Research

EDITORIAL

Vaccination of dogs and cats: no longer so controversial?

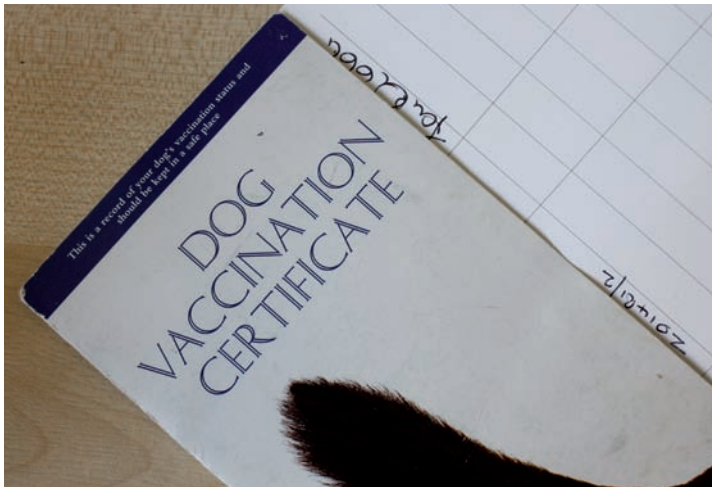
M. J. Day

VACCINATION practice continues to cause confusion for UK practitioners who are often perplexed by the apparently conflicting information that they receive from various sources. As little as 10 years ago, the vaccination of adult dogs and cats was perceived to be a relatively straightforward process whereby every animal enrolled with a practice received a particular combination of vaccine components every year. This practice was legally sound as all vaccines were licensed with a minimum duration of immunity (DOI) of one year. The administration of the 'annual booster vaccine' was regarded as the principle reason for an annual veterinary visit and it was commonplace to issue reminder cards for the 'annual booster'.

So why has this procedure changed? As the widespread and remarkably successful use of vaccines over the past few decades has resulted in a drastic reduction in the incidence of those serious infectious diseases against which we commonly vaccinate, attention has inevitably shifted to the small risk of vaccine-associated adverse reactions. Over the past 20 years, concerns have been raised over the safety of repeated administration of vaccines in both human and veterinary medicine. Although licensed vaccines have an extremely high safety profile, no product can be guaranteed safe in every patient and there is evidence that occasional adverse reactions to vaccines occur. Such reported suspected adverse reactions form a spectrum from mild and transient pyrexia and lethargy, through to allergic or autoimmune diseases, life-threatening neoplasia (the feline injection site sarcoma), or rarely death of the animal. Recent UK pharmacovigilance data suggest that the overall prevalence of canine adverse reactions is very low (18.5 per 100,000 doses of vaccine sold [VMD 2010]), while epidemiological analyses of a US corporate practice database provides figures of 30 to 50 reactions per 10,000 dogs or cats vaccinated (Moore and others 2005, 2007). Discussions of companion animal vaccine safety in the

M. J. Day, BSc, BVMS, PhD, DSc, DipIECVP, FASM, FRCPath, FRCVS,
School of Veterinary Sciences, University of Bristol, Langford House, Langford, Bristol BS40 5DU
e-mail: m.j.day@bristol.ac.uk

UK have occurred against the backdrop of the huge public and media controversy over the safety of human measles, mumps and rubella (MMR) vaccine, and globally there are very vocal public lobby groups that call for change in the practice of vaccination of dogs and cats. Despite these concerns, it is important to remember that vaccination offers the most effective means of preventing many serious infectious diseases and the benefits far outweigh the potential risk of adverse effects.



Over the past 10 years vaccination protocols have changed so that most core canine vaccines are given every three years rather than annually

The response of the veterinary profession to such discussions has been the formation of expert groups that have provided guidelines that promote a different approach to vaccination. Vaccination guidelines for cats were first published in the USA in 2000 (updated in 2006 – Richards and others 2006) and European feline vaccination guidelines were presented in 2009 (Horzinek and Thiry 2009). Canine vaccination guidelines from the USA were initially published in 2003 (updated in 2006 – Paul and others 2006). The guidelines of greatest global impact have been those prepared by the World Small Animal Veterinary Association (WSAVA) Vaccination Guidelines Group (VGG), initially in 2007 and updated in 2010 (Day and others 2010).

All of these guidelines have encouraged the following basic changes to vaccination practice:

- Consideration of vaccines as core (essential for all dogs and cats) or non-core (may be used in certain animals, dependent upon their infectious disease exposure risk, geographical location, and lifestyle and travel history). The canine and feline core and non-core vaccines are summarised in Table 1.
- Administration of core vaccines triennially to adult animals that were fully vaccinated as puppies or kittens.
- Modification of puppy and kitten vaccination regimes to include a final vaccination at 14 to 16 weeks of age and a 12-month booster to ensure that all animals respond to core vaccination at a time when inhibitory levels of maternally derived antibody are no longer present.
- The consideration of vaccination as a medical procedure, tailored to the individual animal and presented to clients as one part of an 'annual health check' that considers the overall health and wellbeing of that animal.

TABLE 1: Classification of canine and feline vaccines

	Core	Non-core
Canine vaccines	Distemper Adenovirus Parvovirus Rabies in endemic areas	Parainfluenza *Bordetella* *Leptospira* *Borrelia*
Feline vaccines	Parvovirus Herpesvirus Calicivirus Rabies in endemic areas	Feline leukaemia virus *Chlamydophila* *Bordetella*

It is important to consider the definition and scope of vaccination guidelines. Guidelines are non-compulsory recommendations that assist practitioners to use vaccines efficiently. They are based on current scientific thinking and expert opinion and take a 'generic' approach to vaccine products – presuming that all products of a similar class (eg, modified live canine distemper vaccines) have similar efficacy in the field. Guidelines must also presume a similar basic standard of companion animal lifestyle and medical care, as it is clearly impossible to develop scenarios that might be appropriate to the local socioeconomic or infectious disease pressures that may be present in each one of, for example, the 80 member nations of the WSAVA. The recent WSAVA guidelines emphasise this point and stress that veterinarians must adapt the guidelines for their own local circumstances and those of the individual animals under their care. Guidelines therefore strongly encourage practising veterinarians to move away from the 'one size fits all' practice vaccination policy to considering infectious disease risks within their own country or local area and tailoring vaccination needs to the individual.

The key issue for UK practitioners is that the advice contained within guidelines sometimes appears to conflict with advice given by manufacturers and regulators in the legal 'summary of product characteristics' (SPC), which defines how an individual product (as opposed to a generic class of products) should be used. The information contained within the SPC is based on experimental and field regulatory studies and the SPC is a legal document that defines how the vaccine should be used. The British Small Animal Veterinary Association (BSAVA) vaccination policy statement also recognises the legal status of the SPC over vaccination guidelines (BSAVA 2010). However, despite this apparent conflict, the Veterinary Medicines Directorate (VMD) has made it very clear that UK practitioners may use the information contained within the WSAVA guidelines in formulating an optimum vaccination schedule for any individual animal. If that particular schedule involves 'off label' use of a vaccine, then such use should be with the informed (and preferably documented) consent of the owner of that animal. The VMD advice is that: 'A veterinary surgeon is empowered to make a clinical benefit/risk judgment based on the local reports of infection and taking account of the age, health, home environment, travel plans and lifestyle for each individual animal presented for vaccination and discuss recommended vaccine schedules with the owner. Thus, the decision to vaccinate the individual patient and the frequency thereof is a matter for the veterinary surgeon and his client to discuss. It is not an issue where the VMD should intervene' (VMD 2010).

That said, it is now clear that the adoption of guidelines is no longer as controversial as it once was. Ten years ago, when guidelines first proposed triennial core vaccination for adult animals, all UK core vaccines had a licensed minimum DOI of one year. That made the use of a triennial core revaccination protocol contentious, as all such use was 'off label'. In contrast, at the present time almost all UK canine core vaccine combinations carry a licensed minimum DOI of either three or four years, and a number of feline panleukopenia (parvovirus) vaccines also carry a minimum three-year DOI. In fact, the situation with respect to canine core revaccination has changed so rapidly that it would now be considered 'off label' to administer a vaccine with a triennial licence annually! A survey presented at the 2010 BSAVA congress indicated that 53 per cent of UK practitioners sampled were then using a triennial canine core revaccination schedule (Heayns and Baugh 2010), but this figure should now be closer to 100 per cent given that the market leading vaccines all have a three- or four-year licensed minimum DOI.

A number of points of apparent conflict between guidelines and SPCs do still remain, including:

- Guidelines advise that feline herpesvirus (FHV) and feline calicivirus (FCV) core vaccines should be administered triennially, while UK licensed products all still have a licensed minimum DOI of one year and the majority of UK practitioners continue to use these products annually.
- Guidelines advice for a third puppy or kitten vaccination at 14 to 16 weeks where an SPC suggests only two vaccinations with an earlier finish.
- Guidelines advice for a 12-month booster where at least some SPCs do not include this stage.

The decision to adopt any of these recommendations is again up to the individual practitioner to make and the VMD advises practitioners that they may elect to include a 12-month booster or delay the final puppy or kitten vaccination, where they take responsibility for departure from the SPC (Fitzgerald 2010).

There is also sometimes confusion among UK practitioners concerning the guidelines classification of canine leptospirosis and feline leukaemia virus (FeLV) vaccines as non-core products. Again, the guidelines advice to adapt recommendations to the local situation should prevail. Where UK practitioners believe there is sufficient scientific evidence indicating that canine leptospirosis poses a significant risk to the local dog population or individual animal, they are justified in using the *Leptospira* vaccine as core. Similarly, where a young cat has a predominantly outdoor lifestyle, UK practitioners may assess the risk of FeLV infection and advise the use of FeLV vaccination as core. Such decisions are simply the application of evidence-based veterinary medicine.

So, is companion animal vaccination still controversial? Certainly there has been a recent marked shift to centre ground between the advice given in guidelines and that given by industry, the VMD and the BSAVA. Industry has responded rapidly to the scientific proposals in guidelines by making available core products with triennial revaccination intervals and ensuring the availability of products with fewer components to permit, for example, the use of triennial feline panleukopenia virus with annual FHV and FCV vaccination. Therefore, the veterinary surgeon may still chose to vaccinate any dog or cat annually within the context of an annual health check, but the use of fewer components on each occasion will increase the safety of the procedure. This practice is unlikely to require informed client consent as there are now a number of vaccines to choose from with suitable authorised revaccination intervals. It is to be anticipated that further product developments are to follow and that these will give veterinary surgeons even more scope to administer vaccines in accordance with guidelines advice. In the meantime, for the few remaining points of disagreement, it is clear that the ultimate decision rests with the individual veterinary surgeon.

Acknowledgments

This editorial has been produced following a 'Controversies' session at the recent BSAVA congress, which was devoted to an open discussion of guidelines for the vaccination of dogs and cats. The perspectives of the WSAVA VGG, industry (the National Office of Animal Health [NOAH]), regulators (the VMD) and a first-opinion practitioner were presented before a lively question and answer session (*VR*, April 16, 2011, vol 168, pp 395-396).

The author gratefully acknowledges the helpful comments made on the content of this article by Anna-Maria Brady (VMD) and Donal Murphy (NOAH).

References

BSAVA (2010) Policy statement on canine and feline vaccination protocols, nosode vaccines and adverse reactions to vaccines. www.bsava.com/Advice/PolicyStatements/CanineandFelineVaccinationProtocols/tabid/1325/Default.aspx. Accessed May 3, 2011

DAY, M. J., HORZINEK, M. & SCHULTZ, R. D. (2010) Guidelines for the vaccination of dogs and cats. *Journal of Small Animal Practice* **51,** 338-356

FITZGERALD, J. (2010) Canine vaccination schedules. *Veterinary Record* **166,** 280-281

HEAYNS, B. & BAUGH, S. (2010) To revaccinate or not to revaccinate: does serology have the answer for canine revaccination? Proceedings of the 53rd BSAVA Congress. Birmingham, April 8 to 10, 2010. p 414

HORZINEK, M. C. & THIRY, E. (2009) Vaccines and vaccination: the principles and the polemics. *Journal of Feline Medicine and Surgery* **11,** 530-537

MOORE, G. E., DESANTIS-KERR, A. C., GUPTILL, L. F., GLICKMAN, N. W., LEWIS, H. B. & GLICKMAN, L. T. (2007) Adverse events after vaccine administration in cats: 2560 cases (2002-2005). *Journal of the American Veterinary Medical Association* **231,** 94-100

MOORE, G. E., GUPTILL, L. E., WARD, M. P., GLICKMAN, N. W., FAUNT, K. K., LEWIS, H. B. & GLICKMAN, L. T. (2005) Adverse effects diagnosed within three days of vaccine administration in dogs. *Journal of the American Veterinary Medical Association* **227,** 1102-1108

PAUL, M. A., CARMICHAEL, L. E., CHILDERS, H., COTTER, S., DAVIDSON, A., FORD, R., HURLEY, K. F., ROTH, J. A., SCHULTZ, R. D., THACKER, E. & WELBORN, L. (2006) 2006 AAHA canine vaccine guidelines. *Journal of the American Animal Hospital Association* **42,** 80-89

RICHARDS, J. R., ELSTON, T. H., FORD, R. B., GASKELL, R. M., HARTMANN, K., HURLEY, K., LAPPIN, M. R., LEVY, J. R., RODAN, I., SCHERK, M., SCHULTZ, R. D. & SPARKES, A. H. (2006) The 2006 American Association of Feline Practitioners Feline Vaccine Advisory Panel Report. *Journal of the American Veterinary Medical Association* **229,** 1405-1441

VMD (2010) VMD position paper on authorised vaccination schedules for dogs. www.vmd.defra.gov.uk/pdf/vaccines_VMDpositionpaper.pdf. Accessed May 3, 2011

doi: 10.1136/vr.d2810

Vaccination of dogs and cats: no longer so controversial?

Veterinary Record 2011 168: 480-482
doi: 10.1136/vr.d2810