Week 1) →					
12	13 Chemung SPCA Visit	14 Shelter Medicine II Course	15	16 Shelter Medicine II Course	17	18
	Clinical Rotation in Shelter Medicine (Week 2) →					
19	20	21	22 Southside Clinic	23	24	25
	Program Shelter Consultation →					
26	27 Memorial Day	28	29	30	31	

Cornell University
College of Veterinary Medicine
Maddie's Shelter Medicine Program

Maddie's® Shelter Medicine Program is underwritten by a grant from Maddie's Fund®, The Pet Rescue Foundation (www.maddiesfund.org), helping to fund the creation of a no-kill nation.