COMMUNICATING THE IMPORTANCE OF VACCINATION IN A VACCINE-HESITANT WORLD

George E. Moore, DVM, MS, PhD, DACVPM, DACVIM
College of Veterinary Medicine
Purdue University, West Lafayette, IN
Email: gemoore@purdue.edu

Abstract:

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The medical journal *Vaccine* published online on August 26, 2023, a study by a researcher at Boston University's School of Public Health who found that canine vaccine hesitancy was prevalent among U.S. dog owners. In a survey more than 50% of dog owners expressed some degree of skepticism about vaccinating their pets, including vaccination against rabies. Some owners (37%) believed that canine vaccination could give their pet autism. (https://www.sciencedirect.com/science/article/abs/pii/S0264410X23010150) This was then reported in *Veterinary Practice News* on Sep. 5, 2023. Are attitudes toward veterinary vaccines changing?

Vaccination protocols for dogs and cats have changed dramatically in the last 50 years. In the 1970s, dogs typically received 2 vaccines, a DHL (distemper-hepatitis-leptospirosis) vaccine and a rabies vaccine. Cats received a FVRCP (viral rhinotracheitis-calici-panleukopenia) vaccine and perhaps a rabies vaccine. By the 1990s, only 20 years later, discovery of new pathogens and/or ways to protect against them provided a large number of choices of possible vaccines to be given to these same patients. Beginning in the 2000s, committees with subject matter experts

began to formulate Canine and Feline Vaccination Guidelines to help "guide" practitioners in the formulation of their practice protocols.

Certain vaccines were considered essential for all dogs or for all cats, and were deemed "core" vaccines. These typically covered selected viral diseases such as canine and feline distemper and rabies. Other vaccines might have merits but were considered non-essential for all in a species, and therefore labeled "non-core".

PROTOCOLS, PROTOCOLS

Practices were developing vaccine protocols even before vaccination guidelines were being published. Published guidelines however became a standard or yardstick by which one could create/assess your own practice's protocols. Protocols were also part of the instructional material in veterinary colleges and demonstrated within their veterinary teaching hospitals. Nevertheless, new graduate veterinarians were probably less influenced by their teaching in school than by what they observed in practices they worked in, past or present.

Without a federal agency per se, e.g. CDC for human vaccines, to define practice protocols nationally, there was not standardization between veterinary practices regarding vaccination protocols. This was particularly true for non-core vaccines, but also true regarding boostering of core vaccines in adults at 1-year versus 3-year intervals. Guidance on non-core vaccine use was presented regarding individual animal risk, typically based on lifestyle, perceived disease exposure risk, and potential for severe disease if naturally infected.

NON-CORE VACCINE USE

Usage of non-core vaccines in dogs and cats is, not surprisingly, quite varied across the United States, but little has been published or otherwise documented about this usage. To attempt to evaluate this nationally, a study was initiated by one of the vaccine manufacturers to determine non-core vaccination rates in a large subset of veterinary clinics across the US for 5 different vaccines (4 canine and 1 feline). The study used the database and assistance of a veterinary data analytics and practice management software company, and there was no identification of specific vaccine brands used (or bias toward/against any specific manufacturers). Specific vaccines investigated included vaccines for canine leptospirosis, *Borrelia burgdorferi* (Lyme disease), *Bordetella bronchiseptica*, canine influenza virus (CIV – H3N2/H3N8), and feline leukemia virus (FeLV). The results of the study were published online in January 2022 (Malter et al. *Vaccine* 2022).

Vaccination rates were determined by first assessing how many dogs/cats in the practice(s) were vaccinated with core vaccines as of Jan. 1, 2020. From this group, rates were then calculated regarding usage of the non-core vaccines (within a 14-month window) in dogs/cats >6 months old in that clinic or practice location. As the data was skewed, medians were calculated for summary statistics rather than averages or means. Median vaccination rates were calculated for each clinic, and for the state if data was available for >10 clinics in that state.

Data was available from 48 states (excluded ID and NV due to small numbers) and 1670 clinics for dogs and 1661 clinics for cats. Data was initially available for approximately 5.5M dogs and

1.9M cats. Of these, approximately 2.8M dogs and 800K cats met core vaccination requirements for calculation of vaccination rates.

Interestingly, at a national level, median vaccination rates at clinics/hospitals for leptospirosis and *Bordetella* were similar at 71% and 69%, respectively. As a median value (the middle, or 50th percentile) that might be considered good or very good coverage, but ranges were quite extensive! For canine leptospirosis vaccines, some clinics had 100% vaccination rates (lepto would be a core vaccine, i.e. for all dogs) but some clinics in the same state had <5% vaccination rates of dogs against leptospirosis. Similarly for *Bordetella*, individual clinic vaccination rates for dogs ranged from >95% to <5% within the same state.

Vaccination rates for *Borrelia* and CIV were much different. Rates for both were very low nationally, but not surprisingly *Borrelia* was very geographically focused (Northeast, upper Midwest, and central Atlantic). Considering only the 11 states listed by CDC as high incidence for Lyme disease in humans, median clinic vaccination rate for dogs against Lyme disease was only 52%. The state with the greatest median vaccination rate for *Borrelia* was New Hampshire at 75%. For CIV, nationally the median vaccination rate was only 5%, and exceeded 10% in only 6 states (MD, IL, MA, OR, MI, OH). Some individual clinics (in 5 states) had median vaccination rates for CIV >90% but these were uncommon.

For FeLV, the median vaccination rate across 48 states was 35%, and in cats 7-24 months of age was 37%. There were 4 states with median clinic vaccination rates >80%, but 16 states with

median clinic vaccination rates <20%. Quite a difference among states, and also quite varied compared to AAHA/AAFP Feline Vaccination Guidelines!

When comparisons were made between clinics which self-reported to be using 1-year versus 3-year protocols for core vaccines, the median vaccination rates for leptospirosis, *Bordetella*, and FeLV were greater in the 1-year protocol clinics than in the 3-year protocol clinics. It is unknown if this difference relates to other differences in protocols or practice management, or if clients on 3-year core vaccine protocols are less compliant in returning annually for other preventive medicine services!

COMMUNICATING ABOUT VACCINES (NON-CORE AND CORE)

While differences in vaccination rates are clearly related to our professional assessment of risk in individual patients, could part of the difference be related to our communication about vaccination?

Even our personal perception of risk can be varied depending on whether it is the risk associated with something good happening versus something bad happening, e.g. winning the lottery versus getting struck by lightning. Whether doctor or client, our decision making is almost always based on evidence in support of a position. The difference is - what (to us) counts as evidence?

For some, evidence could be based on science or research (or does it depend on who did the research?). For some, evidence is based on personal experience or the experiences of those you respect or trust – be they on social media or news media.

When we as doctors communicate about vaccination or the need for vaccination, the communication has 2 very important components: the content AND the process. It has been stated that "data tells, but stories sell!" Sociological investigations suggest that about half of the US population prefers data-based information but the other half prefers personal/relational-based information! We often do not ask the framework for our clients' opinion about vaccination, nor do we share our framework – which could include that we vaccinate our own dog or cat against such diseases.

Subconsciously we are all programmed (for self-preservation) to see what we believe, rather than to believe what we see, i.e. "things are not as they appear". Thus for safety, we focus or are more impacted by statements about negatives than by positives – a negativity bias. For example, making 99 statements about the benefits of something may have less influence than 1 statement about a negative impact of the same thing. Therefore if your statements about vaccines tend to mention negatives or risk of adverse events, then that [the negatives] becomes a subconscious focus for the client. If the client wants to talk about risk of adverse events, do you steer the conversation toward the negative impacts of disease for the pet (and emotional/financial expense to the owner) if not being protected by vaccination?

One source of guidance on canine vaccines for practitioners is the American Animal Hospital Association (AAHA) Canine Vaccination Guidelines, published in 2017 and recently updated in September 2022. The 2017 edition of the Guidelines had an expanded section on risk communication to clients. This emphasizes that communication on infectious diseases as well as

vaccination is not to be neglected (nor assumed). As such, written and signed informed consent is advocated whether vaccination is accepted (consent acknowledging vaccine reaction risk) or refused (consent acknowledging disease infection risk). This communication becomes more important in a post-COVID vaccine-hesitant world.

In summary, we need to be more conscious about our communication (and the communication of our whole practice team) as advocates for the health of our beloved pets – and that includes communication to potentially vaccine-hesitant clients about the value of core vaccines and non-core vaccines in their pets!

References available from author on request.