Avian Influenza Conference:
Protecting Avian Influenza Responders
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Instituting control zones for entry to and exit from infected premises

Excerpts from *Safety and Field Biocontainment Procedures for Working on Premises Contaminated with Notifiable Avian Influenza*, September 2007 Final Draft.

A. Site evaluation

Wind direction and ventilation

1. If a drawing of the premise or an overhead satellite map is available, obtain it. If not, sketch a site plan with distances marked. Ask the owner from which direction the prevailing wind blows, which direction inclement weather general comes and the location of any particularly windy areas. Draw arrows on the site plan to show these. While wind direction changes and cannot be accounted for at all times, one should take into account the prevalent wind direction and any natural lea in planning decontamination and entry/exit areas.

2. Locate the exhaust fan outlets on all buildings containing infected birds. Mark these on the plan. Workers should avoid being downstream of the outlets.

Physical layout, natural barriers

1. Note the location of buildings, fences or tree lines that can act as natural barriers to the wind or to aerosols produced by high pressure washers. Natural barriers should use as much as possible to separate activities or contain aerosols.

2. Note the terrain. In general, clean activities should be located up hill from dirty ones. Mark hazards (holes, overhead wires, sharp debris) and notify all workers or erect warning signs.

3. Note and protect waterways. One does not want contaminated wash water or large quantities of disinfectant to run into streams, ponds, or ditches.

Adjacency of activities and work flow

1. When working on an contaminated premise, particularly when a number of people or different working groups are present at the same time, it is important to know exactly where each task will be carried out and in what order. Be familiar with the operational procedures for all activities that will take place.

2. "Clean" activities and areas likely to be used by unprotected workers, "clean" vehicles and supplies must be located upwind from aerosol (mist and dust) producing activities For example, if incorrectly located, infectious aerosol plumes created by high pressure washing or transport of dry litter, can jeopardise unprotected employees on break.

3. Consider possible routes of entry and exit, as well as areas large machinery will have to operate. Personnel entry and exit routes should not cross and should be separate from the waste and equipment decontamination area.

Space allocation and services

1. Obtain power requirements, and square footage of the support structures required (portable toilets, shower and shelter trailers, water and air heaters, generators, etc).

2. Determine the availability of power and water.

3. Determine the available free area for installing the support services and in which to establish the zones.

B. Establish the isolation perimeter and contamination control zones

The isolation perimeter is often, but not always the property line. The primary goal is to minimize the number of public, service and CFIA individuals that enter the site. If a high traffic or pedestrian area, contact local law enforcement to patrol and manage the entrance and surrounding area during peak activity periods. Otherwise, assign or request that Security supply a staff member to stay at the entrance to log entry and exit activity. See Appendix ** for a entry/exit log sheet.

Clearly defining three distinct zones and the specific activities that occur in each is necessary to prevent the spread of contamination by personnel and equipment brought onto the premise for the disease eradication activities. Movement from one zone to the next must be controlled, on entry to check that personnel have appropriate PPE and supplies for their job, and on exit to verify adequate decontamination.

Note : it is preferable to set up a separate entrance/exit for vehicles and equipment. This will require more equipment but will prevent contamination of workers by the decontamination efforts.

When trying to determine where to place the zones, start with the Hot zone and work outwards. The limits of the Hot zone are some already set my the virtue of the layout and dynamics of the producer's operation. All contaminated structures and areas and areas that will become contaminated as a result of the eradication activities must be located in the Hot zone. This includes equipment and environments contaminated with faeces or litter from the infected birds, high traffic routes in and out of the buildings, and areas downwind of aerosol and mist producing activities (washing down of equipment, barn exhaust fans or compost piles).

The "Buffer" zone must to be large enough to provide separate areas for personnel entry and exit and equipment decontamination - generally 10 to 15 metres long and wide enough to prevent cross contamination of personnel by other activities (vehicle decontamination for example). It is important to remember that the Buffer zone must be considered to be contaminated, albeit at a lower level than the Hot Zone. Accordingly, nothing may leave the Buffer without final decontamination.

The Col" zone is a controlled area that contains the support functions necessary to the activities on the quarantined premise. It should be located up wind and preferably up hill from the contaminated areas, between the Buffer Zone and the isolation perimeter.

NOTE: If space is limited . Do not try to decrease the Hot and Buffer Zones to carve out a clean area. Rather, ensure adequate decontamination by extending the buffer and or clean zones up to or beyond the premise property line. Alternately, some functions of personnel entry and exit can be relocated to another, controlled area, with contained and controlled transportation between..

C. Definitions

1. Aerosol - a particulate suspended in a gaseous medium

2. AI - Avian Influenza

3. Buffer Zone (also called the Warm Zone) - this is the zone between the Clean and Hot zones, where contamination reduction takes place. It is important to remember that the Buffer zone must be considered to be contaminated, albeit at a lower level than the Hot Zone.

4. Clean Zone - a controlled area that contains the support functions necessary to the activities on the quarantined premise.

5. Hot Zone - the structures and area considered to be contaminated or potentially contaminated with the hazard (the hazard in this case being the avian influenza virus or infected birds and their products). This would include equipment and environments contaminated with faeces or litter from the infected birds, as well as high traffic routes in and out of the barns where the birds live and areas downwind of aerosol producing processes.

6. Isolation perimeter - the designated access control line. This is always the line between the cold zone and the general public. Often, but not always, this will be the infected premise property line.

D. References

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