

## **Action Plan in respect of Bird Flu Decided by the Directorate of Animal Husbandry Kashmir**

A system of taking random samples of blood of poultry from different parts of the state for the purpose of surveillance against bird flu has been in vogue for sometime. We have recently also initiated surveillance of migratory birds visiting sanctuaries. While thousands of samples have been tested so far, none has proved positive for highly pathogenic avian influenza (HPAI). This programme of surveillance will continue and we can be quite confident of the health of our poultry. The message should therefore go to the poultry farmers and consumers alike that there is no scope for any worry on this count. Prudence, however, demands that we should take all possible precautions in this regard and be prepared to face any eventuality. It is in this context that this Action Plan has been prepared for the guidance of the Animal Husbandry Departments of the State Governments. The Departments are strongly advised that the spirit of extreme caution in which this has been prepared should be fully appreciated and they must ensure that this does not in any way create any scare particularly among the producers and consumers of poultry. Special care should be taken to see that baseless rumours and suspicion are not allowed to spread and mislead the people. This Action Plan for the State Governments consists of three parts. Part I gives the Action Plan in case of any suspicion of occurrence of avian flu at any place. Part II describes the Action Plan in the unlikely event of the outbreak of the disease being confirmed by laboratory tests. Part III provides advice to persons who may be required to handle HPAI affected poultry.

It is clarified that poultry covers not only chickens, but other domesticated birds like ducks, geese, turkeys, guinea fowls, quails etc.

### **I. Steps to be taken in case of suspicion of outbreak of avian flu**

#### **Need to be in a state of alertness and preparedness**

1.1. The Chief Veterinary Officer (CVO) of the District, District Animal Husbandry Officer (DAHO), or by whatever designation he is known, and the entire machinery of the Animal Husbandry/Veterinary Department in every district should be in a state of full alertness and preparedness and be on the lookout for any untoward incident relating to the health of poultry. All Veterinary Officers in the district (government, semi-government or private) should be alerted to report to the CVO/DAHO on phone, fax or e-mail, in case they notice above average mortality or any unusual sickness which cannot be readily diagnosed in poultry as well as wild and migratory birds. A system of reporting has to be developed in which the industry, poultry farmers and village level workers are encouraged to report any suspicion to the local veterinary authorities. If there are any sanctuaries for migratory and wild birds in the District, the CVO/DAHO should request the officials in charge of the same to report any such suspicion in relation to the birds in the sanctuary immediately.

1.2. The Director of Animal Husbandry should ensure that all the veterinary officers

- 1.3. and disease investigation officers of the department are equipped with the essential kits indicated in Annexure I. The office of every CVO/DAHO should have at least five fogging machines and twenty sets of protective clothing and equipment (consisting of (a) protective clothing, preferably overalls plus an impermeable apron or surgical gowns with long cuffed sleeves plus an impermeable apron; (b) disposable examination gloves; (c) well-fitted surgical masks (d) goggles; (e) cap and (f) disposable shoe covers). Two or three fogging machines and a couple of protective equipment should be carried to all suspected or infected places.

### **CVO/DAHO to visit the site immediately on receipt of preliminary information**

- 1.3. On receipt of any preliminary report regarding unusual sickness or above average mortality of poultry as well as wild and migratory birds at a place either from Veterinary Officers or from any other source, the CVO/DAHO, accompanied by a Disease Investigation Officer (DIO) shall visit that place within 24 hours and personally ascertain the circumstances and facts of the case. The DIO should be equipped with a 'kit' (indicated in Annexure I) so that he is in a position to conduct preliminary and clinical investigations and if necessary, collect required samples for despatch for laboratory analysis. DIO and his assistants, as well as those who are required to visit places where birds are kept, should wear the protective clothing and equipment. It must be ensured that these protective clothing and equipment are discarded for disinfection in the suspected farm prior to departure.

### **Preliminary and clinical investigations by DIO**

- 1.4. The DIO must wear his protective gear in the changing room, and must leave the following items from the kit in the changing room :

- (i) Leak proof water resistant container;
- (ii) Thermic container (ice box) for carrying samples; (iii) Two pairs of latex gloves;
- (iv) Five autoclavable plastic bags;
- (v) Five black rubbish bags;
- (vi) Disinfecting solution.

The remaining components of kit must be carried inside the house/shed.

- 1.5. The CVO/DAHO and DIO should collect the following information:

- (i) Preliminary identification of the production unit and subunits including topography of the farm and identification of the specific unit for which the suspicion has been reported;

- (ii) Number of birds and other animals on the farm;
- (iii) Identification of staff as well as vehicles directly involved with that unit;
- (iv) Recent movement of people, equipment, vehicles and animals/ birds;
- (v) Availability on site of disinfectants and equipment for disinfecting the premises;
- (vi) Anamnestic data (data relating to immune response).

1.6. The DIO should carry out a clinical investigation with the aim to establish the clinical situation on the farm, including ill and suspect birds. The clinical investigation must be performed on all susceptible species present on the farm, and it must begin from the most peripheral units. Particular attention must be paid to any vaccinations performed. All this information must be reported in the epidemiological inquiry report (Annexure II). While filling in the epidemiological inquiry form, it is important to ensure inter alia that:

- (i) Animal or poultry movements are recorded up to 20 days prior to the onset of the first clinical signs;
- (ii) Movement of all people (staff, relatives, servicing personnel, veterinarians etc.) who had access to the farm must be recorded;
- (iii) All vehicles, regardless of their contact with animals, which have had access to the farm must be reported.

The epidemiological inquiry report must be sent (faxed or e-mailed) to the Director of Animal Husbandry as soon as it is completed. All the birds present PER SPECIES must be identified, and for each species identified, a report containing the date of onset of clinical signs, description of clinical signs and reported percentage mortality must be prepared.

1.7. If the preliminary and clinical investigations indicate that it is an unusual situation indicating suspicion of avian flu, then the CVO/DAHO has to ensure that steps as indicated in the subsequent paragraphs are taken immediately. If the investigations show that avian influenza is not suspected, adequate local publicity should be given for the same so as to reassure the poultry farmers and general public.

#### **Immediate report to Director, Animal Husbandry, District Collector and others**

1.8. The CVO/DAHO shall immediately report by telephone, fax or e-mail the matter to the Director, Animal Husbandry and District Collector as well as to other officers of

the Revenue Department like the Sub Divisional Officer, Tahsildars etc. and seek their assistance for enforcement of restrictions indicated below.

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### **Identification of alert zone**

1.9. An area with 10 km radius from the affected place should be identified as the alert zone. All villages and habitations within that area should be identified. The Panchayat authorities, civil and veterinary officials in those areas should be alerted about the possibility of avian flu and requested to strictly enforce the restrictions mentioned below.

### **Collection of samples and despatch for laboratory tests at HSADL, Bhopal**

1.10 The following pathological samples must be collected to be sent to High Security Animal Diseases Laboratory (HSADL), Bhopal (till adequate capabilities in this regard are created in other laboratories like the CDDL and RDDs):

- (i) At least 5 diseased birds (either dead or acutely sick birds after killing them) for post mortem examination;
- (ii) Pooled tracheal and lung samples from at least 5 diseased birds;
- (iii) Pooled intestine samples from at least 5 diseased birds;
- (iv) Cloacal and tracheal swabs collected normally from 30 healthy birds and in any case not less than 10 birds. Swabs must be collected ensuring that at least one gram of faecal material is actually on the swab and must be subsequently immersed in virology transport medium (PBS or tissue culture medium);
- (v) At least 10 blood samples (acute sera).

Samples must be packaged appropriately (in leak proof containers, wrapped in at least two plastic bags), to avoid dissemination of the infectious agent, and transported in a cold chain to the laboratory inside a polystyrene box (ice box) containing icepacks. The polystyrene box must be appropriately disinfected before leaving the premises. The samples must be accompanied by the appropriate form (see Annexure III). Following collection of samples the DIO and his assistants should disinfect their protective gear in the designated changing room and collect all sterilizable equipment in an autoclavable bag, which is sealed and inserted into a second bag, which is disinfected externally. All single use materials, sheets of paper, disposable gear and shoe-covers are to be put inside a plastic bag which is left on site.

1.11. These samples must be collected and a special messenger should leave for Bhopal within 24 hours after the CVO/DAHO and DIO reach the spot. Regarding the

despatch of the sample through a special messenger the CVO/DAHO may inform the Director of Animal Husbandry on phone. There should not be any need to get any written permission as it has to be ensured that the samples reach Bhopal as early as possible. To cut short the delay the special messenger should be allowed to go by air, wherever necessary. HSADL, Bhopal has been requested to complete all tests at the earliest. In order to enable HSADL, Bhopal to receive the samples for carrying out the tests as soon as the samples reach there and also to arrange temporary stay of the special messenger, telephonic intimation regarding despatch of sample should be given to them at the earliest. (Telephone no. of HSADL, Bhopal is 0755 2759204 and fax no. is 0755 2758842). It should be possible to get test results within three to four days after the sample has left the suspected premises.

### **Restrictions to be enforced at the site and the alert zone pending receipt of test reports**

1.12. Pending receipt of the test results, the entire suspected farm should be cordoned off and following restrictions should be immediately brought into effect in the alert zone :

- (i) No vehicles should be allowed to ply in and out of the affected farm premises. Personal vehicles should be left outside the farm premises.
- (ii) No movement of poultry, eggs, dead carcass, manure, used litter, farm machinery, equipment or any such material should be allowed both within the alert zone and from and to outside the zone.
- (iii) The farm personnel should wear protective clothing all the time inside the farm, including face-masks and gloves, gumboots (or shoes with disposable covers) etc. While leaving the farm premises, farm personnel should leave the protective clothing etc at the farm and clean themselves thoroughly with suitable disinfectants.
- (iv) Movement of people to and from the suspected farm should be restricted to the barest minimum. No other animals should be allowed in the farm.
- (v) Inter-sectional movements of farm personnel should be banned. They should not visit any other poultry farm, bird sanctuary, zoo etc.
- (vi) Disinfection procedures should be strictly applied at the entrance of the premises.
- (vii) All records of birds present at the farm are to be maintained properly.
- (viii) Before the test results are received, the possibility of closing the markets and shops in the area may be explored in consultation with the revenue authorities, particularly if more farms become suspect during this period.

1.13. The poultry farmer (farmers) at the suspected site should be informed of the restrictions and should be requested to comply with the same strictly. While these restrictions should be enforced strictly, it should be ensured that this does not create any scare; for this purpose help of Revenue, Panchayat and Municipal authorities and the media should be sought.

1.14. Pending receipt of the test results, the DAHO should arrange to record mortality or sickness of birds at the suspected site and the alert zone. During this period, he should also arrange to collect information about the total poultry population and population with individual poultry farmers keeping more than 100 birds in the alert zone (separately within a radius of 3 kms and between 3-10 kms from suspected site).

1.15. The restrictions mentioned above should, of course, be abolished if the laboratory diagnosis proves to be negative for HPAI. However, if the above average mortality or disease situation continues, the cause of this should be got established through other necessary tests and appropriate remedial action taken.

1.16. In case the suspected site happens to be a bird sanctuary, the actions indicated in paragraphs 1.3 to 1.15 may be done in consultation with the official in charge of the sanctuary.

### **Naming a Veterinary Officer as the designated officer**

1.17. Before leaving the place, the CVO/DAHO shall nominate a fairly senior and knowledgeable veterinary officer of the Department serving in the area as the designated officer who shall be responsible for carrying out all required steps as per this Action Plan.

## **II. Action Plan in case outbreak of HPAI is confirmed**

### **Declaration of infected and surveillance areas**

2.1. In case laboratory tests confirm the occurrence of highly pathogenic avian influenza (HPAI), the matter should be reported at once to the Director of Animal Husbandry and Secretary/Principal Secretary in charge of Animal Husbandry. An area of radius 3 kms around the infected site which should have been clearly identified with names of all villages and habitations within that area should be communicated with this to the above authorities so that the area can be notified as infected area. A sign-board about declaration of the area with 3 km radius from the infected site as infected with bird flu or Avian Influenza should be clearly and prominently displayed in the local language. The area between the radius of 3 kms and 10 kms around the infected site should be notified as surveillance area. The surveillance area should act as a buffer zone between infected area and disease-free area. In case vaccination is to be adopted, surveillance area will have to be targeted.

## **Reporting to be done by Secretary/Principal Secretary**

2.2. The Secretary/Principal Secretary will obviously have to bring the matter to the notice of the highest authorities of the State Government for their guidance and appropriate intervention. The Secretary/Principal Secretary should also at once report the matter to the Animal Husbandry Commissioner and Joint Secretary in charge of Animal Health in the Department of Animal Husbandry, Dairying and Fisheries, Government of India. All the concerned agencies including local and other central authorities are to be notified about the infected area. It is, however, clarified that the international agencies are to be notified by only the Department of Animal Husbandry, Dairying and Fisheries, Government of India.

## **Designated Veterinary Officer and CVO/DAHO responsible for implementation of all contingency procedures**

2.3. Once the occurrence of HPAI is confirmed through the laboratory tests, all contingency procedures for the containment and eradication of HPAI should be implemented at once. Many immediate steps will have to be taken as indicated in the succeeding paragraphs in addition to continuing and intensifying all the restrictions mentioned in para 1.12. The responsibility for this purpose shall vest with the Veterinary Officer designated for this purpose by the CVO/DAHO and of course, the CVO/DAHO as the supervisor officer. (In case the infected area happens to be a sanctuary of birds, the steps should be taken in consultation with the official in charge of the sanctuary. There will, however, be no need to provide any compensation as mentioned in paras 2.21 and 2.22 in respect of the birds in the sanctuary to be destroyed).

## **Absolute ban on movement of poultry or its products**

2.4. Movement of poultry or its products should be completely banned from and to the infected area. Farm personnel in the infected area should not be allowed to visit any other poultry farm. All possible steps should be taken to ensure that wild and stray birds do not have access to sheds and water supplies in the infected area.

### **Closure of poultry and egg markets and shops**

2.5. All poultry and egg markets/shops within the radius of 10 kms from the infected site should be immediately got closed forthwith with the assistance of the Revenue and Municipal/Panchayat authorities.

## **Movement of vehicles and persons**

2.6. The vehicles of the veterinarians and others visiting the infected premises must be left outside the premises at a distance of at least 500 metres from the entrance of the farm. The movement of people and equipment from the suspected premises should

be restricted only to the requirements related to handling the disease. Proper disinfection procedures must be adopted even for this.

### **Access to the infected premises**

2.7. Access to the premises must take place following a complete change in clothing. Disposable gear, including head caps and shoe covers must be worn by all staff entering the farm. A changing room must be identified, and it should contain large plastic bags, cardboard boxes, latex gloves and a sufficient quantity of disinfecting solution. The remaining components of kit are to be used inside the poultry house/shed. The immediate tasks to be carried out by the designated Veterinary Officer will be to :

- (i) Categorically instruct the personnel in the farm that they should not visit any other establishment containing live birds for three days after they leave the infected farm; the VO and any other veterinarian must also comply to this general rule.
- (ii) Identify locations on the farm where vehicles leaving the farm can be properly washed and disinfected.
- (iii) Activate the disinfection procedures at the point of entrance to/exit from the infected premises; identify sites where staff may wash and disinfect; and ensure that on leaving the premises, all staff leave their disposable gear inside the changing room, wash and disinfect exposed body parts and shoes and agree to wash their clothing as soon as they return home.
- (iv) Vehicles are washed and disinfected internally and externally, and vehicles should be allowed to leave the infected premises only if it is absolutely necessary.
- (v) Care must be taken to avoid contamination of water reservoirs.

2.8. The number of vehicles and staff in the infected premises should be reduced to the minimum necessary to handle the outbreak. Any staff that has access to the infected premises may only leave the farm after a complete change in clothing and disinfection. Staff involved in the depopulation of the farm must not have any contacts with susceptible species, for at least three days after the last contact with the infected premises.

### **Depopulation procedure followed by burning at the farm premises**

2.9. The entire stock of diseased and in-contact birds needs to be eliminated and destroyed in the presence of the designated Veterinary Officer and concerned local authorities like officials of the Revenue Department, Municipality, Panchayat etc. All the

poultry products including meat, eggs and waste materials, like used litter and manure, must not be allowed to move out of the infected premises and should be destroyed at once including any material left over from the period before the disease was reported. The means of destroying the stock should be humane. The dead birds, along with both diseased and culled ones, should be burnt in pyre or buried and a certificate to be obtained from the local authority. It has to be ensured that the dead birds, eggs and other materials are not moved out of the infected site under any circumstances. The Government may designate any other appropriate authority for overseeing the culling and disposal of dead birds from the point of view of determining the compensation to be paid to the affected poultry farmers.

2.10. The depopulation and disposal of infected birds must be performed bearing in mind that this needs to be done in the quickest time span possible to prevent spread of infection. Furthermore, they need to be performed with the doors of the shed/house closed to prevent access of wild birds and other animals to infected organic material. Depopulation of infected flocks may be done by decapitation and dislocation of the neck.

2.11. The equipment necessary for depopulation and disposal are :

Wooden poles and plastic red-and white-tape to identify the infected premises and the entrance/exit of the farm;

Disinfectants;

Gas, drugs or devices to contain, sedate, stun and depopulate flocks;

Appropriate containers for disposing of infected material.

2.12. Drugs that may be used for depopulation of large flocks of birds are :

Alfa chloralose, mixed to feed in concentration of 2%-6%, causes loss of consciousness, and death can be obtained by suffocating birds in plastic bags. Can be used only if the birds are clinically ill and do not exhibit any loss of appetite;

Sodium fenobarbital, dissolved in drinking water (80 mg in 55 ml), causes loss of consciousness in 4 hours; same recommendations as above.

2.13. Approximately 5 quintals of wood per 100 kg of dead birds would be required for burning. It should be ensured that carcasses are completely burnt. In areas where it is not at all practicable to dispose of the birds by burning, burial may be adopted. For this, a pit must be prepared as soon as the diagnosis is confirmed. The size of the pit must be at least two metres long, two metres wide and two metres deep, and this enables disposal of about 300 birds. The number of birds can be doubled, if it is made one metre deeper. All non-disinfectable, biodegradable material (wood, cardboard) must be buried with the animals. The carcasses must be covered with a layer of calcium hydroxide, and

then with a layer of earth (at least 40 cm deep). Burial should be such that rodents or stray animals cannot access it. The burial ground is to be suitably marked and should not be opened for at least five years.

### **Procedure for destruction of infected materials**

2.14. For destruction of the infected materials, the following procedures should be adopted :

- (i) Waste, organic and all other non-disinfectable material present on the farm must be destroyed; in particular, destruction of litter, eggs, egg products, hay, animal feedstuffs, feathers and egg-trays must be ensured. (Depending on the quantity to be destroyed and characteristics of the farm, litter can be either buried in the pit with animal carcasses or burnt. Water should not be allowed to accumulate in the farm premises or where litter has been buried. In any case, infected litter should not be moved from the infected farm.)
- (ii) Eggs and egg products may be buried in the pit with the animal carcasses or burnt.
- (iii) Straw may be more conveniently burnt.
- (iv) Animal feed present on site must be burnt.
- (v) The protective clothing used by the staff engaged in destruction of the birds should also be burnt.

### **Cleaning and disinfection of the premises and farm implements**

2.15. The following procedure may be adopted for cleaning and disinfection of the premises and farm implements :

- (i) All units which are physically or functionally connected to the establishment (i.e. hatchery, egg storage rooms, packaging rooms, egg trolleys, egg product plants) must be properly disinfected. Vehicles, used for transporting live animals, eggs and animal feed must also be disinfected.
- (ii) Washing and disinfection of walls, floors and ceilings of the infected establishments must be performed aiming at the removal of all organic material; metal structures such as cages may be decontaminated by heat treatment.
- (iii) All equipment inside the house such as drinkers and food hoppers must be washed and treated with a disinfectant for at least 48 hours.
- (iv) Water reservoirs must also be emptied, washed and disinfected.
- (v) Feed tanks (silos) need to be emptied, washed with a hot water-pressure

pump and subsequently fumigated.

(vi) After washing and disinfecting, all units must be fumigated twice with at least two weeks between fumigations.

2.16. A list of disinfectants which are active against avian influenza virus, their concentration and recommended use are mentioned below :

(i) Rectified spirit or Savlon or Dettol (1 % solution) can be used for cleaning of hands, feet of farm workers and visiting officials.

(ii) 2% solution of NaOH should be used at the entrance on foot mats to clean the shoes. This solution can also be used to scrub and clean gumboots and other items.

(iii) Sodium hypochlorite : 2% active chlorine solution (disinfection of equipment)

(iv) Quaternary ammonium salts: 4% solution (treatment of walls, floors, ceilings and equipment).

(v) Calcium Hydroxide: 3% solution ( treatment of walls and floors).

(vi) Cresolic acid 2.2% solution: (treatment of floors).

(vii) Synthetic phenols 2% solution: (treatment of floors).

(viii) Vircon-S@ where available.

(ix) Formalin and permanganate for fumigation.

### **Notification to health authorities**

2.17. In view of the threat of human infection from particular strains of HPAI (H5N1), public health authorities are to be immediately notified to be vigilant against infection appearing in man. This should be done at the level of CVO/DAHO and the Director/Secretary, Animal Husbandry. The farm personnel handling birds or products should be subjected to special scrutiny. If human infection is suspected, the personnel involved in eradication or control should be adequately protected against exposure. Wearing of protective clothing and other protective equipment should be made compulsory.

### **Imposition of legislative measures**

2.18. All the existing legislative powers associated with notification of a disease either vested with the municipality or with CVO/DAHO should be exercised. This is to be ensured by both the CVO/DAHO and the Director of Animal Husbandry.

### **Exchange of information with industry/farmers**

2.19. Following notification of the disease, the Government at the level of the Director, Animal Husbandry and Secretary, Animal Husbandry should take the poultry industry and small poultry farm owners into confidence and inform them periodically about the measures that are being taken to control HPAI. Popular poultry and livestock journals and mass media should be encouraged to disseminate information about the Government's initiative on HPAI. The support of the industry should be sought for implementing the Government's decisions.

### **Media briefing by official spokesperson**

2.20. In order to avoid spreading panic both in terms of public health and distress selling by poultry farmers, clear and precise briefing of the media should be made regularly by a designated official spokesperson of the state Government. The notification, instructions to be followed and information in terms of human consumption of poultry products should be announced through media. Unauthorized persons should be discouraged from voicing opinion in the media, which is best left to the experts identified by State Govt. for HPAI.

### **Compensation to be paid for forced culling**

2.21. It is obvious that the programme of culling of all affected birds will succeed only if a system of adequately compensating the poultry farmers is put in place and activated immediately after the outbreak of HPAI is confirmed. It is unrealistic to expect the poultry farmers to cooperate with the culling programme unless they can hope to get fair compensation immediately. It must be realised that any expenditure incurred on this will be more than justified by way of bringing about effective control on the disease. The State Government will have to take an immediate decision on this. In order to ensure that compensation is paid expeditiously and that chances of its misuse are minimised, it will be advisable to associate the District Collectors with this. In order to have effective control on the expenditure incurred on payment of compensation, it will be necessary to collect data on the poultry population within a radius of 3 kms from the suspected site before receipt of test results, as mentioned in para 1.14. The question of grant of assistance, if any, to the States for this purpose will have to be decided separately.

### **Destruction of birds in the infected zone of 3 km radius outside the initially infected farm**

2.22. For effective control of the diseases it will be necessary to stamp out all the birds within the infected zone even though the birds outside the initially infected farm may not be currently showing any symptoms of the disease. All such birds should also be destroyed. Compensation may be paid for such birds also.

### **Bio-security**

2.23. The best way to control HPAI is to prevent exposure by imposing strict biosecurity measures. This can be achieved by adopting following means in all farms, even though they are not currently infected.

(i) Contact of poultry flock with domestic poultry and wild birds should be avoided. The premises of poultry farming should not have water bodies to attract free-living, migratory and other wild birds.

(ii) In poultry farm, uniform age-group policy should be adopted. This is best done by adopting 'all-in-all-out' production system.

(iii) In order to control human traffic, the farm personnel should wear protective clothing all the time inside the farm, including face-masks and gloves, gumboots etc. Inter-sectional movements of farm personnel should be banned. While leaving the farm premises, farm personnel should clean themselves thoroughly with disinfectants and change their clothing and shoes. They should not visit any other poultry farm, bird sanctuary etc. for at least three days.

(iv) The entire farm premises including appliances, feeders, waterers, cages, etc., need to be thoroughly cleaned and disinfected at fortnightly intervals. Farm implements from other poultry farms should not be borrowed for use. If at all necessary, thorough disinfection before using and soon after the use should be carried out.

### **Vaccination**

2.24. Vaccinated birds may get protected against the disease but continue to spread the infection. OIE recommends that in case of an outbreak of HPAI in a densely populated poultry area, vaccination can be one of the options to be adopted as a control policy. Since there are various subtypes of influenza viruses, it is difficult to predict involvement of a particular sub-type and keep stocks ready. However, mass-vaccination with the most commonly used strain in an inactivated vaccine in the entire surveillance zone as ring vaccination could be adopted. If it is desired that ring vaccination be carried out in the intensive surveillance zone (ie, 3 to 10 kms radius of infected site), the Department of Animal Husbandry, Dairying and Fisheries (DADF), Government of India may be contacted stating reasons for vaccination, no. of domestic avian species at risk, no. of doses required etc. If convinced, DADF may arrange to procure and dispatch appropriate vaccine to the concerned district authorities. Prior to receiving the vaccine, the district authorities should make all necessary arrangements for carrying out emergency vaccination including mobilisation of teams etc.

2.25. After a cooling off period of about three weeks, the poultry or products from the surveillance zone, which had undergone vaccination can be allowed to be traded outside the zone. It may be noted that vaccination is to be undertaken only during hours of crisis and not as a routine prophylaxis. It is emphasised that vaccination alone will not be sufficient to bring the outbreaks in poultry under control. It must be used in conjunction with comprehensive strategy, i.e., culling of affected birds, strict bio-security, quarantine and other measures to prevent further spread of the disease. If no vaccination is adopted, trading could be resumed four weeks after all birds within 3 kms are culled, provided no fresh case appeared in the surveillance zone between 3 to 10 kms.

### **Surveillance and freedom from disease**

2.26. This is the most difficult part of a control programme, as it will have the direct impact on the poultry industry. Once the disease has been encountered in a geographical region, it will bring along with it associated trade restrictions. In order to resume normal trade practices, it is essential that freedom from the disease be achieved at the earliest. Intensive surveillance needs to be carried out in the surveillance zone. During the course of the outbreak, surveillance should determine extent of infection determined by clinical signs and virus isolation. After the outbreak is contained, the extent of infection needs to be determined by sero-surveillance. In the event of vaccination policy adopted to prevent spread of the disease, the extent of spread of infection needs to be ascertained by differential surveillance between infection and vaccination antibodies. To establish freedom from infection, repopulated flock in the infected area needs to be screened periodically. Random clinical, virological and serological investigations on the repopulated flock for a two months' period is recommended. Such sampling should be done at least once every fortnight to the extent of about 0.5% of the population introduced.

### **Public awareness**

2.27. Awareness in the general public about the disease and its consequences should be made through printed and mass media campaigns based on scientific facts and figures. It must be emphasized that proper cooking at more than 70° temperature for 30 minutes eliminates the virus and it is absolutely safe to consume properly cooked poultry meat and eggs. It is, of course, necessary to encourage hygienic way of slaughtering, dressing and packing of chicken meat. It is important that details of negative results reported by the laboratory in respect of the surveillance samples are periodically furnished to the media. The journalists should also be invited to awareness campaigns to report the things in the right perspective. The poultry farmers associations, cooperatives, NECC, APEDA, etc. should be actively involved in this process. The minimum expenditure required for awareness campaigns can be met from the funds provided under the centrally sponsored scheme of "ASCAD" for the time being.

### **III. Advice to persons handling HPAI affected poultry**

3.1. To evolve a public health policy in respect of influenza in humans due to involvement of HPAI virus is beyond the scope of this document and will be done by the Public Health authorities. It is, however, pointed out here that the health of farm hands, attending veterinary officer, and other staff engaged in culling and disinfection of an infected premises should be under strict observation for a period of at least three weeks. All the persons entering a suspected farm should wear protective clothing. Sero-conversion in these in-contact persons should be monitored. Close contact with live infected poultry could be a source of human infection. Rapid destruction of affected poultry would reduce opportunities for further direct transmission to humans.

#### **Recommendations for protection of persons involved in the mass slaughtering of birds potentially infected with highly pathogenic avian influenza viruses**

3.2. Exposure to infected poultry and their faeces or dust/soil contaminated with faeces could result in human infection and therefore the following precautions should be taken by all those involved in the slaughtering of affected birds :

(i) Cullers and transporters should be provided with appropriate personal protective equipment consisting of (a) protective clothing, preferably overalls plus an impermeable apron or surgical gowns with long cuffed sleeves plus an impermeable apron; (b) disposable examination gloves; (c) well-fitted surgical masks (d) goggles or face masks; (e) cap and (f) disposable shoe covers that can be disinfected.

(ii) All persons who have been in close contact with the infected animals should wash their hands frequently. Cullers and transporters should disinfect their hands after the operation.

(iii) Environmental clean up should be carried out in areas of culling, using the same protective measures as above.

(iv) All persons exposed to infected chickens or to farms under suspicion should be under close monitoring by local health authorities. It is recommended that persons at specific risk of inhaling possible infected material (e.g. cullers and farmers involved in mass culling at commercial farms) receive prophylaxis in consultation with health authorities. Health monitoring of chicken cullers, others involved in the process and their family members should be carried out. These individuals should report any relevant health problems (respiratory complaints, flu-like illnesses or eye infections) to a health care facility.

(v) Serological surveillance of exposed animal workers and veterinarians is encouraged.

(vi) In liaison with designated laboratories, full blood and post mortem specimens (intestinal contents, anal and oro-nasal swabs, trachea, lung, intestine, spleen, kidney, brain, liver and heart) of animals (including pigs) should be collected for investigation of new viral isolates.

### **Advice about contact with poultry in an area with HPAI**

3.3. People in areas with confirmed HPAI should strictly follow the following instructions :

(i) People should avoid contact with chickens, ducks or other poultry as much as possible. Children should not have contact with poultry or any other affected birds.

(ii) Avoid handling (live or dead) chickens, ducks or any other poultry while visiting friends or family, even if the birds are thought to be healthy.

(iii) Avoid contact with chicken farms, duck farms or any farm where birds have been sick, killed or are thought to have bird flu.

(iv) If a person comes into contact with an environment that has had sick/dead chickens, ducks and other poultry, he/she must wash hands well and monitor temperature for 4 days. If he/she develops a high temperature, consult doctor to see whether treatment is needed.

(v) If a person has had contact with any dead birds that have died from avian flu or had contact with the droppings of these birds, consult a doctor to see whether treatment is needed.

### **Raising poultry at home in an area affected with HPAI**

3.4. It is necessary that the poultry farmers, particularly those who are engaged in backyard poultry, in areas affected with HPAI follow certain basic precautionary steps. These are described below :

(i) If someone has any chickens, ducks or any other poultry at home, it is important that he/she knows what to do if and when they are killed or die. He/she should know how to dispose of them and clean up the yard/pen, etc.

(ii) Whenever a person has contact with poultry, the chicken shed/pen or anything with faeces on it, he/she must make sure he/she is protected by a mask, goggles, gown, rubber boots and gloves. If these items are not available, try to improvise as much as possible; for example use a cloth around the mouth and nose, plastic bags to cover the hands and shoes, overalls that can be washed etc. Wear this protective apparel to slaughter the poultry, dispose of

the bodies, clean up the area (see below for advice on how to clean up the area). Make sure that children are not involved.

(iii) After the area has been cleaned, remove all the protective apparel and wash hands, clothes and if possible the body. A shower is the best option. If possible wash clothes in hot or warm soapy water, hang them in the sun to dry. Discard gloves, plastic bags and any other disposable materials. Clean all reusable items such as rubber boots and glasses/goggles. Always wash hands after handling these items.

### **Advice on how to decontaminate the yard/chicken pen**

3.5. The following advice should be followed in respect of decontamination of the yard/chicken pen.

- (i) After the culling of the poultry, the area must be cleaned.
- (ii) Wear all the protective apparel outlined above before starting the cleaning process.
- (iii) Collect any faeces scattered around the yard into a pile to be buried. The faeces should be buried at a depth of at least 1 metre.
- (iv) Try to move droppings without raising too much dust causing dried droppings to possibly blow into the person's face/eyes/mouth.
- (v) Remove as much of the droppings as possible from the chicken coup/shed and bury as above.
- (vi) Clean all areas very well with detergent and water.
- (vii) Discard all disposable items used to protect the person such as gloves, plastic bags, masks, etc. Place reusable items into a bowl with detergent and water for washing.
- (viii) Wash hands very well in soap and water.
- (ix) Shower/wash body using soap and water and wash hair.
- (x) Taking care not to recontaminate the body, wash clothes worn during the cull/clean up; use detergent and hot or warm water.
- (xi) Dry clothes in the sun.
- (xii) Any item that may be used again -such as rubber gloves or boots - should be washed very well in soap/detergent and water. To ensue the items are

clean, wash twice.

(xiii) Always wash hands after handling contaminated items.

## **Annexure I**

### **KIT for the Veterinary Officer**

- 1) Paper and pens
- 2) Epidemiological inquiry form
- 3) Equipment necessary for the clinical visit and sampling procedures:
  - (a) 2 disposable suits
  - (b) 5 pairs of disposable shoe-covers
  - (c) 2 pairs of rubber gloves and 5 pairs of latex gloves
  - (d) disposable caps and face masks
  - (e) paper tissues
  - (f) 5 leak proof containers
  - (g) 5 leak proof and water resistant plastic bags
  - (h) torch
  - (i) active disinfectant solution
  - (j) 2 pens and a notepad
  - (k) 100 syringes 2.5 ml with needle
  - 276 (l) 100 thin, small plastic bags
  - (m) 2 pairs of surgical scissors
  - (n) 2 pairs of forceps
  - (o) tape
  - (p) 2 felt tip pens
  - (q) 1 thermic container (ice box)
  - (r) 5 frozen icepacks

At least 3 of these kits should be available at the District headquarters always.

(Contd.)

## **KIT for the Disease Investigation Officer**

1. The following equipment :
    - (a) 1 thermic container (ice box)
    - (b) 4 pairs of forceps
    - (c) 2 pairs of surgical scissors
    - (d) 1 knife
    - (e) tape
    - (f) labels and pens
    - (g) 1002.5 ml syringes with needle
    - (h) sterile swabs
    - (i) 50 test tubes containing virus transport media
    - (j) 10 leak proof containers
    - (k) 2 disposable suits
    - (l) 5 pairs of disposable shoe-covers
    - (m) 5 pairs of latex gloves
  - 0 (n) disposable caps and face masks
  - (o) 10 black waste-bags
  - (p) 0. 50 rubber bands
  - (q) disinfectant solution
  - (r) cardboard container
- 
2. The samples should be placed in isotonic phosphate buffered saline (PBS), pH7.0-7.4 containing antibiotics.

**Annexure II**

**AVIAN INFLUENZA EPIDEMIOLOGICAL INQUIRY FORM**

Date :  
Dr :  
Phone number :  
Name and Address of farm :  
  
Phone :  
District : State :  
Farm code or identification number :  
Owner :  
Address of the owner :  
  
Phone :  
Information provided by :  
Farm Veterinarian Dr. :  
Present : NO/YES

INFORMATION CONCERNING THE FARM

TYPE OF ESTABLISHMENT : Industrial/Rural/Dealer/Retailer  
CATEGORY/PRODUCTION LINE : Table-egg layers/Meat birds  
Type : Grandparents :  
Parents :  
Pullets :  
Meat-type (*broiler*) :  
Layers :

NUMBER OF BIRDS AND SPECIES PRESENT .

	<u>No.</u>	<u>Date of placing</u>	<u>Sex</u>	<u>Age</u>
Chickens Meat :.				
Breeders :				
Layers :				
Other :				

HATCHERY OF ORIGIN

Company Hatchery : NO/YES

Company:  
Address

District : State  
Phone : Fax

Debeaking operations - Date :

Performed by : Family members/Employed staff/External staff/Other

Remarks

HOUSING SYSTEM

Deep litter : YES NO  
Cage system : YES NO  
Type of ventilation system : . Natural/Natural with fans /Artificial  
Bird proof nets : YES NO  
Possibility of contact with wild birds: YES NO  
Species :  
Other birds present on site : YES NO  
(captive or free) :  
Species :  
Presence of ponds or lakes : YES NO  
Other water reservoirs : YES (specify)NO  
Presence of pigs ; YES (specify)NO  
Other animals : YES (specify)NO

Remarks

2. INFORMATION CONCERNING MOVEMENTS OF BIRDS

a) Introduction of birds from other establishments/hatcheries/farms NO - YES  
(Twenty days before the onset of the first clinical signs)

Date No.

Species Farm Hatchery

Name of Farm :

Address :

District :

b) Introduction of birds from exhibitions/markets/fairs YES NO  
(Twenty days before the onset of the first clinical signs)

Date No . Species

Origin : Fair/Market/Exhibition

District :



4. INFORMATION CONCERNING MOVEMENT OF VEHICLES

(A) Transport of animals, (B) Transport of feed, (C) Transport of eggs, (D) Collection of dead animals, (E) Fuel/Gas, (Other) Specify

(In the time span between 20 days before the onset of the first clinical signs and the date the farm was put under restriction)

Date of entry Vehicle : (AIB/C/D /E/other)  
Name of company Fax/Phone number

5a) INDIRECT CONTACTS WITH OTHER POULTRY ESTABLISHMENTS

NO YES

(Sharing of equipment, vehicles, feed, staff, etc. in the time span between 20 days before the onset of the first clinical signs and the date the farm was put under restriction)

Date of contact  
Name of farm or establishment  
District  
shared vehicle -shared feed -shared equipment -shared staff - collection/recycle of litter  
- other (specify)

5b) CONTACTS WITH OTHER FARMS OWNED BY THE SAME OWNER

NO -YES-

Name of farm or establishment  
Address

District

Species farmed number Empty/Full -

5c) CONTACTS WITH POULTRY FARMS LOCATED NEAR THE OUTBREAK

NO YES

Name of farm or establishment  
Address

District Distance in metres  
Species farmed : number Empty/Full

ANAMNESTIC DATA

WEEKLY MORTALITY

NB: data concerning mortality rates recorded in the 6 weeks prior to the onset of clinical signs

WEEK FROM TO

NUMBER ANIMALS DEAD

Remarks:

Date of onset of AI clinical signs

Clinical signs observed by the farmer

TOTAL NUMBER OF BIRDS

Farm put under restriction (dead or alive)

Number of ill birds (Farm put under restriction)

Number of dead birds (Farm put under restriction)

Number of birds depopulated

NB: this information must refer to the data collected when the farm has been put under restriction after confirmation of HPAI

6.VACCINATION OF BIRDS AND ADMINISTRATION OF DRUGS

Vaccination of birds is practised:    NO    YES-

Date of vaccination

Type of vaccine

Commercial name

Administration route

Live or inactivated

Vaccinating staff :

Family            Employees    External staff            Other

Remarks

Administration of drugs/medicaments

In the last 15 days:    NO    YES    (specify):

Staff who administered the medication:

Family -Employees -External staff -Other  
Remarks

### 7. CLINICAL INVESTIGATION PER SPECIES

Species

Depression -

Respiratory signs : mild/severe

Drop or cessation of egg laying

Oedema, cyanosis or cutaneous haemorrhages

Diarrhoea

Nervous signs

Other

### 8. GROSS FINDINGS

Rhinitis and sinusitis

Tracheitis *catarrhal*

*haemorrhagic* -

Aerisacculitis

Haemorrhages *epicardium* -

*endocardium*

*proventriculus* -

*ovarian follicles*

Enteritis *catarrhal*

*haemorrhagic -*

Pancreatitis

Other:

**Remarks**

**Signature**

Date:



Symptoms

% mortality (from ..... /to..... .)

Species Samples collected

No. samples for detection of Antibodies

No. samples for detection of Virus

Sample identification

Signature :

Date :