



Français	Contact Us	Help	Search	Canada Site
PPHB Home	Centres	Publications	Guidelines	A-Z Index
Child Health	Adult Health	Seniors Health	Laboratories	Surveillance

Population and Public Health Branch (PPHB)

[Office of Laboratory Security]



Biosafety Advisory

Highly Pathogenic Avian Influenza

Interim Guidelines

March 10, 2004

Subsequent to the recent Avian Influenza outbreaks in several Asian countries and any additional areas as identified^{1,2,3}, we are providing you with the following interim biosafety advisory regarding the laboratory handling of clinical specimens associated with this strain of influenza.

Precautions for laboratories receiving and processing human clinical specimens and tissue samples from suspicious human Avian Influenza cases²:

- specimens may be processed for packaging and distribution to diagnostic laboratories for further testing in a Containment Level 2 laboratory^{4,5} using the additional operational practices as outlined below
- diagnostic testing to rule out Avian Influenza may be performed in a Containment Level 2 laboratory^{4,5} using the additional operational practices as outlined below.

Additional operational practices:

- laboratory workers should wear protective clothing (e.g. protective solid-front gowns, gloves, and N-95 respiratory protection) in accordance with the risk of exposure when handling specimens
- manipulations that may produce aerosols should be carried out in a certified biological safety cabinet
- centrifugation of respiratory and tissue specimens should be carried out using sealed centrifuge cups or rotors, both of which are unloaded in a biological safety cabinet
- all contaminated liquid and solid wastes must be decontaminated prior to disposal⁶, preferably by autoclaving

Precautions for laboratories handling human clinical specimens from confirmed Avian Influenza cases² for isolation and further manipulation of the agent:

- specimens may be processed for packaging and distribution to laboratories for further testing in a Containment Level 2 laboratory^{4,5} using the additional operational practices as outlined above
- manipulations involving growth of the agent should be in a Containment Level 3 laboratory^{4,5} using Containment Level 3 operational practices^{4,5}
- Manipulations involving growth of the agent must not be performed in the same laboratory that is simultaneously culturing material that

- may contain human influenza
- PCR testing of extracted genetic material may be performed in a Containment Level 2 laboratory^{4,5}

Note: For Containment Level 3 facilities manipulating specimens from confirmed Avian Influenza cases, the Canadian Food Inspection Agency requires, under the authority of the *Health of Animals Act*⁷, that operational procedures must be reviewed and certified by the Canadian Food Inspection Agency prior to work commencing. In addition, all staff or visitors must agree, before entering the laboratory, not to have contact with avian and porcine species for a period of five (5) days.

For information on biosafety precautions for other activities (eg. research and handling animal specimens with Highly Pathogenic Avian Influenza), contact the Biohazard Containment and Safety Division at the Canadian Food Inspection Agency (613) 221-7088.

Transportation of clinical specimens:

- Packaging, shipping and transport of specimens must, as a minimum, comply with the requirements of the Transportation of Dangerous Goods Regulations, Transport Canada⁷ and the Dangerous Goods Regulations, International Air Transport Association⁸. These requirements state:
 - For air shipment, clinical specimens from suspicious and confirmed cases (ie. samples from patients meeting case definition) must be shipped as UN 3373 diagnostic specimens or clinical specimens
 - For air shipment, cultures of Highly Pathogenic Avian Influenza Virus, must be shipped as UN 2814 Infectious Substance affecting humans (Highly Pathogenic Avian Influenza Virus)(Risk Group 3).

Further biosafety information may be obtained from the Office of Laboratory Security, Centre for Emergency Preparedness and Response, Health Canada at (613) 957-1779, fax (613) 941-0596 or web site at: <http://www.hc-sc.gc.ca/pphb-dgsp/ols-bsl/index.html> or the Biohazard Containment and Safety Division of the Canadian Food Inspection Agency at (613) 221-7088, fax (613) 228-6129 or web site at: <http://www.inspection.gc.ca/english/sci/lab/bioe.shtml>. 

References:

1. Current SARS/Avian influenza (H5N1) affected areas, Health Canada <http://www.hc-sc.gc.ca/pphb-dgsp/h5n1/index.html>
2. Flu Information - Avian Influenza, Health Canada <http://www.hc-sc.gc.ca/english/diseases/flu/avian.html>
3. Canadian Food Inspection Agency, Animal Products, Animal Health and Production Division. Avian Influenza, <http://www.inspection.gc.ca/english/animal/heasan/disemala/avflu/avflue.shtml> 
4. Laboratory Biosafety Guidelines, 3rd Edition (Draft), Health Canada <http://www.hc-sc.gc.ca/pphb-dgsp/ols-bsl/lbg-ldbl/index.html>
5. Containment Standards for Veterinary Facilities, 1st edition, 1996, Agriculture and Agri-Food Canada, <http://www.inspection.gc.ca/english/sci/lab/convet/convete.shtml> 
6. Highly Pathogenic Avian Influenza MSDS. Office International des Epizooties. Updated April 22, 2002. http://www.oie.int/eng/maladies/fiches/a_A150.htm 
7. Health of Animals Act, Department of Justice Canada, <http://laws.justice.gc.ca/en/H-3.3/63034.html> 

8. Transport Dangerous Goods, Transport Canada,
<http://www.tc.gc.ca/tdg/menu.htm> 
9. Dangerous Goods Regulations, International Air Transport
Association, <http://www.iataonline.com> 

[[Office of Laboratory Security](#)]

[top](#) 

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[Important Notices](#)

[[Français](#)] [[Contact Us](#)] [[Help](#)] [[Search](#)] [[Canada Site](#)]
[[PPHB Home](#)] [[Centres](#)] [[Publications](#)] [[Guidelines](#)] [[A-Z Index](#)]
[[Child Health](#)] [[Adult Health](#)] [[Seniors Health](#)] [[Laboratories](#)] [[Surveillance](#)]