

Management of infectious diseases in shelters



The following recommendations concentrate on infectious diseases in rescue shelters (places where cats are kept temporarily to facilitate finding their legal owner or a new guardian). ABCD states clearly that keeping cats in shelter situations should be avoided as far as possible and should only be the last option - with attempts being made to rehome unwanted cats, and especially kittens, without recourse to a shelter. However, where keeping cats in rescue shelters is necessary, good practice should be adopted to minimise side effects. The following recommendations should be considered to minimise the spread of infectious diseases within the shelter.

Factors contributing to the risk of infectious diseases in shelters

- According to regional situations, in some (or even many) cases, all incoming cats need to be accepted.
- Cats might be persistently/latently infected with infectious agents.
- High turn-over of cats with new cats often housed alongside longer term residents.
- Often a no-kill policy is maintained.
- Concurrent factors like stress, poor nutrition etc. facilitate spread of infectious agents and development of disease.
- Shelters are often short of money, resulting in overcrowding, inadequate hygiene, underutilisation of vaccination as well as lack of testing for infectious diseases.
- The situation may vary markedly between different shelters, countries and regions.

Measures aimed at reducing the spread of infectious diseases include: regulation of housing conditions, quarantine, good husbandry, testing for infectious diseases, vaccination, good hygiene management and stress reduction.

Housing recommendations / accommodation

In general four separate areas are required:

1. **Quarantine area** for incoming cats to identify those individuals incubating infection: In state-of-the-art shelters, the housing is such that all cats are effectively in quarantine. If this is not possible, for cats which are not (re)homed earlier, the duration of stay in quarantine ideally should be 3 weeks as a minimum, and 6 weeks in regions with higher risk for FIV- and/or FeLV-infection (the period for FIV seroconversion and for becoming positive for FeLV antigen may be unusually long).

2. **Isolation facilities** for sick or potentially infectious cats with strict separation from the quarantine area and other residents, preferably in a separate building.
3. Accommodation for **clinically healthy, FIV and FeLV negative cats that are vaccinated against FPV, FHV and FCV**: ideally in rooms of small groups of cats. Ideally, in shelters, cats are housed individually or only with cats from the same original household. Adjacent outdoor area is optimal, with sufficient fencing to ensure that interactions with other animals (including birds) are prevented. Potential new owners should be able to view the cats.
4. Accommodation for **pregnant and lactating queens and their kittens** in a separate area, ideally actually outside of the shelter with “foster families”.
 - At the entrance to each section washrooms or facilities for hand washing, cleaning overalls, disinfection measures and footbaths (if no overshoes are used) are needed.
 - Equipment for cleaning, disinfecting, feeding etc. should be available for each area and be kept strictly there (colour coding can be used for each area).
 - One litter tray for each adult cat (ideally plus one) should be provided, placed away from food and water bowls.
 - Equipment for food and water supply and environmental enrichment are needed in sufficient numbers and must be easy to clean / disinfect.
 - Cages should only be used for medical/surgical purposes and routinely for the quarantine period; regional legislation must be considered (including adequate size of cages).
 - Animal density should be kept as low as possible in order to reduce stress and prevent the circulation of pathogenic microorganisms. ABCD recommends keeping groups of ≤ 3 cats per room; with higher numbers the risk of cross infection increases dramatically and with groups of >6 cats some infections are likely to be always present (e.g. coronavirus infections).
 - Suitable environmental temperature (15-21 °C), good air quality and prevention of noise and other unnecessary stressors.

Standard of care for incoming cats

- Full health check by a veterinarian.
- Look for the presence of microchips; if no chip is detected, the cat should be chipped.
- Deworming and treatment for external parasites.
- In areas endemic for heartworms (*Dirofilaria immitis*) testing and preventive measures should be implemented.
- Testing for FeLV and FIV infections, at least in shelters where contact between cats is allowed; retesting of FeLV antigen- and/or FIV antibody-negative cats 6 weeks later in areas with high FIV or FeLV prevalence. After FIV infection it may take 6 weeks or longer for seroconversion. After FeLV infection, antigen may be detectable starting from 4 to 6 weeks after infection. Ideally cats are also tested by PCR for FeLV proviral DNA to identify also regressively infected animals. Kittens up to 6 months of age might still test positive for FIV due to maternally derived antibodies and may not be infected; such cats should be retested after the age of 6 months.
- Cats testing positive for FIV, FeLV or both should be housed separately and, if healthy, adopted out as soon as possible - but only to indoor-only single-cat households. Prospective owners should be informed about the existing infection and the consequences (potential

recurrent illness, responsibility to avoid virus spread to other cats, shortened life expectancy, which is especially the case for persistently FeLV viraemic / antigenaemic cats. The mean survival time is significantly shorter in FeLV viraemic cats compared to FeLV negative ones.

- Paying attention to potential risks of zoonotic infections (e.g. ringworm and rabies).

Standard of care for cats after having passed quarantine

- Cats should be re-homed as soon as possible!
- Cats which are not re-homed should receive regular veterinary checks (intervals recommended by the veterinarian).
- Special attention should be paid to signs of stress, frustration and other behavioural changes.
- Regular deworming, flea treatment (and heartworm prevention in endemic areas) should be performed.
- FeLV and/or FIV positive cats should be kept separately until adoption (avoiding mixing of FeLV and FIV positive cats). Their immunocompromised status has to be considered; therefore their health status has to be monitored very carefully. Modified live vaccines should be avoided.
- Ideally, cats should not be euthanised unless in moribund or terminal condition or if appropriate treatment is not available and cats are suffering. The establishment of an Ethics Committee can be helpful.

Vaccination recommendations

- Healthy cats, aged at least 6 weeks (in the face of an infectious disease outbreak maybe even younger) should be vaccinated against FPV, FHV and FCV, with continuation of the vaccination course until the age of at least 16 weeks.
- Healthy cats older than 16 weeks with unknown vaccination history should receive a single dose of FPV modified live virus vaccine and two doses of FHV and FCV vaccine 2-4 weeks apart.
- Revaccinations (for cats with complete vaccination history) are recommended annually against FHV and FCV and against FPV at intervals of three years, unless special conditions apply.
- For sick and pregnant cats, individual decisions have to be taken, but vaccination is recommended whenever and as soon as justifiable. Pregnant cats should not receive modified live FPV vaccines.

Hygiene recommendations

Contact between shedders of infectious agents and susceptible animals should be reduced as efficiently as possible by the following measures:

- Movement control between the areas of the shelter with respect to animals, persons, equipment.
- Care-workers: the number of animals must not exceed the capacity of care available!
- Care-workers should wear protective clothing, separately for each area.

- Disinfectant hand washing should be used between handling individual cats, before and after breaks and by all visitors.
- Disposable overshoes should be used; if not available, footbaths should be provided, but these have to be cleaned and the disinfectant changed at intervals that ensure that the disinfectant is always working, since poorly maintained footbaths may even promote the distribution of pathogens.
- Cages and pens, litter trays and other equipment have to be cleaned daily. “Spot cleaning” (i.e. during cleaning the cat remains inside the housing unit and the cleaning consists of removal of visible stains and/or organic matter) may be considered as long as the housing unit is used by the same cat. A deep clean with disinfection must be performed when a cat is homed before the next animal uses the facility.
- Barrier nursing: separate care-workers for these areas or strict observation of the following order from first to last for cleaning:
 - Healthy cats
 - Cats in quarantine
 - Sick cats
- Disinfection: it is essential to use appropriate, efficacy-tested disinfectants (efficient for non-enveloped viruses like parvoviruses) at the appropriate dilution and to observe the recommended contact time.

Stress reduction

Stress reduction is not only important for overall health, but especially to minimise the risk of infectious diseases (e.g. outbreak of FIP or recrudescence of latent FHV infection) and can be achieved by:

- Keeping cats in small groups, considering social compatibility.
- “Spot cleaning” as described above.
- Environmental enrichment, offering possibilities for hiding, playing, climbing, perching and watching outside activities.
- Avoiding exposure to noise (e.g. barking dogs), odours, uncomfortable temperatures, unfamiliar people, animals and environments as well as unpredictable handling.
- Anecdotal observations were published that synthetic pheromones are useful when introducing new cats into a household. However, an evaluation of a synthetic feline facial pheromone product in shelter situations did not find evidence for any effect on stress scores.