Knocking the Snot Out of URI: Saving Shelter Cats' Lives with Treatment and Prevention
Live Webcast Audience Questions and Answers

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1) Q: At our animal shelter we see a lot of calicivirus. What is the best way to treat this virus?

A: Supportive care and, if appropriate, broad spectrum antibiotics and pain control (especially if oral ulceration is present). There is unfortunately no treatment that targets the virus itself.

2) Q: Do you find that a cage-free environment cuts down on spread of URI?

A: Either caged (or condo, run, room, etc.) or cage-free housing can be a fine choice for controlling URI, provided the housing is of high quality in both cases. For cage-free, that means small groups, ideally less than 5 cats per group (because introducing a new cat into the group is stressful for the cat and the group), with at least 18 square feet of floor space per cat. So group housing isn't a space saver over single housing, but it can provide some nice options for social cats to enjoy a more stimulating environment. Since some cats simply aren't cut out for communal living, it's important to also have some high quality single housing available.

3) Q: Our shelter takes in 13,000 – 15,000 animals a year, and about 800 – 1,000 cats per month during the summer. Do you recommend that we automatically take cats out of adoption when they start sneezing or when they present nasal discharge?

A: This is a common question. If your adoption housing and staffing is such that a sneezy kitty could hang out in its cage for a few days without being handled by staff or volunteers in random order with the healthy cats, it's ok to leave mildly ill cats up for adoption. This is especially a good idea if conditions in isolation are such that once cats go in there, they tend to get really sick (hopefully a problem the shelter will solve in the long run with improved isolation facilities or foster care for URI cats). If you do this, place a sign on the cage saying something like, "I'm under medical care – staff only to handle me please – clean cage last". Then make sure any sick cats are handled last, using protective clothing just as if you were caring for cats in isolation. If your adoption area is poorly supervised such that adopters or volunteers could be in there touching and handling the sick cats and then handling the healthy cats, then sick cats should be removed from the adoption floor right away. In any case, if they get so sick that they need antibiotics, they should be in

isolation. Having a bunch of sick cats in adoption on antibiotic treatment creates a risk of passing drug resistant bacteria on to visitors.

4) **Q: What is the barrier to more effective URI vaccines? We get dismayed that vaccines don't really prevent clinical disease.**

A: The sad news is that even the cat's own immune system can't create a very effective immune response against herpes or calicivirus, hence the carrier state is common for both these viruses. A vaccine will never be more effective than the animal's immune response to the real deal. Adding to the difficulty for calicivirus is the fact that this virus is highly variable (similar to influenza, where we get a new vaccine every year to match currently circulating strains). Vaccine companies simply can't afford to make this kind of investment for cats.

5) **Q: How do I prevent the spread of URI in a foster-based program where cats stay in our homes?**

A: Similar to in a shelter, the most important thing is controlling clothing and "stuff" (bedding, litter and supplies) as well as hands between rooms housing sick and healthy cats. The truth is most shelter URI is herpesvirus and poses little risk to people's pets (pet cats are vaccinated and if not highly stressed, unlikely to get ill even if exposed). However, as I mentioned, calicivirus can infect even vaccinated pets and sometimes cause very severe or fatal disease. I've gotten a few sad phone calls about these situations. Two things foster parents can do to reduce this risk is to keep their own pets up to date on vaccines (consider yearly booster with the intranasal calici/herpes vaccine, or consider opting for the two strain calicivax for your triannual booster; and consider intranasal Bordetella vaccination for your cat if this is something your vet offers); and be aware of the pattern of respiratory disease at the shelter for which you foster. If there is unusually severe respiratory disease, and especially if otherwise healthy vaccinated adults are affected, consider not fostering URI cats unless you can provide super careful isolation (boots, full body suit, gloves between handling foster cat and your own cats).

6) **Q: As a foster mom did I understand that shelter cats/kittens be given bordatella vaccine the same as dogs?**

A: No, in general we don't recommend Bordetella vaccination for shelter cats unless laboratory testing has demonstrated Bordetella is a problem at that particular shelter. It is not commonly associated with shelter URI in the United States according to current studies.

7) **Q: Should a cat with calicivirus be separated from other URI cats and kittens in the ward, rather than be in the same room in adjacent cages?**

A: Ideally, yes.

8) **Q: Have you seen a connection between feline idiopathic vastibular disease and the recrudescence of herpesvirus?**

A: No, I haven't.

9) **Q: We had a mild case of calicivirus in our shelter and the symptoms are clear now. Our vet says we should not adopt out any to multi-cat homes because they shed the disease for the rest of their lives. Is this correct?**

A: No – As many as a quarter of cats from a multiple cat background are shedding calicivirus, so while shedding can be long term, it is not a reason in itself to take any special precautions about adoption. Shelters, breeders and pet stores adopt/sell cats shedding calicivirus all the time without knowing it. The tricky thing about calicivirus is that even a mildly affected, recovered cat can be a risk to others IF she was part of a severe outbreak (especially within the preceding 1 – 2 months). This is the only circumstance in which caution is warranted. For more on this, see our website: http://www.sheltermedicine.com/node/38#Making.

10) **Q: What kind of testing is done for a severe case of calicivirus?**

A: This is a bit complicated. See our website for the details: http://www.sheltermedicine.com/node/38#diagnosed

11) **Q: Is it more difficult for an FIV+ cat to overcome calicivirus. Do they require other treatment?**

A: It is more difficult. Unfortunately there is no specific treatment for calicivirus, so FIV cats should be treated the same as others, with supportive care, pain control and broad spectrum antibiotics as needed. These cats should ideally not be in shelters around other cats, as they will tend to shed the virus, and shed potentially harmful "mutant" viruses at a higher rate than healthy cats. Of course the shelter is also a risk to symptomatic FIV cats, so it's best for everyone if these cats don't remain in the shelter.

12) **Q: Two questions: 1) Our shelter vaccinates for FVRCP, but last season we also administered a separate calicivirus vaccine for a bad strain. How effective is that treatment plan? And 2) at what point do you consider the FVRCP vaccine to be fully effective in kittens?**

A: The two strain vaccine provides some additional protection, but requires 2 vaccines, 2 – 3 weeks apart, plus a week to provide protection. This is true of all respiratory vaccines. In kittens, we consider vaccines to be fully effective one week after administering a vaccine at 18 – 20 weeks of age. This is most important for panleukopenia.

13) Q: Why is air quality a defense if the diseases aren't airborne?

A: Because all the nasty stuff in the air (disinfectant, ammonia, litter dust) can irritate the cat's respiratory tract, making them more susceptible if a virus or two does happen to land on their respiratory mucosa (e.g., carried on someone's hands or clothes). And then if they do get an infection, a bunch of bacteria in the air will colonize the compromised respiratory tract causing more severe disease.

14) Q: How often do you see pseudomonas as the causative bacteria?

A: Rarely – in less than 3% of cases in one study [1].

15) Q: At the last North American Veterinary Conference there was a presentation recommending treating URI with doxycycline for 14 days, your opinions?

A: Treatment should be continued until resolution of clinical signs, not beyond, unless you have confirmed or strongly suspect a deep bacterial infection or Chlamydia.

16) Q: What treatment do you recommend for calicivirus since an antibiotic won't treat it and there are no antivirals that work? Do you recommend using the intranasal herpes/calici vaccine to "treat" calicivirus?

A: There is no evidence that the intranasal vaccine works as a treatment. Supportive care, pain control, broad spectrum antibiotics if indicated…alas, that's all we've got.

17) Q: Can you discuss briefly how to take samples for PCR (without getting oral/nasal contaminants?)

A: See the article on page one of our December 2011 newsletter on testing dogs. Same principles
apply. http://www.sheltermedicine.com/sites/default/files/uploads/documents/Shelter%20Med%20Times%20December%202011.pdf.

18) Q: What is the risk of URI viral cats coming down with pneumonia/lower respiratory tract infections. I am dealing with feral cats, with limited resources and when to treat vs. wait it out.

A: It absolutely depends on the condition of the cat and the conditions under which the cat is being treated. In otherwise healthy-ish (not massively immunosuppressed or stressed) cats, in a nice clean environment (e.g., outdoors!) it is not common.

19) Q: Is unilateral nasal discharge more common in a specific disease related to URI?

A: No…but if it persists, think foreign body, tooth root abscess or nasal polyp as possible suspects.

20) Q: What are some good products to boost a cat's immune system?

A: Great care, a place to hide, a soft place to sleep, a clean litter box, good food, clean water and an absence of dogs and dog noise.

21) Q: Does UC Davis have helpful info for vet hospitals as well as shelters? If so, may I have a link?

A: Check out our information sheets at http://www.sheltermedicine.com/shelter-health-portal/information-sheets. Many of these have info for vet hospitals and boarding facilities as well as shelters, and will certainly be helpful for hospitals working with adopted animals or those in foster or rescue care.

22) Q: What about recurring mouth ulcers and inappetance without any ocular discharge? Would you still repeat the antibiotics for 8 weeks if there was initially a good response?

A: No – individual diagnostics should be done in this case. This is not a common sequel to URI, either from calicivirus or herpesvirus.

23) Q: In the shelter, should we re-vaccinate the adult cats with FVRCP after their initial vaccine on intake? If so, how long after their initial vaccine?

A: Yes, ideally, especially if cats often stay for a month or two or longer. Re-vaccinate 2 - 3 weeks after the initial vaccine.

24) Q: If you had to pick one place to put in port holes in cat cages, would you choose the regular housing or isolation housing?

A: Regular – hopefully then you will have fewer cats ending up in isolation.

25) Q: Is there a good supplement or vitamin for URI?

A: B vitamin has sometimes been recommended to help with overall well-being and appetite. There is no supplement or vitamin known to prevent URI. As I mentioned, Lysine has been disproven as a preventative, but the jury is still out on whether it has value as a treatment. It may or may not.

26) Q: What would you recommend for a cat with chronic eye discharge?

A: Rule out Chlamydia as a possible chronic cause. If possible, try sending these cats to foster care. Sometimes the stress of being in a shelter is enough to keep the eye discharge going and it will clear up on its own (though it may recur when the cat is stressed, such as when it moves to a new adoptive home or the owners travel). These cats do not generally

pose an infectious risk to others. In some cases, the tear duct has been damaged and the cat will always have eye discharge.

27) **Q: We use intranasal PRC vaccine, and though the vaccine states that the booster is not needed in adults, our veterinarian has us giving a booster with subcutaneous vaccine in one week. Should we booster in two weeks or switch completely to subcutaneous vaccine and booster in 2 weeks with kittens and adults?**

A: Switch completely to subcutaneous (SC) to protect your cats against panleukopenia, unless you never, EVER see it in your community. Whatever vaccine you use, booster after 2 – 3 weeks versus one week. If you're going to use both SC and intranasal (IN), give them both immediately upon intake, drop the panleukopenia part of your IN vaccine, and just give that with the 3-way SC.

28) **Q: So is milk okay to suspend doxycycline in small quantities? I know milk isn't great for cats. The FDA says whole milk, does KMR have citric acid?**

A: Milk of any kind is ok. I don't think KMR has citric acid, but please double check ingredients.

29) **Q: Did the studies showing no help with lysine give lysine as a bolus dose rather than gradually through the day in food? My understanding is that giving lysine as a large "dose" works better than getting it gradually during the day.**

A: In one study, it was initially given as a bolus and then fed in a small amount of wet food, which was generally quickly consumed. There was still no benefit. Bolusing cats daily can be stressful for the cats and provide a good opportunity for disease transmission – so it is not recommended.

30) **Q: What should the air conditioning temp be in our cat habitat?**

A: Cats are very adaptable provided they have enough room to adapt – a soft cozy place to cuddle up and a smooth firm place to cool off. As long as the temp is comfortable for people, it should be fine for cats.

31) **Q: Air quality basics slide – what do you think of having a cageless room as a URI hospital room?**

A: Cats like to withdraw when they are sick and I think it's a bit much to ask them to negotiate all the new social relationships of a room full of cats when they're not feeling their best. Additionally, it will be impossible to monitor fecal and urine output so you might miss some signs of diarrhea or dehydration. So my inclination would be no, though if the choice was small, airless and dismal cages versus a roomy, airy, pleasant space, you could give it a try for mildly ill cats and watch the cats closely for signs of social stress.

Keep the group size small and make sure there's plenty of places to hide, and also that cats are systematically monitored on a daily (or more) basis. If anyone has diarrhea or more severe signs, cage them up as needed to figure out what's going on.

32) Q: Is higher or lower room temperature better to discourage infection and transmission?

A: In general cool, moist conditions favor pathogen survival. But as long as you're using a good disinfectant and getting everything thoroughly dry between uses for at least a few hours, you should be fine at any temperature that's reasonable for humans.

33) Q: Our cats live in "havens" of 4 – 18 cats each. They are free to roam in their haven (more cats = bigger room). Is this ok?

A: A smaller group in a smaller room is ideal to reduce turnover and the attendant social stresses. Especially for cats unlikely to stay a long time, try to break up larger rooms with lightweight (but at least partially opaque) barriers so that group size is reduced.

34) Q: Is it better to give a cat 7 days to acclimate before taking for spay/neuter?

A: Not necessarily. That can lead to an increased length of stay, which means more crowded holding areas, and then the cats can get stressed from surgery and break with URI afterwards anyway. And, having a bunch of intact cats around is stressful for all concerned. If possible, perform spay/neuter surgery right away or at the end of your required holding period. If you work with a long-stay shelter or sanctuary with just a handful of cats coming and going at any given time, this probably doesn't make as much difference.

35) Q: I volunteer at a no-kill, free roaming cat shelter that has rampant URI. Will we ever be able to get rid of this under those conditions?

A: Yes! There are plenty of no-kill free roaming shelters that have very little URI. In fact, these shelter types often have lower URI than shelters with higher turnover. The same principles apply: excellent care from intake onwards; removal and treatment of sick cats; diagnostic testing if something unusual is going on. Consider a "fast track, slow track" system where easy to adopt cats and kittens are kept in more traditional housing for the first two weeks, handled by different staff, or staff wearing different protective tops.

36) Q: When cat adoption rates are dismally low, how does reducing capacity and increasing space per cat reduce euthanasia rates?

A: Well, if adoption rates are dismally low, reducing capacity isn't going to magically raise them all by itself. It will just mean each cat in your care gets better care, and you spend less money on daily care of cats, which hopefully will leave a little more time and

energy to figure out why adoption rates are so low (and change that), or focus your efforts on keeping cats out of the shelter in the first place if admission is likely to result in euthanasia. Remember, no matter how many cats you keep at once, in = out in the long run. If a shelter admits more cats than they release alive over time, they will eventually fill up and then have to euthanize the ongoing difference. There are only two ways to change that (reduce in and/or increase out alive), which is why I'm so happy to see more discussion of programs like "feral freedom" and scheduled intake which help shelters have alternatives to admitting cats they know won't be adopted.

37) Q: At my shelter there is no dishwasher and the dishes are not soaked in a disinfectant. So they are just cleaned with dish soap on a sponge. Is this bad?

A: Yes – even more so for panleukopenia spread than URI. Give dishes a two minute soak in a good, rapid acting disinfectant like accelerated hydrogen peroxide or Trifectant.

38) Q: How many cats do you recommend to be housed together per square foot?

A: 18 square feet per cat in group housing! Check out this free webcast on cat housing: http://www.maddiesfund.org/Maddies_Institute/Webcasts/Fixing_the_Feline_Housing_Crisis

39) Q: What about antivirals?

A: They can be helpful in individual severe cases, but not practical (nor necessary) for routine use in shelters. Good quality care, good isolation housing, effective antibiotics when needed should do the trick for the vast majority of cases.

40) Q: If you have a very financially concerned shelter supervisor, what are the best "small steps" you could take to introduce these changes?

A: Spot cleaning, scheduling intake so you don't get overfull, opening windows/doors to improve air quality, being conscious of working quietly when cleaning and caring for cats, getting some used smocks and wearing them when treating sick cats and changing before going on to care for others…lots of things that can be done for free or cheap to reduce URI risk.

41) Q: We have an open cat room where the cats are not kept in cages. Should we quarantine cats before introducing them to the room and if so, how long?

A: 1 – 2 weeks – see fast track/slow track answer above (question 35) for a shelter with mostly group housing – make cats available for adoption during "quarantine" unless they are from a very risky background such as a shelter with severe panleukopenia problems. Make sure quarantine housing quality is good – big, comfy, airy.

42) Q: When handling a spurt of confirmed calicivirus, is it better to disinfect kennels daily or spot clean each sick cat kennel?

A: Still spot clean, but clean the heck out of the kennel when the cat is gone (and be extra careful about wearing protective clothing and gloves which do not leave the treatment area). Remember, as long as the cat is in there it will immediately re-contaminate the environment with its own germs.

43) Q: How do you make doxycycline compound in the shelter? How is it stored and how long is it good for?

A: See our website http://www.sheltermedicine.com/node/255. It is good for up to two weeks.

44) Q: Can a cat get parvo from a dog?

A: Cats can carry canine parvovirus, and in some cases can get sick. Other cats show no signs, but can transmit the disease to dogs. Cats should never be in isolation with sick dogs.

45) Q: Are there any easy to detect different physical signs between calicivirus and chemical burns?

A: No, there's really not. Chemical burns tend to respond more quickly to treatment as long as the source of the burn is removed, the cat is bathed with care, and pain control and antibiotics given.

1. Schulz, B.S., G. Wolf, and K. Hartmann, *Bacteriological and antibiotic sensitivity test results in 271 cats with respiratory tract infections.* Vet Rec, 2006. **158**(8): p. 269-70.