

Management of Animal Facilities during Disaster with reference to Covid-19 Pandemic

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Abstract

Animals are most often victimized during calamities and disasters such as flood, earthquake, epidemic, fire, protest and war. Prevention of animal suffering during such situations is the most challenging part to meet the animal welfare aspect. The recent pandemic caused by Covid 19 infection has brought the whole world to a standstill. The declaration of a public health emergency of international concern due to the SARS-CoV-2 outbreak in January 2020 and subsequently confirming the COVID-19 outbreak as a global pandemic by the World Health Organization (WHO) was a major global crisis in the history of human life. With the public health concern due to Covid-19 pandemic and rising number of cases, on 24th March 2020, the Hon Prime Minister of India declared a nationwide lockdown for 21 days and lockdown extended for two more times till June 2020. Several institutions associated with the day-to-day activities of the public were closed. It was a very difficult situation to arrange services for running the animal facilities in the research laboratories. This was the first-ever disaster when public services, transport and manpower availability were severely affected for the months. Although the husbandry practices in the established animal facilities in national laboratories/institutions/corporate were not affected severely during the Covid 19 pandemic, many small facilities in the zoology/pharmacy colleges and small establishments collapsed due to non-availability of manpower, bedding materials and feeds. Many research organizations were closed for daily working due to scarcity of the above services and allowed to work from the home wherever possible. To cope up with such a situation disaster management plan should be in place in all the animal facilities. We describe a disaster management plan for handling a similar situation if it arise in the future. The plan includes articulation of several authorities at different levels for the uninterrupted passage of services towards the arrangement of manpower, materials and feeds to avoid animal suffering.

A. Government level approvals

Generally, during the situation of crisis on a larger scale, authority in the government may likely to announce partial or complete shutdown in order to bring down the situation under control. Similarly, during Covid-19 pandemic, the government of India announced first of ever lockdown. With the enforcement of unprecedented lockdown, the movement of the public was affected heavily and the supply chain for the essential goods was interrupted as well. In the absence of mass transport or vehicular movement it becomes very difficult to attend office by the staff, receiving feed and other accessories in the facilities. In view of this it is necessary to bring the situation to the notice of government authority and pass some orders to allow the continuation of certain services for the animal facilities. On 19th March 2020, the central government has promulgated the “Environmental and Social Commitment Plan (ESCP) - India COVID-19 Emergency Response and Health Systems Preparedness Project (P173836)” (ICMR,2020).

- a. **Essential services:** The authority in the government is required to bring the activities associated with animal facilities under the essential or emergency services category by passing the order. This will enable authorities in the different departments to coordinate and permit the movement of the essential commodities directed towards the animal facilities. The government orders to keep feed and associated factories open for the manufacturing of animal feeds, bedding material and other consumable items will be helpful to make these consumables available and maintain regular supply to the animal facilities. On 25th March 2020, authority at the Ministry of Fisheries, Animal Husbandry & Dairying brought under essential services to animal husbandry and veterinary health sectors (Department of Animal Husbandry and Dairying, Krishi Bhavan, New Delhi, 2020).
- b. **Transport approval:** Government orders to permit vehicular movement for the transport of animal facility staff, animals and other essential consumables

are essential. Traveling permission to the animal care personnel with proper safety measures during commutation will help to carry out minimum husbandry practices in the animal facilities. Allowing vehicular movement under the transport of essential services will enable the supply of the raw materials to the manufacturing units for continuous production of feed and other consumable items. Regular movement of the transport vehicles will prove highly useful to maintain the supply chain between the original source and consumer of the essential items.

- c. **Online approval of the projects:** During the crisis of lockdown physical movement of the committee members may be restricted and not be possible to hold the meetings. It is also likely that members are stuck at different locations and unable to reach the meeting place for the meeting. In such a scenario, the research studies that are due for renewal or new studies required to be initiated on a priority basis may be affected without approval by the committee members. With the availability of technology, this hurdle can be overcome by conducting a meeting using online mode through video conferencing. However, the government authority needs to permit IAEC/IACUC meeting using online mode. The approval from CPCSEA during Covid-19 pandemic to hold online meeting for the approval of research projects has helped research community continue the ongoing projects that were due for the renewal and new Covid related research projects could have been initiated (CPCSEA, 2020).

B. Institute level approvals

During the crisis of natural calamities or situation similar to Covid-19 pandemic, special administrative decisions to make certain arrangements are necessary at the institute level. In such a scenario, In-charge of the animal facilities and the researchers would require to brief head of the institution/organization describing the gravity of the crisis and consequences thereafter. The Facility In-charge should ratify the request for taking the administrative steps for making specific provisions

- a. **Manpower:** In the well-established animal facilities, usually staff comprises of In-charge/veterinarian, technicians and animal care personnel. In view of the rigorous day to day activities in the animal facilities, regular attendance of the animal facility staff is required. During disaster or crisis/disaster or crisis situations, the human resource or administrative section of the institute should bring animal facility staff under essential services category by passing officer memorandum (OM). This OM will enable animal facility in-charge to arrange manpower on rotational or shift duty or with staggering timings using the available manpower. The office order issuing special entry passes to the facility staff under essential services will help them while traveling to office and help security personnel enter the office gate.

- b. **Accommodation:** In many research laboratories campus accommodation is provided to the animal facility staff for attending emergencies after office work as well as on holidays under the provision of the essential services. However, suppose the animal care personnel are not residing in or around the campus. In that case, it becomes very tough for the staff to commute from the distance places, especially during the unprecedented situation of Covid-19 crisis when the transport system is badly affected. In such situation, In-charge of the facility should discuss this issue with the authority of the institute and make arrangements for the campus accommodation of few staff to support the minimum required work in the facility.

- c. **Materials/consumables:** General practice in animal facilities is to keep stock of the essential materials such as feed, bedding and other consumables for at least few weeks. However, in the situation of crisis when it is extended for several weeks, especially seen during Covid-19 pandemic, the stock needs to be replenished with the fresh materials. When the concerned sections for generating purchase orders are closed, processing of the documents for material procurement is difficult. In such a scenario online processing of the documents prove useful to procure the materials. Institutions have to make provisions in the system that will allow online approvals to purchase essential items so that the day to day activities of the animal facilities are not hampered.

- d. **Engineering and maintenance services:** Un-interrupted supply of power, water and ventilation to the animal facility is equally important like feed and water. During the crisis, these services can be badly affected and demand the availability of maintenance people on call in the campus. Along with engineering services should make arrangement of the maintenance people on shift duties to attend breakdown in the shortest possible period. Provision of power backup, additional water storage or tanker water or backup air conditioners, and consumables are the other infrastructural arrangements required to be made available for the smooth running of the facilities.

C. Facility level arrangement

Being In-charge of the facility, certain decisions are required to be taken at the facility level. The decisions should focus on the day-to-day husbandry practices, nutrition, sanitation and ongoing research programs. The allotment of work should prioritize the essential part of the daily activities to support the survival of the animals and less animal suffering. Under full strength of the facility staff all the services in the facility should be carried out as usual, however, if the staff strength is not enough, the work load can be reduced by cutting down certain practices to enable completion of minimum required work in the facility (Thorat & Ingle, 2020).

- a. **Animal breeding:** Animal breeding constitute a significant activity in many of the research animal facilities to support animal-based research. The animals are bred to propagate colonies of the existing strains and the production of required number of animals to carry out ongoing and new experiments. In the emergency situations such as lockdown, natural calamities, strikes or war that is extended for a longer duration, the stock of the existing resources starts shrinking. During such a crisis, the facility manager has to scale down the ongoing breeding program to reduce burden on the available resources and better utilize existing resources to sustain the ongoing research.
- b. **Research programs:** All the facility manager's efforts should address continuing ongoing animal-based research programs with the available resources. In limited resources, new research programs should be kept on hold and can be initiated after the situation is improved. The researchers should coordinate with the animal facility staff to take care of the animals under experiments in the absence of animal care personnel or if the staff is not enough.
- c. **Surplus stock:** Maintaining the surplus animals in the facility during emergencies may put an additional burden on the available resources. These animals will occupy space, consume feed, utilize other accessories with the requirement of manpower if they continue to maintain them. It is in the interest of facility management to cut down or remove the surplus stock so that the available resources being used for these animals can be diverted to other animals under experiments or breeding colonies.
- d. **Space management:** It is crucial to manage working space in the animal colonies or other service areas inside animal facilities during Covid -19 pandemic or similar situations wherein the spread of infection through physical contact or air transmission is anticipated. It is essential to break the chain of disease transmission among animal care personnel while working in the facility. This can be achieved by arranging their workplaces or sitting arrangements to keep the safe distance between two persons. Decongestion of the working personnel inside a specific area can be made through proper work schedule, rotational duties and staggering work timing.
- e. **Personnel protection:** The animal care personnel, veterinarian and administrative staff are at the risk while working in the animal colonies and other areas in the facility if they are not protected properly. While working together, animal facility staff can be protected themselves or avoid transmission of infection to colleagues by using good quality PPE. PPE kit includes lab coat, face mask

(N95), head cover, hand gloves and foot ware. Proper disposal of the PPE kits after usage is also important to avoid contamination to other people or the environment.

- f. **Sanitation in the facility:** The common areas such as door handles, sitting places, chairs, workbenches, animal handling equipment, and washrooms are shared by the facility staff and can pose risk of spreading the infection among the staff. Proper sanitation of these areas using effective disinfectants at the regular interval is necessary to break the transmission of infection through these channels.

Conclusion

The pandemic caused by SARS-CoV-2 infection has brought the whole world to a standstill. Several institutions associated with the day-to-day activities of the public were closed. It was very difficult situation to arrange services for running the animal facilities in the research laboratories too. This was the first-ever disaster when public services, transport and manpower availability were badly affected for the months. Although the husbandry practices in the established animal facilities in national laboratories/institutions/corporate were not affected severely during the Covid 19 pandemic, many small facilities in the zoology/pharmacy colleges and small establishments collapsed due to non-availability of manpower, bedding materials and feeds. However, having disaster management plan in place helps to cope up with such situation in all the animal facilities. This manuscript is an attempt to describe a disaster management plan for handling similar situation if arise in future. The plan includes articulation of several authorities at different levels to co-ordinate for providing services towards arrangement of manpower, materials and feed to avoid animal suffering.

Reference

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