



# **Training Playbook:** Medical Care for Kittens

## Introduction

In many shelters across the country, neonatal and weaning kittens are one of the groups most at risk of losing their lives. Even for organizations with robust kitten programs, sick kittens can pose major challenges. Through effective preventive care, a thorough understanding of common kitten medical conditions, and prompt recognition and treatment of those conditions, shelters and rescue groups can expand their capacity for kittens and increase kitten lifesaving.

*Disclaimer: As with all treatments and medical protocols, the following recommendations should only be implemented under the direction of a veterinarian. It is also the shelter's responsibility to ensure that all legal and regulatory requirements are met. This playbook is meant to provide a broad overview of management strategies for common kitten conditions but does not address every possible diagnosis or treatment, and there are numerous causes of illness in kittens that are outside the scope of this document. For any sick individual, consultation with a veterinarian is recommended.*

## Program Overview

A robust medical program for kittens has several components. The most important of those is preventive care. It's much easier and more resource-effective to proactively keep them as healthy as possible, instead of addressing disease as it occurs.

When disease does occur, these are the most commonly observed conditions of neonatal and recently weaned kittens:

- Fading kitten syndrome
- Upper respiratory infection
- Diarrhea
- Panleukopenia
- Constipation

Special consideration should be given to the issue of combining litters of kittens or placing a single kitten with an unrelated nursing mom. In some shelters, this is a valuable lifesaving tool, but it comes with some risk. As with all things in sheltering, the risk must be understood in order to make an informed decision on whether the lifesaving benefit outweighs that risk.

## Program Composition

### Preventive Care

At its most basic, preventive care includes basic nutrition and supplemental warmth for orphans. Refer to [this playbook](#) for more information on basic care. When it comes to

medical care, preventive care typically includes vaccinations and deworming/anti-parasite treatment.

Kittens should be vaccinated according to the [guidelines for shelter-housed cats](#). This means a modified-live FVRCP vaccine given starting at 4 weeks of age, then repeated every 2-3 weeks until they have reached 16-20 weeks of age, with at least two vaccines administered at 16 weeks of age or later.

For kittens in foster care, this schedule may be modified to look more like [owned pet guidelines](#), depending on the situation, but giving too few vaccines is potentially more harmful than giving too many (considering the potentially fatal disease that can result). At Best Friends, foster kittens are vaccinated on the same schedule as shelter-housed kittens, given that they may return to the shelter at any time or may be placed in other high-risk situations (such as transport).

Preventive deworming is recommended for kittens. At a minimum, this includes pyrantel given upon intake starting at 2 weeks of age and repeated on a two-week basis (at the same time as vaccinations) for at least 2-3 doses. The larval (early/young) stages of worms are not affected by pyrantel, and so an initial dose only catches the mature worms in the intestinal tract. The following dose(s) will eliminate any worms that were in larval stages at the time of the initial dose and that have subsequently matured. Pyrantel treats for roundworms and hookworms, the most common intestinal parasites of young animals and the two of most concern for zoonotic transmission.

Because of the high prevalence of coccidiosis observed in some populations of young animals, many shelters choose to administer a preventive treatment for this, even in kittens not showing clinical signs. Ponazuril is a coccidiocidal medication, meaning it kills the parasite. Formulations can be compounded where this is allowed based on local regulations, or compounded in-house by diluting commercially available equine paste (Marquis). Sulfadimethoxine (Albon), a common medication prescribed for coccidiosis, is coccidiostatic; the parasite is not eliminated, but further growth and replication are halted. In the shelter and for kittens with high parasite loads, a coccidiocidal option is preferred to eliminate the parasite rapidly.

One easy way to monitor kitten health, both in the shelter and in foster care, is to monitor body weight daily, at a minimum. Any kittens not gaining 10g or more every day should be evaluated by the medical team or a skilled shelter staff person. If no obvious signs of illness are present, the feeding schedule and amount should be evaluated to ensure that the kitten is receiving adequate nutrition. [Here is a template](#) that can be printed for kennel-side monitoring by animal care staff.

It is not uncommon for older kittens just entering foster care to stagnate or even lose a small amount of weight right after the transition if they are allowed more activity in a home environment. Not gaining weight in an otherwise healthy, bright, eating kitten who has just moved may not be reason for alarm, but as with anything related to kittens, it certainly warrants investigation and monitoring.

## Fading Kitten Syndrome

Fading kitten syndrome is defined as a sudden onset of rapid decline during the neonatal period. Kittens can decline in a matter of hours. This syndrome is typically characterized by a combination of hypoglycemia (low blood sugar), hypothermia (low body temperature) and dehydration. Infections, environmental conditions or congenital abnormalities may contribute. A full discussion is outside the scope of this document, but basic intervention requires addressing these problems and identifying the underlying process so that it can be corrected.

Supplemental warming should be provided until the kitten's body temperature is 98 degrees. Warming should be performed over 1-4 hours; warming that is too rapid can cause excessive water loss and can worsen the kitten's condition. Warming can be achieved with warm water bottles, heating discs, incubators or air warming systems. Ideally, avoid electric heating pads as they may not heat evenly and can cause burns. If no other option is available, ensure that the heating pad is separated from the kitten by several layers of fabric.

Rotate the kitten every 20 minutes if he cannot move on his own. Ambient temperature for kittens, depending on their age, should be 85-95 degrees, with additional supplemental heat as needed for hypothermic kittens. Do not feed kittens with formula until they are warmed. Administering dextrose solution is recommended to correct hypoglycemia and is safe to give even during hypothermia.

Dehydration should be corrected with fluid therapy; warmed subcutaneous fluids can be administered, or warm water can be administered via a stomach tube for milder cases. More severely affected kittens need intravenous or intraosseous fluid therapy.

Hypoglycemia can be corrected initially with oral Karo syrup or oral dextrose solution. Ideally, 1-2ml of 5-10% dextrose solution, warmed, is given orally per hour. With intravenous or intraosseous access, 50% dextrose can be administered as a bolus, diluted 1:2 with an isotonic crystalloid, at 0.5-1.5mL/kg over 5-10 minutes. For ongoing support, dextrose can be added to intravenous or intraosseous fluids (but should NOT be added to subcutaneous fluids).

If available, oxygen therapy via oxygen cage or incubator can improve oxygen delivery and respiratory function.

If sepsis is suspected as the cause, broad-spectrum antibiotics should be administered. Amoxicillin or amoxicillin-clavulanic acid are good choices, with the adult dose reduced by 30%-50% in kittens less than 6 weeks of age.

## Upper Respiratory Infection (URI)

The most important thing shelters can do to manage and prevent upper respiratory disease in cats (including kittens) is to reduce stress and length of stay in the shelter. The pathogens that cause URI can be isolated from healthy-appearing cats, as they can

be carriers, and cats are more prone to flare-ups during times of stress. Prevention in the shelter is all about stress reduction and getting cats out of the shelter and into a home (whether it's a foster or adoptive home). This is especially true for kittens.

If shelter staff are observing a lot of URI in the shelter's kittens or cats, then a comprehensive evaluation of feline population management is in order. (Consider referencing these playbooks for more information: [length of stay](#), [daily rounds](#).)

For the individual kitten, treatment options exist, depending on clinical signs. Of primary importance is supportive care (hydration, keeping them clean, nebulization, humidification). Topical eye medications can be used in cases of ocular disease, and kittens with severe ulcers are at risk of eye rupture, so they should be treated aggressively with antibiotics and serum eye drops.

Viruses are responsible for most shelter URI cases. Antibiotics are not indicated in all cases of URI and should be reserved only for those cases demonstrating signs of a bacterial component (colored or opaque discharge). Doxycycline is the recommended first-line antibiotic for most cases, given that it should treat for the most common bacterial pathogens associated with shelter URI (*Mycoplasma*, *Bordetella*). There is a risk of esophageal stricture if tablets are not followed with water; always choose suspension or administer tablets followed by water. A full discussion of feline URI is outside the scope of this playbook, but resources and sample protocols are available below.

## Diarrhea

Diarrhea in kittens is one of the great medical challenges that we face in shelters; unfortunately, there isn't one easy answer for all cases. There are several types of treatments to consider, though, and individual response will be variable. In a more critical kitten, it's reasonable to take a more aggressive approach and try more than one therapy at a time, while in a stable kitten gaining weight, it makes practical sense to approach therapy in a stepwise fashion.

**Hydration:** The most important part of acute diarrhea treatment in kittens is hydration maintenance. For kittens who experience mortality after diarrhea, severe dehydration is a common cause. Options for hydration include diluting formula with electrolyte solution (Pedialyte or similar) 1 to 1. Dilution reduces the caloric density, though, so if this option is needed over many days, it can be alternated between full-strength formula and the formula diluted with electrolyte solution every 24 hours.

A better option is fluid therapy with either subcutaneous fluids or intravenous fluids, if hospitalized. [Foster caregivers and staff can easily be taught to administer subcutaneous fluids](#). Neonate fluid requirements are much higher than adult requirements (130-220mL/kg for daily maintenance) and additional fluids are needed to make up for losses. Intraosseous catheter placement is an option if venous access is not available.

**Additional antiparasitic treatments:** Preventive parasite treatments should be verified, and additional empirical treatment with a broader spectrum may be given. This might include fenbendazole and a longer therapeutic course of ponazuril. Even with an intake dose of ponazuril, coccidiosis may be acquired by transmission in the shelter or reinfection from the environment, so treatment (either empirically or based on fecal results) is often warranted.

**Probiotics:** Some shelters elect to administer a probiotic to all kittens prophylactically, either throughout bottle feeding and weaning or at any point when formula or food is changed. Not all probiotics are created equal, though, so obtaining a verified, veterinary-specific product is recommended (examples include Forti-flora or Provable).

**Diet:** For unweaned kittens, a different formula may help, although a recent diet change may also *cause* diarrhea. For weaning or weaned kittens, there are many options for gastrointestinal diets and they use different strategies to ease digestion. Some have higher fiber; others provide a nutrient profile that's easier to digest.

Adult cat diets may not have the calorie density that young kittens need to keep growing, so consider feeding a mix of adult GI food and kitten food, or try a kitten-specific GI formulation (e.g., Royal Canin GI Kitten in [canned](#) and [dry](#) formulas). Some kittens respond to fiber supplementation (psyllium powder, canned pumpkin) in their diet, and this is a much more cost-efficient alternative than prescription food.

**Antibiotics:** The use of antibiotics in the management of kitten diarrhea is controversial, and a variety of recommendations exist. Historically in veterinary medicine, metronidazole has been the antibiotic of choice for diarrhea in small animal patients, but this drug carries a risk of neurotoxicity when used at high doses in young animals. Other drugs have been advocated for and used successfully, anecdotally, by animal shelters, but evidence-based recommendations are lacking. Any antibiotic treatment, whether in a protocol or for an individual patient, should be done at the discretion of a veterinarian.

## **Panleukopenia**

An in-depth discussion of panleukopenia is outside the scope of this playbook, but as it is a disease of tremendous concern in shelters, here are a few points.

Panleukopenia commonly presents as vomiting and/or diarrhea. Unlike in puppies, it is unusual for kittens to vomit related to stress or diet change, so any vomiting kitten should be tested. Panleukopenia is also the most common cause of sudden death in shelter cats (adults and kittens). It should be a differential for any unexpected death in a shelter cat, even if other concurrent conditions are present (like upper respiratory disease).

The canine parvovirus antigen test kits, while not designed or tested for this use, are routinely used to diagnose panleukopenia in cats, due to cross-reactivity (the viruses are closely related). The test likely does not perform as reliably, however, so any

negative result must be considered with suspicion. If clinical signs point to panleukopenia, it is prudent to handle that animal as if panleukopenia is the cause. A positive result can be considered diagnostic.

Routine screening of healthy kittens with parvo antigen tests is not recommended. Shedding prior to clinical signs is limited (1-3 days) and this is a large investment of resources. Proper biosecurity with neonates and juvenile animals who are at risk of developing disease is a much more efficient and effective approach.

### Constipation

Constipation in neonates commonly occurs with diet changes and can occur more generally simply due to the formula administration that is necessary for orphans. No fecal production in 24 hours or more may warrant treatment. Constipation can also be a cause of unwillingness to nurse and abdominal distension (bloating) in neonates.

Treatment consists of maintenance of hydration (subcutaneous fluids and/or dilution of formula with electrolyte solution) and [warm water enemas](#). Non-medical staff and volunteers can be trained to safely administer these treatments.

### Group Housing and Combining Litters

Group housing in shelters can provide a source of enrichment for social adult cats and valuable socialization during a critical period for kittens, but both the risks and potential benefits must be understood. When considering group housing for kittens, in most cases, the increased risk of infectious disease transmission outweighs the benefit for this vulnerable population.

If group housing is used for kittens, maintaining kittens in groups that arrived together (usually of the same litter) mitigates the risk of infectious disease spread. If litters are combined, to reduce that risk, postponing combining until at least a week or more has passed will allow time for incubating infectious disease to manifest. (Panleukopenia is of primary concern, followed by upper respiratory pathogens.) For group housing rooms, practicing all-in, all-out movement (meaning that once combined, no new kittens are added, the room is cleared, then completely disinfected before placing a new group in the space) can also help to mitigate disease risk.

If litters of unrelated kittens are combined into groups, formal disease surveillance is ideally performed so that any increases in infectious disease related to the practice are identified and the practice can be re-assessed.

For orphaned single neonatal kittens, some shelters will consider placing the singleton with an unrelated nursing mother. As with other group housing, there is a risk of disease, so this practice is not recommended, but if the alternative is euthanasia for the single neonate, it can be considered on a case-by-case basis. Again, disease surveillance is important, as is re-evaluating the availability of foster homes on a regular basis to determine when the practice may no longer be needed.

## Sample Procedure and Program Information Documents

Now that you have a general understanding of what veterinary care for kittens looks like, the following documents can act as templates or inspiration as you implement or scale up your own program. Keep in mind that there is no exact or perfect form of implementation. Using the considerations and program composition notes above, you should use the following as guidelines or building blocks when creating your own standard operating procedures or documents (both internal and public). If you need further assistance or clarification, please reach out to your [regional strategist, regional director](#), or the Best Friends national shelter support team at [team2025@bestfriends.org](mailto:team2025@bestfriends.org).

Additional resources:

- Sample [kitten medical protocol](#) and dose charts (in [pounds](#) and [kilograms](#))
- Sample [intake protocol](#) (including kitten preventive care and vaccinations)
- Fading kitten algorithms and protocols
  - [Basic care algorithm](#)
  - [Advanced algorithm](#)
  - [AmPA Fading Kitten Syndrome](#)
- Links to how-to resources
  - [Tube feeding](#)
  - [Enemas](#)
  - [Subcutaneous fluid administration](#)
- Feline URI resources
  - [Sample protocol](#)
  - [Another sample protocol](#)
  - Webinar: [“Thinking Outside the Snot: Shelter Medicine Approaches to Upper Respiratory Infections in Cats”](#)