Neonatal Health and Medical Overview

Common Medical Issue Overview

Neonates do not have fully developed immune systems and are susceptible to many illnesses and parasites, some of which they get from their mother at birth. Kittens need proper care and attention to ensure they grow up happy and healthy.

Alert the Nursery Manager or Assistant Manager if you notice:

- Aspiration (milk coming out of nose during feeding)
- Sneezing
- Coughing
- Eye and/or nasal discharge
- Wheezing; difficulty breathing
- Diarrhea
- Vomiting
- Straining to urinate or defecate
- Bleeding from any part of the body
- Abnormal twitches
- Walking in circles; walking into things
- Loss or decrease of appetite
- Steadily losing weight
- Change in attitude or behavior
- Lethargic or depressed
- Head slumped in food or water bowl
- Any unusual behavior

Upper Respiratory Infection (URI)

The term "upper respiratory infection" is used to refer to any illness that affects a cat's upper respiratory system; it is basically a kitty cold. URIs are common in shelter cats. Common symptoms include sneezing, runny nose and/or eyes, fever, and loss of appetite. URIs are treated with antibiotics. If kittens are having difficulty breathing, they may also need to be nebulized. Be certain to keep kittens warm until they have recovered from a URI. URIs are very contagious to other cats and kittens through direct contact and can also be airborne. Feeders should be especially diligent about sanitation protocols when tending to sick kittens and should wash their hands after handling kittens with URIs.

FeLV and FIV

Feline leukemia virus (FeLV) suppresses the immune system and can cause cancer or other serious illnesses in susceptible cats. FeLV is fatal and the life expectancy of a mature, infected cat is 2–4 years; most FeLV+ kittens do not survive to maturity. FeLV is transmitted through saliva and nasal secretions, as well as through urine, feces, and milk from infected cats. The virus can also be transferred through a bite wound, mutual grooming, shared use of litter boxes and feeding dishes, sexual contact, and from a mother cat to her kittens while in utero or during birth. FeLV+ cats and kittens are not housed in the Neonatal Ward. Young kittens testing positive for FeLV are tested again when they are a little older to confirm the results of the first test, which commonly gives a false positive as antibodies from the mother can be detected in the kitten. FeLV does not survive long outside of the cat's body, probably less than a few hours, so carefully adhering to established protocols should limit the possibility of transmission.

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Feline Immunodeficiency Virus (FIV) is a virus that can cause a multitude of health problems in cats due to reduced immune system function; it is also known as feline AIDS. FIV is contagious, but only to other cats—people cannot get AIDS from their cats. Most cats with FIV live a normal life despite the virus and can live well with other cats as long as there is no aggressive fighting. Cats living indoors in a stable social structure have little chance of passing the disease to other household cats. Transmission occurs most commonly through deep bite wounds; less commonly, it is transmitted by an infected mother cat during birth or through sexual contact. If FIV is present, it should be noted on the litter's crate and on the Feeder Board.

Mature cats and kittens six weeks and older are tested for both FeLV and FIV during intake at APA!. All kittens are tested for FeLV. Usually, if a mother cat has either of these two diseases, it is assumed the kittens will also have them, since mother cats can transmit them to their babies during birth.

FeLV and FIV+ kittens and cats are adoptable. FeLV kittens must go to FeLV fosters and can be placed in the APA! FeLV sanctuary to await adoption. FIV kittens can be placed in foster homes with other cats and kittens and in the cattery to await adoption.

Calicivirus

Calicivirus, also known as "calici," is a viral infection that can occur in cats and kittens that are not vaccinated or are newly vaccinated. Calici is spread between cats through direct contact with eyes and noses, or through contact with contaminated objects that an infected cat has sneezed on or otherwise been in contact with, such as carriers, feeding dishes, and even food. Humans that have come in contact with an infected cat or kitten could potentially pass the virus through contact with other cats.

The virus can have multiple forms, the most common being an upper respiratory tract form. Other forms include the joint form, which can cause fever and swelling of the joints, and the mutant virulent form, which can cause URI signs and ulcers on the face, among other symptoms.

Due to the ease of transmission of this virus, cats and kittens with calici should be immediately quarantined in a separate area from healthy cats. Those who treat the affected cats and kittens must follow strict sanitation protocols to ensure that the virus is not spread.

Panleukopenia

Panleukopenia, also known as "panleuk," is a viral infection that most commonly affects kittens and young cats. It is transmitted through direct contact with saliva, vomit, and feces. An infected mother cat can also transmit panleuk to her kittens at birth. Left untreated, it is almost always fatal. This illness can be frustrating and difficult to deal with because the virus is very durable, can survive in the environment for up to a year, and is highly transmissible. This means that other unvaccinated cats can become infected with panleukopenia simply by coming into contact with places where an infected cat has been.

Testing for panleukopenia is not routinely done during intake since the test will not show positive until the virus is shedding. The test also does not have a high accuracy rate, and if the mother cat has been vaccinated, then the kittens will test positive. Vaccinated cats and kittens will sometimes have a false positive from the Parvo test. Symptoms of panleuk include vomiting, diarrhea, loss of appetite, and lethargy. Symptoms can take 3–10 days to present once a kitten has been infected. Once kittens are suspected or confirmed of having panleuk, they are put into quarantine or placed with a specialized foster for treatment.

Due to the ease of transmission and the high number of potential fatalities from this disease, the Neonatal Program has an isolation area where panleuk kittens can be quarantined until they have completed treatment and can be confirmed as post-panleuk. There is a team of experienced feeders who are trained to work in the Parvo/Panleuk Ward with these kittens when there is not a specialized foster available. Once the infected kittens test negative for the virus and are approved

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to commingle with healthy cats and kittens, they can go to foster or to the cattery for adoption. Once a cat has survived panleuk, it will be immune for the rest of its life and will never be contagious again. When a nursery kitten is diagnosed with panleuk or suspected panleuk, the entire area must be decontaminated.

- To clean all crates, supplies, and everything else that was touched by or was near infected kittens, use bleach diluted with water at a ratio of 1:32, bleach to water. A stronger dilution is not more effective and can lead to skin and respiratory problems for both kittens and humans. A weaker dilution is not effective.
- First, all surfaces must be hard-scrubbed with cleanser and water. In the nursery, 409 cleanser is the only approved cleanser, as it will remove organic matter that may be infected with the virus.
- Next, all surfaces must be soaked with diluted bleach for 10 minutes. Then, all surfaces must be wiped clean again with cleanser.

This process is repeated three times. So: scrub with cleanser, soak with diluted bleach for 10 minutes, wipe with cleanser; soak with diluted bleach for 10 minutes, wipe with cleanser; soak with diluted bleach for 10 minutes. After the third soak, thoroughly wipe the area clean, spray with disinfectant, and wipe clean again.

- When scrubbing, be sure to thoroughly clean any crevices; use a toothbrush for very small or tight spaces. All organic matter must be decontaminated and removed.
- Always wear gloves and a smock when decontaminating for panleukopenia.
- If a surface or an item cannot be effectively decontaminated, dispose of it.
- Laundry must be washed with soap and a cup of bleach and should not be washed with any laundry that has not been exposed to panleuk.
- While wearing gloves and a smock, place laundry loosely in the washer; if it is packed too tightly, the laundry will not be washed and sanitized thoroughly.
- If it is determined that the laundry item cannot be effectively decontaminated, dispose of it.

All feeders are warned that exposure to panleukopenia is always a possibility. It is critical that all sanitation protocols are followed when tending to the kittens in our care so that the possibility of transmitting disease is lessened. Feeders are strongly advised to have their personal pets vaccinated to prevent transmission of this deadly disease. The sanitation protocols established for the nursery and for the Panleuk Ward have proven quite effective, although are not guaranteed to prevent transmission. Should a feeder's personal pets contract panleukopenia, APA! is not responsible for treatment or for the cost of treatment. The panleuk vaccine is considered very effective.

More information about panleukopenia can be found on this website:
http://www.veterinarypartner.com/Content.plx?P=A&S=0&C=0&A=1983

Medications and Treatments

- Feeders are not authorized to give medications or injections.
- The Nursery Manager, Assistant Manager, or other authorized person will administer all medications and injections.
- There will be a medication chart attached to the file of any litter taking medications.

Nebulizing

When kittens contract respiratory infections or any other illness that causes trouble breathing, a nebulizer is placed in their crate to administer a medicated mist they inhale, much like people using a humidifier.

- Before setting the nebulizer up for a crate, check first to be sure it has all the necessary pieces and that it works—motor, tubing to go from the motor to the fluid reservoir, and a fluid reservoir. Be sure the tubing will remain attached to both the motor and the reservoir.
- Try to plug the nebulizer in where it will not be hazardous to anyone walking in the nursery.

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- Nebulizer solution is a mixture of fluid, an antibiotic and a steroid. Only use fluid from a refrigerated bag that is clearly labeled "NEB" or "NEBULIZER SOLUTION." Do not use any fluid in the nebulizer that is not clearly marked.
- If there is no nebulizer solution in the refrigerator, ask the Nursery Manager, Assistant Manager, or Med Tech for some. Be sure new containers of neb solution are clearly marked.
- Nebulizer solution should always be refrigerated; do not leave it out.
- Fill the reservoir with nebulizer solution.
- Put a towel or blanket over the crate's door so that the mist stays inside the crate where the kittens can breathe it. Turn on the nebulizer.
- Check the nebulizer periodically to ensure it is still working properly and that it has not run out of fluid. The fluid will run out in about 30 minutes or so.
- **Never** leave a nebulizer running unattended.
- **Never** let a nebulizer run in a crate with an empty reservoir—an empty nebulizer will continuously blow cold air on sick kittens, which can lead to hypothermia and cause the kittens to fade.
- Update the kittens' Daily Care Sheets and the Feeder Board when kittens are nebulized.
- When the litter no longer needs to be nebulized, clean and sanitize the nebulizer and return it to its proper place.

Kittens that need to be nebulized will be easier to feed if they are nebulized first.

Eye infections

Eye infections are quite common with kittens—sometimes a kitty cold can move into the kitten's eyes, and some kittens come to the nursery with eye ailments. These are usually treated easily with medicated eye drops or ointment.

- If you notice any eye discharge and the kitten is not currently being treated for any eye issues, note this on the kitten's chart for evaluation.
- Clean discharge matter from a kitten's eyes with a cotton ball or piece of gauze dampened with warm water or with a diluted solution of iodine or betadine, wiping gently so as not to hurt the kitten's delicate eye area.
- **Never** double-dip a cotton ball or gauze in the warm water or medicated solution; always use clean gauze or cotton so as not to contaminate the water or solution.
- Feeders do not treat a kitten's eyes unless asked to do so by the Nursery Manager.

If a kitten has something more serious than simple conjunctivitis, other eye medications or treatment may be required. Shelters often see kittens whose eye infections or injuries will leave them partially or completely blind, and in some cases even require removal of the eye itself. These kittens are still highly adoptable and adjust very well to their condition.

Vaccinations

Most pet owners are used to having their kittens begin vaccinations around eight weeks of age, when the immunity a kitten gets from its mother starts to wear off. Since kittens living in a shelter do not have a mother, they have a different schedule for vaccinations so they are protected from contagions coming into the nursery.

- Kittens will be vaccinated at intake if they are four weeks of age and weigh at least one pound.
- Kittens residing in the nursery will be vaccinated once they are four weeks of age and weigh at least one pound. If one or more kitten in a litter is not ready to be vaccinated, vaccinations will be done when all kittens are ready so that the entire litter is on the same schedule.
- Kittens must have booster shots every two weeks.
- The Nursery Manager is responsible for making sure kittens receive vaccinations at the right time and will maintain vaccination records for all kittens in the Neonatal Program.

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Common Neonatal Medications

Upper Respiratory Infections (URI)

Symptoms include sneezing, watery eyes, nasal discharge, congestion. Nebulizing is used in conjunction with an antibiotic for severe URIs (refrigerate solution).

- **Doxycycline** (100mg/ml) - Antibiotic used as a starting point for most URI's. Dose is 0.05cc/# PO SID x 7-10 days (best if not refrigerated)
- **Azithromycin** (40mg/ml) (abbreviated Zithro or Zithromax) - Antibiotic, used for more severe URI or if doxy did not work. Dose is most commonly 0.1cc/# PO SID x 5 days then once every third day x 3 more doses (refrigerate!).
- **Baytril** (injectable) broad spectrum antibiotic - Used for very severe URI with severe congestion. Also use if aspiration is severe and turns into pneumonia. Dose is 1 "hub" (approx 0.01ml) diluted in at least 3cc LRS fluids SID x 5 days then recheck (do not refrigerate).

Eye infections

These often occur with URIs

- **Gentamicin sulfate** - eye drops (antibiotic), one drop each eye with infection BID-TID x 3 days then extend if needed. Eyes will often need to be cleaned first with a diluted iodine solution to remove discharge (do not refrigerate).
- **Canine serum** - used for severely irritated/infected eyes, one drop each eye TID. Use at least one minute before antibiotic eye drops.

Diarrhea

Learn the difference between diarrhea and "normal" kitten feces—diarrhea is very runny or watery, "cow patty" or "toothpaste" is OK)

- **Pen-G injection** - broad spectrum antibiotic, dose is 0.25cc SQ SID x 3 days diluted 6 parts LRS fluids to 1 part Pen-G (refrigerate). First choice for diarrhea unless bloody or worms are seen
- **Panacur** - Dewormer, dose is 0.2cc/# PO BID x 5 days. Often used in conjunction with marquis paste (do not refrigerate)
- **Marquis Paste** - anticoccidial/antiprotozoal, dose is 0.2cc/# PO SID x 3 days if used with panacur. If coccidia suspected the course is longer (do not refrigerate)
- **Metronidazole** - Antibiotic, dose is 0.05cc/# PO BID x 7 days. Use if diarrhea is bloody or if previously listed meds are unsuccessful (refrigerate)
- **Baytril** - used sometimes used as a last resort if the other medications don't work. Occasionally other medications will also be dispensed at the medical clinic's discretion.
- **LRS fluids -** used for dehydration. The dose is 10cc/# SQ.

Other medications will be used in the nursery and you will encounter many more diseases and conditions. This is a list of the most common and the ones you should memorize.

SID = once a day. BID = twice a day. TID = three times a day. PO = by mouth. SQ = subcutaneous (under the skin). IV = intravenously (used rarely in the nursery). IM = intramuscular (used very rarely in the nursery)

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2019 Neonatal Nursery Medical Protocol Modifications

The following are a list of modifications being performed on a trial basis for 2019. These modifications may become permanent based on their success. Future protocols will be modified as necessary.

This document is to recap some changes as illustration that our protocols are living documents and change as we continue to develop more effective treatments.

Medication & Protocol Modifications

Metro

- Metro is now 0.1cc/lb SID
- Monitor poop to make sure this dose is working

Marquis Paste

- 0.3cc/lb PO SID for 1 day

Panacur

- 0.2cc/lb PO SID for 5 days

Lactulose

- 0.1/lb BID or TID for 7 days for constipation

Prazi (on intake)

- Give on intake only if they have fleas, flea dirt, diarrhea or if they are severely underweight and/or unthrifty (do 1 dose SID for 2 days - can give 1 more dose a week later if needed)

Anemia Protocol (when kittens have pale gums/raised third eyelids):

Start:

- Prazi: see dosing chart on wall- (PO SID for 2 days)
- Panacur
- Marq Paste
- Lixotinic: 0.1cc/lb PO BID for 7 days
- B12: 0.1cc/lb SQ SID for 1 day

Weight loss protocol:

- Start Baytril: SQ SID for 5 days
- if kitten is still not gaining after 48 hours add in Reglan

Severe URI (add to URI protocol):

- Start Cerenia: 0.1cc/lb SQ SID 3-5 days

Cerenia Nose Drops:

- Start when kitten is severely congested
- 0.1cc cerenia mixed with 0.9 sodium chloride
- One drop in each nostril BID 3-5 days

Aspiration protocol:

- TBD - working out costs amoxi vs azith

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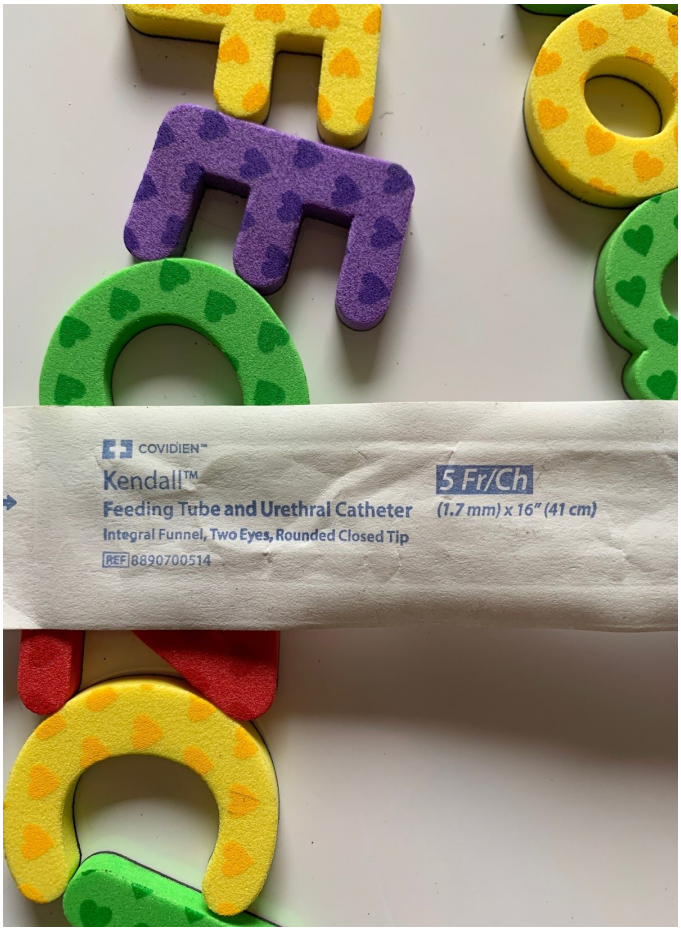
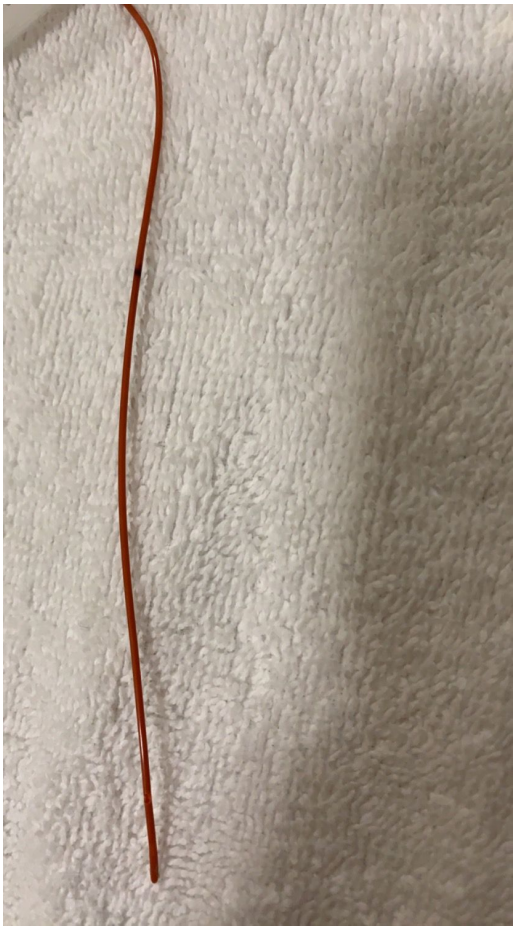
Common Neonatal Supplies

The following are photos of commonly used supplies in our Neonatal Kitten Nursery:

Feeding Tube





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Saline Drops

Albuterol

Mountainside Medical

Albuterol inhalation Solution
0.083%, 3mL, 25/Box

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Parasite Overview
Internal & External

Fleas
Fleas are bloodsucking parasites and, as with ringworm, a flea infestation is a nuisance in a single animal but can be devastating in a shelter. On a mature cat, fleas are not particularly serious, but young kittens do not have that much blood and they are virtually defenseless; they do not groom themselves yet, so they are not scratching. Young kittens can easily get anemia from a flea infestation, which can be life-threatening.

- Flea treatments that are meant for older cats can kill a kitten, so if you find fleas or flea dirt on kittens of any age, alert nursery management so the correct treatment can be administered.
- Over-the-counter flea treatments are not used in the nursery because they are not effective and are much more toxic than what our veterinarians use.

Ticks
We rarely see ticks on our kittens or mother cats. If you think you see ticks, alert nursery management for further evaluation and treatment.

Ear Mites
Ear mites are tiny parasites that live in the ear canal. If you see a dark brown discharge (which can look like dirt or coffee grounds) in a kitten's ears, it is probably ear mites.

- If you see dirt in a kitten's ears, alert nursery management so it can be evaluated and treated.
- Do not clean a kitten's ears without first checking with nursery management. A kitten's ear canal can easily be damaged by the improper use of cotton swabs.
- Ear mites can be passed from one kitten to another, and transmission usually requires direct contact.

Roundworms, Tapeworms, and Hookworms
Worms affect a cat's digestive system and are very common in kittens. You can sometimes see worms in or around a kitten's rectum; you may see a long worm or what looks like rice protruding from its anus. Indications of worms are a large belly, diarrhea, and an inability to gain weight even when eating well. If you see signs of worms, alert nursery management. There are various medications given to the kitten, depending on the type of worm, that easily take care of the problem. Worms can be passed through the feces to other animals.

Coccidia and Giardia
Coccidia and Giardia are very common. They are protozoa that invade a kitten's digestive system and cause diarrhea. These are highly transmissible and can be spread through feces. These parasites are easily treated with oral medications.

Parasites can cause digestive problems as well as diarrhea for the kitten. Diarrhea can be dangerous for a kitten and should be treated as soon as it shows up. Not all diarrhea is related to illness or infection—sometimes it can be a result of a change in diet—but all diarrhea should be reported to the Nursery Manager for evaluation.

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Ringworm Overview
Neonatal Specific

Overview
Ringworm is a fungal infection affecting the skin, hair, and occasionally nails of animals and people. It is in the same family as athlete's foot and is not a life-threatening condition at all; in fact, it does not affect the health or well-being of animals or people. Three species of ringworm fungus most commonly affect cats and dogs. The species that affect cats and dogs can be passed between these two species, as well as passed to humans. It is contagious for people; the young, old, and immune-compromised are more likely to get it. Ringworm is also very contagious to other animals.

Most often it will cause a circular area of fur loss that is red and may be slightly raised. Ringworm can also have other characteristics but these circular, hairless lesions are most common.

Ringworm in an individual cat is a nuisance, but ringworm in an animal shelter can lead to almost unmanageable outbreaks, thousands of dollars in diagnostic and medical costs, spreading among adopters and staff, and an intolerable blow to shelter status in the community. It is vital to have a consistent and effective strategy in place to prevent and manage this problem.

When kittens in the nursery have ringworm, it should be noted on their crate and on the Feeder Board so that feeders know to take extra precautions. Feeders can get ringworm from nursery cats and can also pass it to their pets at home. If the following established procedures are followed, however, the risk of doing so is minimized.

Risk Factors
- Animals of any age are susceptible to ringworm, but animals less than one year old and geriatric animals have the highest risk. Cats have a greater risk than dogs.
- Animals with compromised immune systems and conditions such as FIV, FeLV, pregnancy and lactation, malnutrition, cancer, and stress, or those on anti-inflammatory drugs, can have a higher risk.
- Animals with preexisting conditions that compromise grooming, and those with external parasites such as fleas, are at an increased risk.

How is Ringworm Spread?
Ringworm is most often spread through contact with an infected animal or a contaminated environment and therefore can be a serious problem in a shelter. Ringworm is very durable in the environment, and if left untreated, it can persist for months in carriers, furniture, carpets, dust, and so on; it can also infect animals housed in a contaminated environment. Ringworm can be spread readily through grooming implements, contaminated toys and bedding, or by humans' clothing and hands. It can be found on the hair of animals from a contaminated environment even when the animal itself is not showing any symptoms. In nature, the incubation period for ringworm is between 4 days and 4 weeks. Close contact with the infected animal or its bedding is usually required for transmission.

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Signs and Treatment

Irregularly shaped areas of fur loss; the skin in these areas can appear rough and scaly, and the bald patch is often round. Full-body dipping or spot treatment with a lyme sulfur dip is effective, but it takes time to eradicate the fungus

- Lymdip needs to be diluted at a ratio of 3.5ml of Lymdip into ¼ cup of water
- Kittens under the age of six weeks should not be dipped
    - Dab a cotton ball in the Lymdip and dot onto visible lesions
- When dipping kittens, make sure that they do not get chilled
    - Allow to air dry in a warm kennel. Note that the dip will cause the fur on cats to yellow, but the color fades quickly
- The dip does have a "rotten egg"-like odor, so keep towels used during dipping separate from regular laundry and wear old clothes to dip. Also remove any jewelry or nice clothing that could come into contact with the solution.

Medication is sometimes used but not on very young cats, as it has a very damaging effect on the liver

Sanitation

- If a litter has ringworm, put a note on the crate and on the Feeder Board.
- Use diluted bleach mixed at a ratio of 1:10, bleach to water, on any surface that you or the infected cats touch—bin, scale, table, pen, microwave, snuggle disc, refrigerator, your arms, etc. Leave it on for 10 minutes and then wipe with paper towels before moving to the next litter.
- Gloves may be worn with the understanding that they do not prevent the spread of ringworm. Gloves must be provided by anyone choosing to wear them; the nursery does not provide them since their use is not part of our protocol.

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Neurologic Kitten Protocol

Neurologic Kitten in Nursery

1. Kitten is exhibiting signs of: excessive wobbliness (as determined by manager), circling, falling over, head bobbing, tremoring.
2. Start Clindamycin, 25 mg/mL at the following dosing (by mouth, twice a day, for two days):
    a. < 0.5 pound: 0.11 mL
    b. 0.5–1 pound: 0.22 mL
    c. 1–1.5 pound: 0.34 mL
    d. 1.5–2 pound: 0.45 mL
    e. 2 –2.5 pound: 0.57 mL
    f. 2.5–3 pound: 0.68 mL
3. To make the Clindamycin suspension at 25 mg/mL – mix one 150 mg capsule in 6 mLs of liquid (Karo syrup, Feline oral solution…). Label with drug name and concentration.
4. If signs do not start to improve in 4 days, or if kitten's condition worsens, then schedule appointment with clinic.
5. If signs start to improve within 4 days:
    a. Extend course of medication x 10 more days (two weeks total) at current dose.
    b. After two weeks, increase the dose to the next weight range on the dosing chart and give medication for two more weeks (28 days total). For example: if kitten was getting 0.34 mLs, at the two-week point increase to 0.45 mLs and extend for two weeks.
    c. Kitten should be considered contagious and has zoonotic potential, so staff needs to take precautions when handling kittens and with litter box (washing hands/wearing gloves, etc.). Kittens should not be mixed with other kittens until end of course of medication.

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Ocular Discharge Protocol

Kittens with Ocular discharge in Nursery

1. If kittens have crusty eyes/ocular discharge, start Gentamycin drops: one drop each affected eye at every feeding for 5–7 days.
2. If the "crusting shut" is not improving after 24 hours, then switch to erythromycin ointment: small ribbon each affected eye three times a day.
3. If crusting continues for another 24 hours or if the eyes worsen at any point, continue eye ointment and make appointment.

Never use the bottle on more than one kitten/litter. Dispense the ointment or drops into syringes without needles and use that to treat directly.

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Fading Kitten Syndrome

Overview

Fading Kitten Syndrome is a life-threatening emergency in which a kitten, sometimes one that was previously healthy, "crashes" and begins to fade. This can occur with kittens who have a mother, as well as those who do not, so watch for mother cats pushing away a kitten and not caring for it. If not dealt with immediately, this can result in death. There is not always a clear reason for this condition. It has been linked to birth defects, environmental stress, and infectious disease. Early detection and treatment are imperative, but even with tube feeding, rehydration, and monitoring, many of these kittens will still die.

Symptoms

- Low body temperature; the kitten feels cool or cold to the touch
- Extreme lethargy; not getting up, unable to stand, not responding when pet, can't hold its head up
- Gasping for breath; mouth breathing
- Meowing, crying out

When a kitten is fading, two things are happening: hypothermia (being too cold) and hypoglycemia (low blood sugar). You must get the kitten's body temperature up and raise its blood sugar, or it will die.

Act Immediately!

Process

- Get the kitten warm.
    - Immediately wrap it up in a towel like a burrito, leaving only the kitten's face exposed. Its whole body—tail, ears, and paws--should be in the towel. **Do not take the kitten out of the towel to adjust it or check on it.** Every time you take the kitten out, you will make it cold again, even if it is only for a second.
    - Wrap a heating pad set on low around the towel (to avoid burns) as an extra source of heat. Secure it around the towel so it stays in place.
        - The kitten's body cannot warm itself with only a towel; you have to apply extra heat. Your own body heat won't work because it is lower than what a kitten's should be.
- As soon as the kitten is warmed, work on raising its blood sugar
    - Put some sugar or Karo syrup in warm water at a ratio of 1:1. Put some of this solution in a syringe and give the kitten three drops every three minutes.
        - If the kitten is not swallowing, try rubbing some Karo or sugar water on its gums and tongue.
        - If we have dextrose or glucose in the nursery, that can be used in place of sugar or Karo. If we have dextrose, it will be in the refrigerator.
        - Whatever sugar source you use, take care not to contaminate anything by double-dipping syringes.
    - Be sure you are administering the sugar every three minutes.

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It may seem like you are not doing enough to help the kitten, but this is the only treatment for a fading kitten. The medical team cannot and will not do anything other than the steps above for a fading kitten. Be sure to alert the Nursery Manager and Assistant Manager that the kitten was fading and make clear notes about the episode in the kitten's chart and on the Feeder Board. If the kitten passes, follow the deceased kitten protocol and be sure to alert the Nursery Manager and/or Assistant Manager.

If the above steps are followed, we generally have success with these kittens. Keep in mind that it can sometimes take hours for them to come out of it and start acting normal again. Know that even with love, attention, and the perfect treatment, some fading kittens still won't make it.

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Deceased Kitten Protocol

Overview

It is never easy to lose a kitten, and it affects each person differently. Understand that we are operating against nature most of the time, and the statistics are against us. If you ask a veterinarian, he will tell you that an orphan kitten has a less than 10% chance of survival. Even against the most incredible odds—remember, most of the kittens and cats we take into our program arrive sick or injured—our survival rates have been 80% and higher since the inception of this program. We focus on the positive outcome of the work we do, but we do not pretend that we can save every kitten we rescue.

Process

- Make sure the kitten has passed. If you are not sure, check with the Nursery Manager, Assistant Manager, Med Tech, or a more experienced feeder. A very cold, hypoglycemic kitten can appear to be dead, but may not be.
- Wrap the kitten in a cloth and place it inside a Ziplock bag or other bag.
- With a *Sharpie*, write the kitten's name and A# on the outside of the bag. This is very important, as all deceased kittens must be accurately reported in APA! records and must also be reported to AAC.
- If the kitten is not properly identified, someone will have to inspect the kitten later to determine its true identity. Please be sure the kitten is correctly identified and be sure to use a *Sharpie* to write the A# and name on the bag.
- Place the kitten in the freezer.
- Remove the kitten's Daily Care Sheet from the file, write "DECEASED" on it, and put it in the nursery office.
- *If this was the only kitten in the litter*, remove its information from the Feeder Board so subsequent feeders will not be alarmed that it is missing.
    - Do *not* write on the board or in the litter's file that the kitten has passed; do *not* send any messages to the group that the kitten has passed.
- Notify the Nursery Manager and/or Assistant Manager that the kitten has passed.

When you arrive for your shift and find that a kitten is gone from the nursery, please refrain from asking other feeders if the kitten has passed. This is often distressing to other feeders and is not conducive to a pleasant atmosphere in the nursery. If you are particularly interested in the fate of a kitten, ask the Nursery Manager about it directly.

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Bite Protocol

Process

The following is the APA! Bite Protocol and is to be followed by all staff, volunteers, fosters, and the public.

1. Wash bite wounds with soap and water immediately.
2. Stop bleeding with pressure. If bleeding is severe, call 911.
3. Report the bite to the Nursery Manager *[email address*] or to *[Executive Director of Organization]* at *[email]* the same day the incident.
4. Did the bite break the skin?
    a. If no, no further action is required.
    b. If yes, is it punctured or scratched?
        i. If scratched, keeping an eye out for redness or infection should be sufficient.
        ii. If punctured, you will need oral antibiotics. Please see your personal physician as soon as possible to prevent sepsis, loss of function, or even death.

Bites are a very dangerous issue and must be reported to APA! management. An infected bite can cost well over $10,000 if it is not treated immediately and can even cause loss of function. If the animal has rabies, a bite can cause death for the human, as rabies is 100% fatal.

Although APA! is not responsible for medical bills associated with bites, we can often instruct you on what to do after a bite, and we need to keep records for any bite that occurs.

If you choose not to seek medical help, APA! cannot be held liable for any consequences that result from not taking appropriate action.

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Panleuk Protocol and Medications

Testing

Kittens that are sick with panleuk will have a combination of some or all of the symptoms below:

- inappetance
- vomiting
- diarrhea

If the kitten is in the nursery - parvo test.

If the kitten is in foster care - do not test but start the Panleuk Medications (see below). We do not test in foster because our treatment plan does not depend on the test results.

If the foster insists on knowing or there are other kittens at risk - test.

Medications

RX: Enrofloxacin (100mg/ml) - 2mg/lb SQ in fluids SID x 3 days
This is a tiny amount (0.02cc per pound) - less than a drop. Do NOT overdose!
Injecting without diluting will cause an abscess

RX: Polyflex 0.05cc/lb BID x 3 days (refrigerate)

RX: Cerenia (10mg/mL) <1lbs 0.05cc, 1-2lbs 0.1ml, >2lbs 0.04cc SQ SID x 3 days (refrigerate)

RX: LRS 15cc SQ per pound of body weight TID x 3 days

Feeding and Care

Kittens should be force fed gruel or baby food as often as possible. Nursery force feeding guidelines should be followed. They should be kept warm and cozy to prevent Fading Kitten Syndrome!

After 3 normal stools or 3 days of eating well and no vomiting they can be considered negative or tested if in the ward.

Each kitten must be bathed TWICE to get all the poop off and dried to prevent them from getting chilled (warm towels from the dryer work well and you can use a hair dryer on lowest setting but be very careful to not burn their fragile skin!)

Panleuk is VERY contagious just like Parvo! Fosters should be aware especially if they have unvaccinated cats or kittens under 4 months of age- Please ask and inform!

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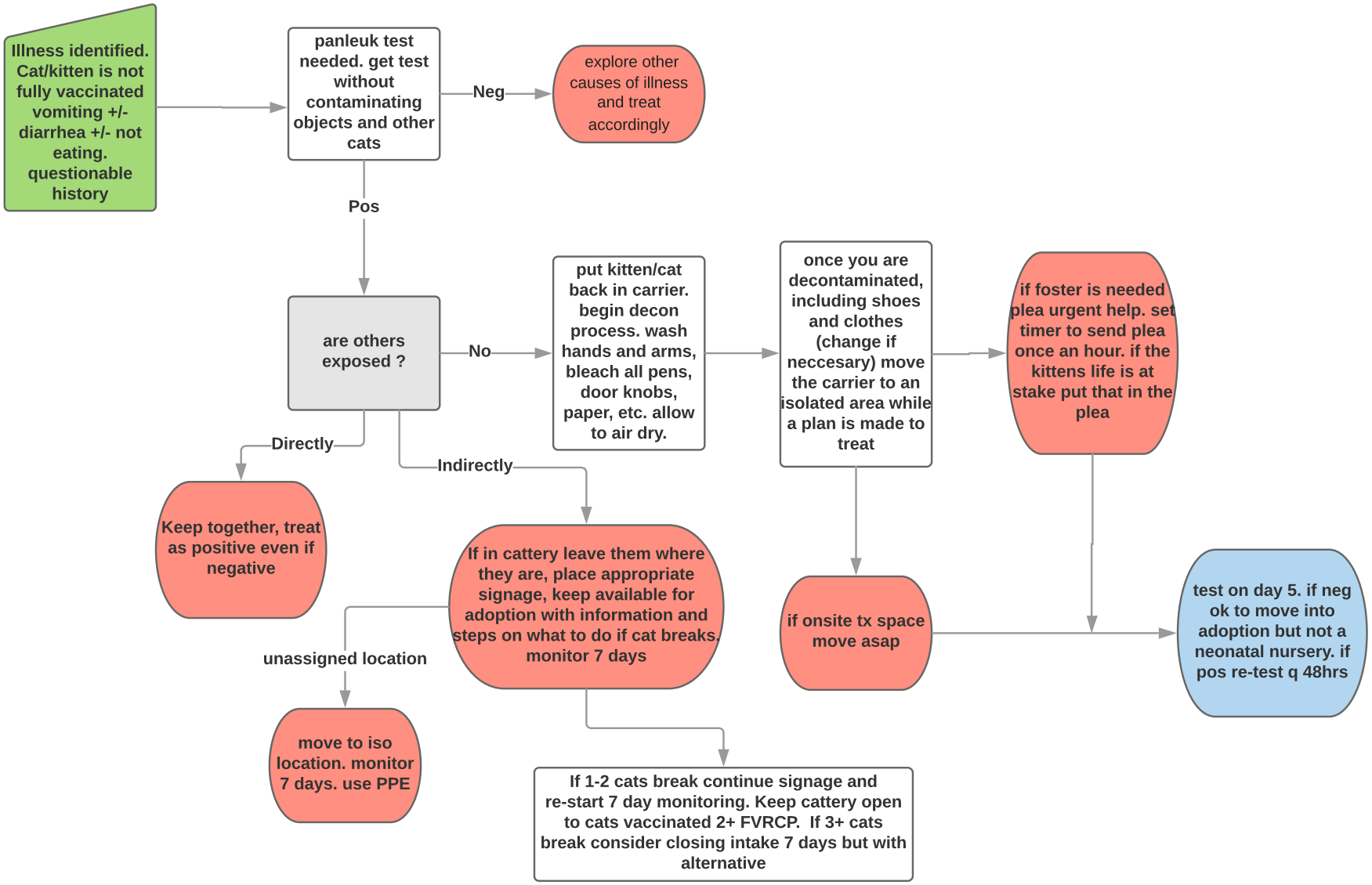
Jordana Moerbe | July 6, 2018

Panleuk Positive Flow in the Shelter



indirect exposure - same transport, kennel above, below, next to positive

direct exposure - same kennel or were in same kennel in last 48hrs

Panleukopenia FAQ for Fosters

What is Panleukopenia?

Panleuk is most often referred to as "feline parvo". It is a virus that is transmittable through fluids and feces. Feces being the most significant. Panleuk can live and be transmitted on most all surfaces. The incubation period is 3-5 days but can incubate as long as 14 days. Panleuk is made worse when other viruses are present (URI).

Why is there an outbreak?

Because Panleuk is spread on all surfaces it is very difficult to eradicate. Microscopic particles of the virus can live on anything and it can live in the environment for a year if not cleaned with a parvocidal cleaner or on a surface that is uncleanable (dirt), making the virus highly transmittable.

When does it affect kittens?

Panleuk affects unvaccinated cats and kittens. Kittens are most susceptible between the ages of 3-12 weeks of age when their mothers antibodies are still "interfering" with the vaccine and they are either too young to be vaccinated or recently vaccinated.

What do I watch for?

The most common symptoms of Panleuk are: vomiting, anorexia, diarrhea, lethargy, sudden death. **Isolated symptoms are not always indicative of Panleuk. Many other illness can cause these same symptoms and almost all kittens have diarrhea that is not Panleuk! Normally we see a combination of the above.

What do I do if I see signs?

Contact the medical team as soon as possible. A clear medical history of the animal is extremely important. Often times the "trend" of the kittens health is just as important as the current symptoms. Treatment should start within 12 hours of first symptom so please act fast!

What does treatment consist of and how long does it last?

Panleuk is treated using injectable antibiotics, anti-diarrheals, anti nausea drugs, and fluids as well as force feedings. Treatments/feedings are done 2-6 times a day for approx 3-7 days.

Why can't I bring my sick kittens back to the shelter?

Because panleuk is so contagious bringing them back to the shelter puts every other kitten at risk. Additionally, the kitten has a better chance of survival with one on one care. YOU can provide the daily care needed for the kitten! Being in a home and receiving your care is key to saving lives versus living in a shelter with many other kittens that are all competing for care. We need you but the kitten needs you more! Also, your house has already been exposed to the virus so having the kitten leave will not "decontaminate" your space. It can be scary but we can teach you everything you need to know.

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What steps is APA taking to control this outbreak?

A) APA has made a Panleuk Ward and has put into effect strict guidelines to prevent cross-contamination between that and the nurseries.
B) APA has created and effectively put into use a medical protocol to treat and release survivors.

What is the survival rate?

About 50% with early, aggressive treatment

What do I do if a kitten becomes critical?

Notify medical staff asap. Vet Techs are on call 24hrs a day. Start Fading Kitten Protocol. medical clinic 512-466-0720, medtechs@austinpetsalive.org

What do I do if a kitten dies?

If a kitten dies notify staff in either the medical clinic or the nursery. Because it is contagious it is best not to bury the body. You can bring it to the medical clinic as soon as possible. Wrap the body in a small towel and plastic bag and label it with either it's name or A#. If you cannot come that day storage is best in a freezer. When you bring it to the clinic let staff know it died of Panleuk and who the kitten is.

Thank you for caring for these kittens!!!!

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How To Disinfect A Home After Panleuk

1. Wash all fabrics the cat has touched.
    a. Use bleach in the warm-wash cycle to kill any Panleuk that may be present in the fabric.
    b. Include any bedding, blankets, towels, pillows, rugs, or clothing the cat has had contact with.
2. Disinfect flooring.
    a. Use a solution ratio of 1:31 (water: bleach) to disinfect hard surfaces such as tile, wood, cement, and linoleum.
    b. Use a stiff scrub brush to thoroughly clean the entire floor, including corners.
    c. Pour the bleach solution down the drain.
    d. Mix another bleach solution and repeat the process to ensure that all traces of the virus are killed.
3. Wipe down counters, cabinets and doors using a large spray bottle filled with a solution of two parts bleach to one part warm water.
    a. With a sponge, use small circular motions to thoroughly scrub the surfaces with the bleach mixture.
    b. Rinse the surfaces with warm water and allow to dry.
4. Remove all feces on your property.
    a. Place feces in a plastic trash bag and seal tightly.
    b. Remove and dispose of the bag away from the property.
    c. Disinfect areas where feces were found with a mix of two parts bleach to one part water.

Guidelines for Fostering after PL

If your PL kittens were kept in an isolated, separate area (like cage or hard-scrubbable bathroom), then you can foster unvaccinated kittens once you have decontaminated as per above protocol, and replaced all supplies (litter boxes, scoops, bowls, toys etc).

It is strongly recommended that for a period of 6 months you keep any new kittens in a completely different isolated area than the PL litter had been kept in previously, as an additional measure of caution. Post-PL kittens are a great choice for these homes too, as these kittens have gained immunity and are no longer at any risk from the virus.

If your PL kittens were kept in a non-quarantined area, however, (ie throughout the house / carpeted area unable to be hard-scrubbed), you will need to limit your fostering for a period of 1 year to post-panleuk kittens and/or kittens who are over 4 months and have had a minimum of 2 vaccines.

We appreciate your partnering with us to try and keep our kittens as healthy and happy as possible.

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