Providing medical care for puppies and kittens is one of the perks of our profession and, for many of us, offsets the daily routine of a busy veterinary practice.

With the joy of handling such little creatures, however, comes great responsibility. It is the veterinary team’s job, in general practice, to maintain a life-long, high-quality human–animal bond. The first 4 months of life are a critical time period with regard to achieving that goal.

CURRENT TRENDS IN WELLNESS CARE

The 2011 Bayer Veterinary Care Usage Study identified several alarming trends, two of which identified that:

1. Veterinary visits have been declining since 2001
2. Pet owners no longer believe in the value of preventive care.

Three facts from the study are pertinent to pediatric wellness care:

1. Pet owners are confused about where to go for veterinary care. What used to be the only choice—the local, traditional veterinary office—is just one of many options, which include:
   » Vaccine clinics offered by pet “super stores”
   » Nonprofit clinics associated with the local SPCA or animal control
   » Expansive multidoctor specialty hospitals.

2. Pet owners are not aware of the value of an annual wellness examination. Vaccination protocols have changed, allowing more than 1 year between some vaccinations, but veterinary teams, as
a whole, have not made it clear to clients that wellness care encompasses much more than just vaccination.

3. Pet owners prefer to see the same veterinarian as much as possible. The new catch-word for this preference is relationship-centered care. This concept has been around for decades, but its importance in veterinary care has just recently come to the forefront. See The Bayer Veterinary Care Usage Study, page 66, for further information on study findings.

### WELLNESS CARE GOALS & EDUCATION

#### Pediatric Wellness Care Goals
Based on the study results, pediatric wellness care goals are changing. Protecting puppies and kittens from infectious diseases and preventing/eliminating intestinal parasites are still crucial, but the new goals are much broader:

- Develop a genuine relationship between the practice and pet owner. The components and benefits of relationship-centered care are discussed elsewhere but focus on:
  - Partnering with clients to make health care decisions
  - Improving communication with clients to develop trust, which leads to enhanced adherence to veterinary recommendations.
- Communicate the value of preventive health care. The first few months of a pet’s life provide the perfect opportunity to introduce the concept of lifelong wellness care.

#### Veterinary Team Training
Effective team training will help each member understand the above approach to pediatric care. In the “crunch” of daily practice, though, some pieces may be skipped. Therefore, it is critical that the veterinary team understands the importance of developing relationships with clients and communicating why wellness/preventive care is imperative.

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**PED PaTRIC CARE OVeRVIeW: THE FIRST YEAR OF LIFE**

<table>
<thead>
<tr>
<th>VISIT</th>
<th>Age Range</th>
<th>Behavior</th>
<th>Nutrition</th>
<th>Oral care</th>
<th>Parasites</th>
<th>Reproduction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRST VISIT</strong>&lt;br&gt;6 to 8 weeks old</td>
<td>• Screen for housetraining concerns in puppies and discuss scratching behaviors in kittens  &lt;br&gt;• Recommend puppy socialization/kitten education classes  &lt;br&gt;• Introduce “Nothing In Life Is Free (NILIF)” training for puppies  &lt;br&gt;(humane society.org/animals/dogs/tips/training_nothing in_ life_is_free.html)</td>
<td>• Verify appropriate diet  &lt;br&gt;• Discuss ad lib versus meal feeding</td>
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<td><strong>SECOND VISIT</strong>&lt;br&gt;9 to 11 weeks old</td>
<td>• Reinforce implementation of NILIF  &lt;br&gt;• Re-emphasize puppy socialization/kitten classes  &lt;br&gt;• Screen for rough play concerns</td>
<td>Discuss body condition score (BCS) assessment</td>
<td>Introduce tooth brushing</td>
<td>Repeat deworming  &lt;br&gt;Begin heartworm prophylaxis  &lt;br&gt;Assess need for ectoparasite management  &lt;br&gt;Repeat recommendation for fecal flotation, if not yet done</td>
<td>Continue core vaccination plan</td>
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<tr>
<td><strong>THIRD VISIT</strong>&lt;br&gt;12 to 15 weeks old</td>
<td>Screen for ongoing concerns and problem solve as necessary</td>
<td>Screen for concerns and verify appropriate BCS</td>
<td>Re-emphasize long term benefits of regular oral care</td>
<td>Repeat as above (for second visit)</td>
<td>Repeat deworming  &lt;br&gt;Begin heartworm prophylaxis  &lt;br&gt;Evaluate need for ectoparasite control  &lt;br&gt;Repeat recommendation for fecal flotation, if not yet done</td>
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<tr>
<td><strong>FINAL VISIT</strong>&lt;br&gt;16 to 18 weeks old</td>
<td>Recommend enrollment in basic obedience classes</td>
<td>Introduce tooth brushing</td>
<td>Discuss appropriateness of prepubertal spay/neuter  &lt;br&gt;Discuss/recommend microchipping  &lt;br&gt;Spay/neuter may coincide with last pediatric wellness visit</td>
<td>Introduce and discuss need for noncore vaccinations</td>
<td>Reiterate recommendations and schedule spay/neuter and microchipping  &lt;br&gt;Spay/neuter may be delayed or waived, stress microchipping at this visit</td>
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<td>Parasites: Recommend product(s) to use monthly for first year of life, adjusting as necessary to accommodate weight changes</td>
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<td>Reproduction:</td>
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<td>Vaccination:</td>
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<td>Pediatric:</td>
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For example, client awareness can be enhanced by explaining that:

- Heartworm disease is prevalent across the United States
- Immunocompromised adults and children are vulnerable to parasites commonly encountered in pediatric pets
- Pets are relinquished daily due to behavioral problems that began at a young age but were not addressed.

**VACCINATION PROTOCOLS**

**Vaccine Recommendations**

Most veterinary schools now embrace, based on evidence, the concept of dividing vaccines into:

- **Core**: These vaccines should be administered to all dogs and cats.
- **Noncore**: These vaccines are only administered based on risk of exposure to the pathogen.

**Initial Vaccination Series**

For core vaccines, an initial series is required to develop adequate immunity.

- An initial vaccine series is usually defined as 2 to 3 doses administered between 6 and 16 weeks of age (8, 12, and 16 weeks are commonly recommended).
- Doses should be administered **no less than** 2 weeks apart and **no more than** 6 weeks apart.
- Vaccination creates temporary immunosuppression; revaccinating at **less than** a 2-week interval prevents a complete response to the next dose of vaccine.
- Additional vaccine doses administered **more than** 6 weeks after the initial dose are not expected to trigger the development of a memory response on subsequent exposure to the pathogen.

**Maternal Antibodies**

Puppies and kittens receive antibodies for infectious diseases through colostrum consumed in the first 24 hours of nursing. However, significant amounts of maternal antibodies can interfere with a pediatric patient's ability to respond to vaccination.

- **Puppies** should receive the final dose of a core vaccine series between 14 and 16 weeks because, even at 12 weeks of age, maternal antibody levels may still be sufficiently high to interfere with vaccination.
- **Kittens** should receive the final dose of a core vaccine series at 16 weeks of age to ensure protective immunity.

A full discussion on vaccination strategies and adverse events is beyond the scope of this article. Read Today's Veterinary Practice's *Vital Vaccination Series* for comprehensive information on vaccination topics. Articles are available at todaysveterinarypractice.com.

**PARASITE MANAGEMENT**

In my experience, there are 4 components of pediatric parasite management:

1. **Empiric deworming** for hookworms and roundworms
2. **Heartworm prophylaxis** initiated
3. **Ectoparasite prevention** evaluated
4. **Fecal flotation** by centrifugation

**Empiric Deworming**

There are 2 reasons that parasitic infestations may be present in pediatric patients (as young as 2 weeks of age):

1. **The high prevalence of hookworms/roundworms in canine and feline populations, whether in the environment or due to maternal transmission.**
2. **A parasite life cycle that involves transcolostral or transplacental transmission of larvae.**

The patient should be dewormed during the first pediatric visit, with either:

- Combination products effective against other parasites
(eg, Heartgard Plus, merial.com; Trifexis, elanco.com; Advantage Multi, bayer-ah.com) or

- If age and/or weight require it, pyrantel pamoate. Deworming should be repeated at each pediatric wellness visit.

  Deworming a puppy or kitten provides the opportunity to discuss these parasites’ zoonotic potential, especially if young children are in the home. Veterinary practices are increasingly being held accountable for damages when children are infected with visceral larva migrans after exposure to new puppies.8

Heartworm Prophylaxis
The 2011 American Veterinary Medical Association/ American Animal Hospital Association Canine and Feline Preventive Health Care Guidelines recommend that all cats and dogs in the United States receive year-round heartworm preventives, regardless of heartworm prevalence in a community.9

The pediatric examination allows the veterinary team to evaluate clients’ knowledge of heartworm disease as well as explain the difference between heartworm disease in dogs and cats. The zoonotic disease previously mentioned can be segued into a conversation about the necessity of heartworm prevention.

Administration of heartworm prophylaxis differs among the type of preventive (ie, monthly topical versus 6-month injection). The key point is that the importance of prevention should be reiterated at each pediatric visit.

Ectoparasite Prevention
The importance of flea and tick prevention in puppies and kittens will depend on where in the U.S. the veterinary practice is located, as ectoparasite prevalence varies greatly by geographic region. If location, history, or examination indicates a need for flea/tick prevention prior to 16 weeks of age, the veterinarian can recommend:

- Use of a single, “combination” product that deworms, prevents heartworm, and provides flea adulticide or growth regulation simultaneously or

- Dispense a product indicated for a specific parasite, either tube by tube or box (depending on the predicted growth of the patient); for example, use of a product for tick control in a pediatric patient infested with ticks.

Fecal Flotation by Centrifugation
Ideally, clients should bring a fresh stool sample to each pediatric visit, which allows identification of the protozoal parasites—coccidia and Giardia. As mentioned earlier, it is important to convey the zoonotic/infectious risks that these pathogens possess, which adds value to the test in the pet owner’s mind.

IN SUMMARY
This article has focused on preventing infectious and parasitic diseases in pediatric patients. However, those components are only part of a comprehensive wellness plan. A second article will address the other elements of pediatric care:

- Nutrition
- Behavior
- Oral health
- Reproductive needs.

References

Julie Meadows, DVM, is Chief of Community Medicine at University of California–Davis School of Veterinary Medicine, where she lectures on client adherence, orphan kitten management, and animal handling and physical examination. Dr. Meadows has played an integral role in growing the community medicine service in order to enhance primary care training for veterinary students. Her professional speaking focuses on the concepts of relationship-centered care and family practice. Dr. Meadows received her DVM from UC Davis and practiced small animal general medicine for 20 years, owning a practice for 10 of those years, prior to her current position.