Controversy and confusion: Vaccination of adult dogs and cats – An update

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Outline of this talk

♦ Potted History / Safety Issues
♦ Core vs. Non-core / Duration of Immunity
♦ Commentary / Recommendations
Overview

To vaccinate or not to vaccinate?

- As large a proportion as possible of all kittens and puppies should be properly protected by vaccination.
- Veterinarians are debating the details of *how best* to use vaccines, not *whether or not* to use vaccines in dogs and cats [nosodes]

Finland, 1994-5

5000 dogs became severely ill, 1500 died...
Outbreak…

- The Finnish dogs were dying of canine distemper (Ek-Kommonen, 1997)
- *Vaccinated* dogs were dying
- Only 20% of cases were older than 2 years
- Of about 5000 cases, 30% died

Possible explanations?

Potted history

- Until recently, vaccine manufacturers have been pressured to show earlier onset and higher degree of protection rather than longer duration of protection
- Some veterinary immunologists have questioned our practices all along, but they were largely ignored for decades.

Then…
Vet jabs kill our pets, say dog lovers

by JD KOMMELY

Dogs are being crippled and even killed by the annual veterinary jabs intended to protect them, according to alisters.

The Canine Health C Collaborative, which conducted the largest survey of 3,700 vets, claims that as many as 13 percent of dogs are being injected more often than necessary, with some vets even giving as many as 20 doses a year.

The main vaccines are against diseases such as hepatitis, leptospirosis, distemper and parvovirus, but the side-effects can range from vomiting and diarrhea to severe illnesses such as arthritis, allergies and brain damage, according to multiple sources.

It is also reported that dogs which had received all four doses of vaccine had completed 20 percent, 30 percent, and 40 percent of their puppy courses within 30 days, 24 hours and 24 hours respectively.

The results are based on a study published last month in the journal, *Vet J.*, which claimed that many vets are giving jabs without checking the animal's history.

The panel of experts also stated that vaccinations should be given only as two a year, and after that only if the animal is at risk of catching a disease.

The study found that only 10 percent of dogs were up-to-date with their jabs, and that many vets were giving jabs without checking the animal's history.

“Vets must be careful about over-vaccinating,” said Dr. Jennifer O’Donnell, a vet at the Canine Health Collaborative, after her dog died of liver failure.

“Vaccines can cause adverse reactions and in some cases can even be fatal,” she said.

Vet Nurses' Association said: “These vaccines have been rigorously tested for safety and effectiveness and have dramatically reduced the outbreaks of diseases.”

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Consumer magazine
March 2002

“The Pet Jab Problem”

AVMA news
September 15, 2004

Controversy, confusion continue to surround vaccine guidelines
Vets dogged by criticism over vaccinations

KELLY BURKE, CONSUMER AFFAIRS REPORTER
August 1, 2010

Vets have been told to stop advising pet owners to vaccinate annually...

Pet vaccination

SERVICES

Pet vaccination is an important part of your pet's health and wellbeing.

INTRODUCTION

Pet vaccination is an essential part of your pet's health and wellbeing. Regular vaccinations help protect your pet from a variety of diseases, including infectious diseases and infections from parasites.

There are many reasons why vaccinations are important for pets. Proper vaccination helps to prevent serious illnesses and infections, including the spread of diseases that can be life-threatening. Regular vaccinations also help to maintain a healthy immune system, which is essential for the proper functioning of the body.

There are no specific requirements for the type of vaccinations that your pet needs. However, it is recommended that you consult with your veterinarian about the appropriate vaccinations for your pet. Your veterinarian will be able to provide you with information about the different types of vaccinations and the recommended schedule for your pet.

In addition to regular vaccinations, it is important to consider the possible side effects of vaccinations. Side effects may include fever, swelling, and changes in appetite or behavior. These side effects are usually temporary and should resolve on their own. However, if your pet experiences any unusual or persistent side effects, you should contact your veterinarian immediately.

It is important to be aware of the potential risks associated with vaccinations. Some pets may experience an allergic reaction to the vaccines, which can be serious and even life-threatening. Your veterinarian will be able to advise you on the potential risks and how to manage them.

It is recommended that you consult with your veterinarian about the appropriate vaccinations for your pet. Regular vaccinations are an important part of maintaining your pet's health and wellbeing. By ensuring that your pet is properly vaccinated, you can help to prevent serious illnesses and infections, and ensure the long-term health and happiness of your pet.
Are we over-vaccinating?

Declining “authority” of professions
Sophisticated clients
Autoimmune diseases in dogs
Free Medline
Long-ignored views of some immunologists

DoI data
World Wide Web
Increasing interest in “alternative” remedies
Vaccine-associated sarcomas in cats

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Dol data

World Wide Web

Increasing interest in “alternative” remedies

Safety issues
Safety data

Epidemiologic evidence for a causal relation between vaccination and fibrosarcoma tumorigenesis in cats


Kass et al. 1993

345 fibrosarcoma-bearing cats were enrolled:

185

160

Q. Looking at cats that have unfortunately developed a sarcoma, are they more likely to have their sarcoma located at an injection site if they have received certain vaccines?
Kass et al. 1993

- FeLV vaccine recipients were 2.78 - 5.49 times more likely to get a sarcoma at an injection site rather than elsewhere on their body.
- Rabies vaccine recipients were 1.2 - 1.99 times more likely to get a sarcoma at an injection site rather than elsewhere on their body.
- The more vaccines injected simultaneously, the greater the risk.
In Australia?

“What a man would like to be true, he preferentially believes”

Francis Bacon, 1620

cited by John Ellis in a letter critiquing Fred Scott’s feline DOI paper. AJVR Sept 1999

Do postvaccinal sarcomas occur in Australian cats?

G BURTON and KV MASON
Animal Skin and Allergy Clinic, 5551 Pacific Highway, Springwood, Queensland 4127

SUMMARY: A soft tissue sarcoma occurred in the interdigital area of a cat, 1 to 7 months after vaccination at that site. The vaccine contained inactivated feline parvovirus in addition to modified live feline herpesvirus and calcivirus. The tumour showed histological features of both fibrosarcoma and malignant fibrous histiocytoma. The tumour was observed to evolve from the site of a punctured postvaccinal granuloma. Local recurrence 6 weeks post excision necessitated more radical resection. Euthanasia was performed on 2 years later when clinical effusion developed. The cause of effusion was not determined. There was no palpable evidence of local tumour regrowth at the time of euthanasia. A causal relationship between vaccination and sarcoma formation is considered based on the temporal association between the two events, the anatomical location of the tumour and histopathology consistent with postvaccinal sarcomas reported overseas. Six other vaccine site fibrosarcomas, potentially vaccine associated using the above criteria, are summarised.

Australian Veterinary Journal 75: 102-106
Burton G. and Mason K.V. (1997)
*Australian Veterinary Journal* 75: 102-106.

Do postvaccinal sarcomas occur in Australian cats?

– Yes they do.
– “At least 1 per 178,600 vaccinations”

A practitioner might vaccinate fewer than 1000 adult cats in a year.

If the risk of a fatal vaccine-associated disease is 1 to 3 per 10,000 vaccine recipients or less, that practitioner might go many years before seeing a single instance of fatal disease.

Then she/he might not recognise it for what it is, because of its rarity.
Is a risk of potentially fatal disease in 1 to 3 per 10,000 feline vaccine recipients acceptable?

*It is all about risk vs. benefit*

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**Other safety data**

Hydranencephaly and cerebellar hypoplasia in two kittens attributed to intrauterine parvovirus infection

Sharp NJ, Davis BJ, Guy JS, *et al.*

*Journal of Comparative Pathology*


“an in-utero parvovirus infection, possibly due to vaccination” [italics mine]
Other safety data

Outbreak of fatal salmonellosis in cats following use of a high-titer modified-live panleukopenia virus vaccine

Foley JE, Orgad U, Hirsh DC, et al


Other safety data

Abortion and death in pregnant bitches associated with a canine vaccine contaminated with bluetongue virus

Levings RL, Wilbur LA, Evermann JF et al.

Other safety data

Vaccine-associated immune-mediated hemolytic anaemia in the dog

Duval D, Giger U.


Plus, some ‘nutty’ ideas…
NEW MILLENIUM + NEW ATTITUDES = REAL HEALTH

“...nowadays animals are suffering from and passing on to their offspring the inexcusable effects of over-vaccination.”

Sandra G. Unwin
N.Z. Kennel Gazette November 1999 Supplement

The risk of adverse consequences is real but small
On the other side of the coin…

Results demonstrated that recent vaccination (<3 months) does not increase signs of ill-health by more than 0.5% and may actually decrease it by as much as 5%.
Annual revaccination

Is it safe?

Is it efficacious?

Is it justifiable?

i.e., does the necessity for frequent boosters stand up to scientific scrutiny?

Duration of Immunity (DoI)

‘Core’ and ‘non-core’ vaccines
‘Core’ vaccines for dogs protect against…

- Canine distemper
- Canine parvoviral enteritis
- Canine infectious hepatitis

‘Non-core’ vaccines for dogs

- Parainfluenza virus
- *Bordetella bronchiseptica*
- *Leptospira* spp.
- Canine enteric coronavirus*

* Not recommended for routine use by many large veterinary organisations
‘Core’ vaccines for cats protect against…

- Feline panleukopenia
- Feline calicivirus
- Feline herpesvirus 1

‘Non-core’ vaccines for cats

- *Chlamydophila felis*
- Feline leukaemia virus
- *Bordetella bronchiseptica*
- Feline immunodeficiency virus*

* Not recommended for routine use by some large, overseas veterinary organisations
CDV: Olson et al. (1997)

- Studied 30 dogs imported to Iceland, where there is no canine distemper
- Last vaccine given at 6 weeks to 4 months of age, 10/30 only ever received one shot
- Median time since last vaccine: 5.5 years
- At least 73.3% still had ‘protective’ titres $\geq 1:16$
Duration of serologic response to five viral antigens in dogs

Douglas E. Mouzin, MS, MBA; Marianne J. Lorenzen, DVM; John D. Haworth, DVM, PhD; Vickie L. King, PhD

From Veterinary Medicine Biologicals Research and Development, Pfizer Animal Health, Pfizer Inc, 7000 Portage Rd, Kalamazoo, MI 49001.

JAVMA, Vol 224, No. 1, January 1, 2004

p. 55-60

Results—The percentage of dogs that had titers at or greater than the threshold values or responded to revaccination with a ≥ 4-fold increase in titer was 98.1% for CDV, 98.4% for CAV-1, 99.0% for CAV-2, 100% for CPIV, and 98.1% for CPV.
DOI – Cats

FPV, FHV, FCV


Duration of serologic response to three viral antigens in cats

Douglas E. Mouzin, MS, MBA; Marianne J. Lorenzen, DVM; John D. Haworth, DVM, PhD; Vickie L. King, PhD

From Veterinary Medicine Biologicals Research and Development, Pfizer Animal Health, Pfizer Inc, 7000 Portage Rd, Kalamazoo, MI 49001.

JAVMA, Vol 224, No. 1, January 1, 2004
p. 61-66

Pfizer. Four years...

Results The percentage of cats that had titers at or above the threshold values or responded to revaccination with a ≥ 4-fold increase in titer was 96.7% for FPV, 97.8% for FCV, and 88.2% for FHV.
‘Core’ and ‘non-core’ vaccines

**Key point:**
- Core vaccines have been shown to provide long-lasting protection, well over 3 years.
- Non-core vaccines, in general, have not been shown to provide long-lasting protection and, if your animal needs one or more of these vaccines, it will need to be given (at least) annually.

The greatest controversy concerns the feline respiratory viral infections:
- Feline herpesvirus
- Feline calicivirus

Vaccinating an infected carrier animal would not be expected to help…
Giving the ‘wrong’ vaccine more often would not be expected to help…
What has happened?

2006 AAHA Canine Vaccine Guidelines

In 2005, AAHA’s Canine Vaccine Task Force met to re-examine and revise guidelines on the use of vaccines in dogs. The results of the Task Force’s work are summarized and tabulated in this article and are published in their entirety on the AAHA website (www.aahanet.org). The 2006 AAHA Canine Vaccine Guidelines contain information on new technological developments in vaccines, an introduction to conditionally licensed vaccines, and detailed recommendations on the use of available vaccines. Perhaps the most noteworthy addition to the guidelines is a separate set of recommendations created for shelter facilities. Vaccines are classified as core (universally recommended), noncore (optional), or not recommended. The Task Force recognizes that vaccination decisions must always be made on an individual basis, based on risk and lifestyle factors.

http://www.aahanet.org/PublicDocuments/VaccineGuidelines06Revised.pdf

Triennial for the core vaccines
Massey University in New Zealand started to recommend a default of triennial revaccination against core diseases in dogs and cats in 2000.
Canadians

Special Report  Rapport spécial

Canadian Veterinary Medical Association adopts a new position statement on vaccination protocols for dogs and cats

L’Association canadienne des médecins vétérinaires adopte un nouvel énoncé de position sur les protocoles de vaccination pour les chiens et les chats

Bernard Vallée

The Canadian Veterinary Medical Association (CVMA) has recently developed a revised version of the general position statement (PS) on Vaccination Protocols for Dogs and Cats. It replaces the previous version, which dated back to July 1999. The new PS was approved by CVMA Council last July.

Periodic review and updating of the general position statement (PS) falls under the mandate of the National Issues Committee (NIC) of the CVMA. For this particular review, the NIC was chaired by Dr. Michelle Attwood, and included several members, including Dr. Anne-France Léger and Prof. Marie Robert.

The revised PS is available at the CVMA website. The NIC is currently updating the animal health section of the CVMA website, and will be available for review and comment soon.

What’s new in the updated position statement?

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Europeans

Vaccines and vaccination: the principles and the polemics

Marian C Horzinek and Etienne Thiry

Background The European Advisory Board on Cat Diseases (EABCD) is a body of experts that sees its task as bringing feline health issues to the forefront of companion animal practice. By way of an introduction to this special ‘clinical practice’ issue of the Journal of Feline Medicine and Surgery (JFMS), this article attempts a ‘helicopter view’ of practical, or applied, immunology. It should be viewed as a ‘light primer’ to vaccines and vaccination, and is very general in nature. It is not intended to replace authoritative immunology textbooks, which abound both in the veterinary and medical fields, and the level of detail in which may discourage the casual reader. By design, therefore, this article is not referenced.

Understanding immune responses (no it after vaccination or infection) is discussed, as are the issues of duration of immunity, and vaccine safety and efficacy, tests predicting protection, population (‘herd’) immunity, and the types of vaccine developed and/or available (live, killed, chimeric, DNA-only products).

Practical relevance With day-to-day veterinary practice in mind, practical issues discussed include litter vaccination, the definition of ‘core’ versus ‘non-core’ products, passive immunisation, and prevention strategies in populations and crowded cat communities. Adverse reactions, and factors affecting vaccine efficacy, safety and performance are also summarised.

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2007 GUIDELINES FOR THE VACCINATION OF DOGS AND CATS

COMPILED BY THE VACCINATION GUIDELINES GROUP (VGG) OF THE WORLD SMALL ANIMAL VETERINARY ASSOCIATION (WSAVA)

Members of the VGG

M. J. Dav
Division of Veterinary Pathology, Infection and Immunity, University of Bristol, UK

M. C. Horzinek (Chairman)
(Formerly) Department of Microbiology, Virology Division, University of Utrecht, The Netherlands

R. D. Schutz
Department of Pathobiology, University of Wisconsin-Madison, USA

Triennial or longer for the core vaccines
16 weeks for the last puppy / kitten shot

2009 Australian Veterinary Association

Veterinarians and the new pet vaccination policy

The AVA has recently developed a new policy on vaccination of dogs and cats, which refers extensively to the 2007 WSAVA Guidelines for the vaccination of dogs and cats.

There has been some interest in the media about the new policy. The AVA has sent out two media alerts about this and issued a media release.

We have also prepared some communication material for clients that explains the need for annual health checks as an important preventive medicine strategy for pets.

As the policy points out, vaccinations should be determined for each individual animal, so the information for clients doesn’t touch on the details of which vaccinations should be given and how often.

Instead, the main message for clients remains the same as it has always been – regular preventive health care is important for pets. A visit to the vet might include a vaccination, but a regular check-up is as vital as a pet’s shot.
**Straightforward recommendations**

- Vaccination is a medical procedure. Feel free to ask questions!
- Against what diseases should my dog / cat be vaccinated today?
- What is the practice’s position on frequency of revaccination of adult dogs and cats against core diseases?
- Should any non-core vaccines be used today, in addition to (any) core vaccines?

**For cat owners specifically**

- Does the vet propose to inject an adjuvanted vaccine? Is there an option?
- Where (anatomically) does the vet propose to inject the adjuvanted vaccine?
- What should I do if I notice a lump at the injection site later on?
Summary

♦ The most important vaccines most dogs or cats ever receive are those they receive as puppies or kittens against the core diseases
♦ Modern ‘core’ vaccines are safe and can provide very long-lasting protection. These vaccines are readily available in Australia
♦ Non-core vaccines have not been shown to provide such long-lasting protection

Finally...

♦ *We have the power to influence:*-
  – Accreditation requirements for kennels and catteries
  – The demands *re* vaccination made by kennels and catteries of their customers
  – Our own expectations