

Note

The following recommendations concentrate on infectious diseases in rescue shelters, 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 unwanted effects**. Consider the following recommendations to help **minimise the spread of infectious diseases** within the shelter.

Infectious diseases: contributing risk factors

- The acceptance of some or all incoming cats, according to regional situations
- Cats that are persistently/latently infected with infectious agents
- High turn-over of cats
- Incoming cats housed alongside long-term residents
- Concurrent factors like stress (overcrowding), poor nutrition
- Lack of funding resulting in overcrowding, inadequate hygiene/quarantine, poor vaccination and infectious diseases testing rates

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 & accommodation: recommendations

- In general four separate areas are required:
 - **Quarantine area for incoming cats** to identify those incubating infection. State-of-the-art shelters allow all animals to be effectively in quarantine. If this is not possible, for cats which are not (re)homed earlier, the duration of stay in quarantine 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).
 - **Isolation facilities** for sick or potentially infectious cats with strict separation from the quarantine area and other residents, preferably in a separate building.
 - **Accommodation for clinically healthy, FIV and FeLV negative cats:** rooms for small groups, vaccinated against feline panleukopenia and upper respiratory tract viruses. Ideally, they should be housed individually or only with cats of the same origin. An adjacent outdoor area is optimal, with sufficient fencing to ensure that interactions with birds, rodents and other animals are prevented. Prospective owners should be able to view the cats.

- **Individual accommodation for queens and their kittens** in a separate area, ideally with foster families outside the shelter.

- At the entrance to each section, there should be washrooms or facilities for hand washing, putting on coveralls/overshoes, disinfection and footbaths (if no overshoes are available).
- Equipment for cleaning, disinfecting, feeding etc. should be available and labelled for each area and be kept strictly there.
- 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 and disinfect.
- Cages should only be used for medical/surgical or quarantine purposes; regional legislation must be considered (including adequate size of cages). Separate compartments for the litter tray (suitable for spot cleaning), thus bigger and more comfortable, are recommended.
- Animal density and turnover should be kept as low as possible in order to reduce stress and limit the circulation of pathogenic microorganisms. Ideally, no more than 3 cats per room; with higher numbers, the risk of an infection increases dramatically. With groups of more than 6 cats, some infections (e.g. FCoV) are likely to be always present.
- Suitable environmental temperature (15-21 °C), good air quality, the absence of draught and prevention of noise and other unnecessary stressors.

Standard of care for incoming cats

- Full health check by a veterinary surgeon.
- Check the cat's microchip; if no chip is detected, the cat should be chipped and registered.
- Treat against internal and external parasites. In areas endemic for heartworm (*Dirofilaria immitis*), implement testing and preventive measures.
- Test for FeLV and FIV infections, at least in shelters where contact between cats is allowed; retesting of FeLV antigen- and/or FIV antibody-negative animals 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 can usually be detected 3 to 6 weeks later. The highly sensitive RT-PCR can detect FeLV RNA as early as one week after exposure.
- Ideally cats are also tested by PCR for FeLV proviral DNA to identify regressively infected animals. Kittens up to 6 months of age might still test positive for FIV due to maternal antibodies but may not be infected; such cats should be retested after the age of 6 months.



- House cats testing positive for FIV, FeLV or both separately. If healthy, they should be 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).
- Cats should undergo veterinary checks at least every 6 months.
- Pay attention to potential risks of zoonotic infections (e.g. ringworm and rabies).

Standard of care for cats after quarantine

- Cats should be re-homed as soon as possible.
- Cats who are not re-homed should receive regular veterinary checks.
- Pay special attention to signs of stress, frustration and other behavioural changes.
- Treat regularly against internal and external parasites, including heartworm prevention in endemic areas.
- Keep FeLV and/or FIV positive cats separate until adoption (avoiding mixing of FeLV and FIV positive animals). Their health status should be monitored very carefully.
- Cats should not be euthanised unless in a moribund or terminal condition or if appropriate treatment is not available and they are suffering. The establishment of an Ethics Committee can be helpful.

Vaccination recommendations

- Healthy cats, aged at least 6 weeks* should be vaccinated against FPV, FHV and FCV infections, with continuation of the vaccination course until the age of 16 weeks.
*in case of an infectious disease outbreak, kittens may be vaccinated even earlier
- Healthy cats older than 16 weeks with an unknown vaccination history should receive a single dose of modified live FPV vaccine and two doses of FHV and FCV vaccine 2-4 weeks apart.
- Cats with a complete vaccination history should be boosted annually against FHV and FCV, and every three years against FPV.
- 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.
- Immunocompromised cats (e.g. due to FIV infection or during high-dose or long-term glucocorticoid therapy) should preferably receive inactivated vaccines.

Hygiene recommendations

Contact between shedders of infectious agents and susceptible animals should be limited:

- The number of animals should not exceed the capacity of care!
- Observe strict movement control between the areas of the shelter with respect to animals, persons, equipment.
- Care-workers should wear protective clothing, separate for each area.
- Use disinfectant hand washing between handling individual cats, before and after breaks and by all visitors.
- Wear disposable overshoes; if not available, footbaths should be provided (regular cleaning and change of disinfectant solution is essential). Alternatively, footwear should be disinfected when moving between sections.
- Clean cages and pens, litter trays and other equipment daily. "Spot cleaning" (during cleaning the cat remains inside the housing unit, actual cleaning consists of removing visible stains or organic matter) may be considered as long as the housing unit is used by the same animal. A deep clean with disinfection must be performed between different cats. Cloths and bedding should be washed at 60 °C.
- Apply barrier nursing: separate care-workers for separate areas. Alternatively, strictly observe the following order of care: healthy cats first > cats in quarantine > sick cats last.
- Only use appropriate, efficacy-tested disinfectants (including against non-enveloped viruses like parvoviruses) at the appropriate dilution and observe the recommended contact time.

Stress reduction

This is important for feline health and wellbeing, and to minimise the risk of infectious diseases.

- The five pillars of the overall well-being of cats are:
 - A safe place (small groups and social compatibility) allowing cats to retreat;
 - Multiple and separated key environmental resources (food, water, toileting and sleeping areas);
 - Opportunity for play and predatory behaviour, environmental enrichment (places to hide, play, climb, perch and observe outside activities);
 - Positive, consistent and predictable human-cat interactions;
 - An environment that respects the cats' highly developed sense of smell.
- Pheromones
 - Synthetic pheromones have been used in shelters with the objective to reduce stress.
 - However, more detailed research is required before drawing firm conclusions about the benefit of applying pheromones to increase cat welfare.

