Computer No.: 152027 Government of India Ministry of Environment, Forest and Climate Change CENTRAL ZOO AUTHORITY

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<u>CIRCULAR</u>

Subject: Precautions to be taken by zoos in the light of recent mortality of Leopards (*Panthera pardus*) at Bannerghatta Biological Park, Bengaluru due to Feline Panleukopenia.

In reference to the aforementioned subject, this advisory is being issued to recognised zoos for precautions to be taken to prevent the ingress of Feline Panleukopenia Virus.

2. Feline panleukopenia is a highly contagious, often fatal, viral disease of Felids that is seen worldwide. The causative parvovirus is very resistant; it can persist for 1 year at room temperature in the environment if protected in organic material. Feline parvovirus (FPV; synonymous with Feline Panleukopenia Virus) is closely related to the type 2 canine parvoviruses (CPV) that cause Canine Parvoviral Enteritis.

Virus particles are abundant in all secretions and excretions during the acute phase of illness and can be shed in the faeces of survivors for as long as 6 weeks after recovery. Being highly resistant to inactivation, parvoviruses can be transported long distances via fomites (e.g., shoes, clothing). Cats are infected oro-nasally by exposure to infected animals, their faeces, secretions, or contaminated fomites. Most free-roaming cats are thought to be exposed to the virus during their first year of life. Those who develop subclinical infection or survive acute illness mount a robust, long-lasting, protective immune response.

3. Most Feline Panleukopenia infections are subclinical. Those Felids that do become ill are usually < 1 year old. Peracute cases may die suddenly with little or no warning. Acute cases show pyrexia (104°–107°F) depression, and anorexia after an incubation period of 2–7 days. Bilious vomiting, unrelated to eating, usually develops 1–2 days after the onset of fever. Hypersalivation associated with nausea or abdominal pain, may be seen in some cases. Diarrhoea (often haemorrhagic) may begin a little later than the vomiting but is not always present. Extreme dehydration develops rapidly. Affected animals may sit for hours at their water bowl, although they may not drink much. Terminal cases are hypothermic and may develop septic shock and disseminated intravascular coagulation. Physical examination-profound depression, dehydration, and sometimes abdominal pain. Abdominal palpation—which can induce immediate vomiting—may reveal thickened intestinal loops and enlarged mesenteric lymph nodes. In cases of cerebellar hypoplasia, ataxia and tremors with normal mentation are seen. Retinal lesions, if present, appear as discrete grey foci.

3. Diagnosis:

i) Clinical signs and leukopenia on a CBC

 ii) Histopathology- Bowel loops may be segmentally dilated and may have thickened, hyperemic walls. There may be petechiae or ecchymoses on the intestinal serosal surfaces.
Perinatally infected kittens may have a noticeably small cerebellum. Histologically, the intestinal crypts are usually dilated and contain debris consisting of sloughed, necrotic, epithelial cells.
Blunting and fusion of villi may be present.

iii) IDEXX Snap Parvo In-house test (Faecal antigen detection kit)

iv) PCR (faeces and blood)

4. Treatment- Isolate the animals exhibiting clinical signs and quarantine them (minimum 6 weeks). Successful treatment of acute cases requires vigorous fluid therapy and supportive care (antiemetic therapy; antibiotics; and anthelmintics). Electrolyte disturbances (eg, hypokalaemia), hypoglycaemia, hypoproteinaemia, anaemia, and opportunistic secondary infections often develop in severely affected individuals. Close monitoring and prompt intervention can improve outcomes. Parenteral, broad-spectrum antibiotic therapy is indicated; however, nephrotoxic drugs (eg, aminoglycosides) must be avoided until dehydration has been fully corrected.

5. Prevention- Quarantine all animals that arrive at the facility especially young animals/orphans for hand rearing.

FPV can be destroyed by exposure to a 1:32 dilution of household bleach (6% aqueous sodium hypochlorite) for 10 minutes or more at room temperature. It is important that contaminated surfaces are thoroughly cleaned of organic material before disinfectants are applied.

6. Preparedness with specific reference to Bio-security needs may also be assessed and strengthened.

7. Inactivated virus vaccines are currently available. Efficacy and cold chain for the same must be ensured when in use at the zoo. Information regarding vaccination available at https://www.aazv.org/page/273 may be referred as appropriate.

Broad measures for prevention and control are suggested below:

- In line with rule 10. 1(9) of the Recognition of Zoo Rules 2009, the zoos shall put in place adequate safeguards to prevent the entry and the free movement of stray animals and pets into the premises of the zoo. Stray animals in within the zoo premises must be removed immediately as unvaccinated stray cats are the source of the virus.
- Zoo personnel who have pets at home and/or interact closely with cats and dogs must ensure that the animals are vaccinated appropriately and must follow strict hygiene protocols when they enter the zoo premises.
- All animals being rescued and brought into the zoo premises must be quarantined and undergo a comprehensive health assessment.
- Orphaned/infirm animals undergoing hand-rearing and treatment must be subject to minimal handling by trained personnel and with the implementation of hygiene protocols related to both personnel and equipment to prevent the spread of fomites of any contagion.
- Immediate quarantine and isolation are to be instated for the sick/ infected animals from the healthy animals.

- Avoid common housing and thereby direct contact.
- All biosecurity measures and strict sanitary measures for disposal of personal protective equipment (PPE) etc. used during sampling from affected animals should be followed.
- Thorough cleaning and disinfection of affected personnel, premises and contaminated environment including vehicles plying through slaughterhouses, animal holdings should be carried out with appropriate chemicals/disinfectants.
- Exchange/transfers/releases of felids between zoos shall be subject to the felid species being tested for viruses and proven to be clinically free of the disease.

Assistance may be sought from ICAR-Indian Veterinary Research Institute (IVRI), Bareilly, Uttar Pradesh.

Sincerely,

-Sd/-(SANJAY KUMAR SHUKLA) MEMBER SECRETARY

Distribution:

- i) The Chief Wildlife Warden of all States / Union Territories,
- ii) The Zoo Director of all recognised zoos.
- iii) The Director, Indian Veterinary Research Institute, Izzatnagar.
- iv) The Member Secretary of the concerned State Zoo Authority.

Sd/-(SANJAY KUMAR SHUKLA) MEMBER SECRETARY