

## Interim Guidance on the Management of Close Contacts of Persons with Avian Influenza A (H7N9) Virus Infection

This interim guidance provides advice to assist clinicians and Public Health decide when antiviral agents should be used for chemoprophylaxis of close contacts of confirmed cases of human infection with avian influenza A (H7N9). See European Centre for Disease Prevention and Control (ECDC) case definition [here](#).

These recommendations are based upon expert opinion (Irish Pandemic Influenza Expert Group) and current US Centers for Disease Control and Prevention (CDC) guidance. <sup>(1)</sup> This guidance will be updated as additional information on H7N9 virus epidemiology and transmissibility becomes available.

These interim recommendations are based upon available information and the following considerations:

- There is no available avian influenza A (H7N9) vaccine at this time.
- This virus has caused significant morbidity and mortality among detected avian influenza A (H7N9) cases in China to date.
- There is no current evidence of sustained human-to-human virus transmission
- Sufficient supplies of antiviral agents that are expected to be effective against avian influenza A (H7N9) are available.

The aim of this interim guidance is to prevent further spread of avian influenza A (H7N9) if there are sporadic travel acquired avian influenza A (H7N9) cases notified in Ireland. It is specific to a scenario where there are sporadic cases of avian influenza A (H7N9) associated with poultry exposure and non-sustained human-to-human avian influenza A (H7N9) virus transmission in China. This guidance will be updated if circumstances change.

### Definition of Close Contacts of a confirmed case of avian influenza A (H7N9) –as per CDC guidance <sup>(1)</sup>

**Close contacts** are defined as persons within approximately 6 feet (2 meters) or within the room or care area of a confirmed case of avian influenza A (H7N9) case for a prolonged period of time, or with direct contact with infectious secretions (such as being directly in the path of a sneeze) while the patient was likely to be infectious (beginning 1 day prior to onset of signs and/or symptoms and continuing until resolution of illness). <sup>(2)</sup>

In general, decisions to start antiviral chemoprophylaxis should be guided by the risk stratification described below, <sup>(3)</sup> based on observational data for reported cases of human infections with avian influenza A( H7N9) and A(H5N1) viruses, and on data from seasonal influenza studies.

1. **Highest-risk exposure groups** (greatest possible risk of transmission)
  - Household or close family member contacts of a confirmed case
  
2. **Moderate-risk exposure groups** (unknown risk of transmission)
  - Healthcare workers (HCW) undertaking aerosol generating procedures (AGP) e.g. intubation, manual ventilation, non-invasive ventilation (e.g. BiPAP, BPAP) and tracheostomy insertion **even if wearing appropriate PPE**<sup>1</sup>
  - HCW who did not wear PPE or with a recognised breach in PPE protocol during normal care (i.e. all care with the exception of AGP above).
  - All other HCW who wore appropriate PPE are not considered contacts in this exposure group
  
3. **Low-risk exposure groups** (transmission unlikely)
  - Others who have had social contact of a short duration with a confirmed case in a non-hospital setting (e.g., in a community or workplace environment) <sup>(4)</sup>

### Follow-up of Close Contacts of an avian influenza A (H7N9) Case

1. **Public health will identify and monitor all close contacts of confirmed cases of avian influenza A (H7N9) virus (see [ECDC case definition](#)) for new illness as soon as possible. HCW contacts will be identified and followed up by occupational health, or the designated hospital liaison person, allocated as such by the outbreak response team.**
  - a. Available data suggest that the estimated incubation period for human infection with H7N9 virus is generally 3 to 7 days, but has been reported to be as long as 10 days <sup>(2) (3)</sup>
  
2. **Identified close contacts should be monitored daily for 10 days after the last known exposure to a confirmed avian influenza A (H7N9) case.**
  - a. Close contacts should be requested to undertake daily measurement of their temperature and monitoring for the presence of respiratory symptoms during this period. Any close contacts with a measured temperature of  $\geq 38.0^{\circ}\text{C}$  ( $\geq 100.4^{\circ}\text{F}$ ) or any new respiratory symptoms (e.g., cough, sore throat, shortness of breath, difficulty breathing) should be referred for prompt medical evaluation and testing for avian influenza A (H7N9) virus infection.
  - b. A thermometer and a small supply of masks (for contacts to wear if they become symptomatic and need to seek medical assistance) should be provided to all contacts

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<sup>1</sup> See infection prevention and control guidance for avian influenza A (H7N9) [here](#).

- c. Contacts should be requested to contact Public Health or Occupational Health as appropriate if they develop symptoms as above.
- d. To facilitate investigation, and if resources are available, close contacts of H7N9 cases under investigation also may be identified and monitored for symptoms while the results of laboratory testing are pending.

### Post-exposure Chemoprophylaxis of Asymptomatic Close Contacts

Antiviral chemoprophylaxis with neuraminidase inhibitors (NAI) i.e. oseltamivir or inhaled zanamivir should be recommended for close contacts of a confirmed avian influenza A( H7N9) case according to the risk of exposure.

- In high-risk exposure groups, **chemoprophylaxis should be administered.**
- In moderate-risk exposure groups, **chemoprophylaxis could be considered.**
- In low-risk exposure groups, **chemoprophylaxis is not routinely recommended.**

1. Decisions to start antiviral chemoprophylaxis for persons in moderate- and low-risk exposure groups should be based on clinical judgment, with consideration given to the type of exposure and to whether the close contact is at high risk for complications from influenza (see [Guidance on the use of antiviral agents for the treatment and prophylaxis of influenza for list of those at high risk](#))
2. Administration of chemoprophylaxis should begin as soon as possible after first exposure to the confirmed case.
3. **The treatment dose for NAI (oseltamivir or zanamivir) (two doses per day) is recommended instead of the typical chemoprophylaxis regimen (1 dose per day). For dosage recommendations for treatment by age group, please see [Guidance on the Use of antiviral agents for the treatment and prophylaxis of influenza, P. 10.](#)**
4. This recommendation for twice daily chemoprophylaxis dose is based on limited data that support higher chemoprophylaxis dosing in animals for avian influenza A (H5N1) virus, <sup>(4)</sup> and on the desire to prevent development of antiviral resistance while receiving chemoprophylaxis. <sup>(5-7)</sup>
5. Chemoprophylaxis with treatment doses of a neuraminidase inhibitor medication should be continued for 5 or 10 days. If exposure was time-limited and not on-going, 5 days of medication from the last known exposure is recommended. If exposure is likely to be on-going (e.g., household setting), 10 days is recommended because of the potential for prolonged infectiousness in the avian influenza A(H7N9) patient.

### Antiviral Treatment of Symptomatic Close Contacts (Avian Influenza A (H7N9) Cases under Investigation)

- Symptomatic close contacts should be promptly tested (see algorithm on [Investigation & management of possible human cases of avian influenza A\(H7N9\), in returning travellers](#)) for avian influenza A(H7N9) virus infection (including resistance testing) and simultaneously treated with antivirals (one dose twice daily for 5 days).
- Symptomatic persons should be requested to stay at home except to seek medical care and to limit contact with other persons until their illness is resolved.

### New Symptoms after Use of an Antiviral Agent

- If a close contact becomes symptomatic, or has worsening of symptoms, after or during the use of antivirals, contact with other persons should be minimised, appropriate infection prevention and control measures recommended for patients with avian influenza A (H7N9) infection should be used in health care settings (see [Irish infection prevention and control guidance](#)), and respiratory specimens should be collected for avian influenza A (H7N9) virus testing at National Virus Reference Laboratory (NVRL) as soon as possible.
- If a close contact tests positive for avian influenza A(H7N9), i.e. becomes a case, and is taking antiviral chemoprophylaxis, test for resistance promptly. If oseltamivir resistance is detected, amend treatment on the basis of the findings. Questions regarding arranging testing for antiviral resistance, or regarding appropriate clinical management if antiviral resistance is a concern, should be directed to the NVRL.<sup>(8)</sup>
- If the patient displays progressive lower respiratory symptoms, they should be promptly hospitalised for treatment as per [Guidance on the use of antiviral agents for the treatment and prophylaxis of influenza](#)

### References

1. Centers for Disease Prevention and Control (CDC), USA. Interim Guidance on the Use of Antiviral Medications for Chemoprophylaxis of Close Contacts of Persons with Avian Influenza A (H7N9) Virus Infection. CDC, USA, September 2013. Available at <http://www.cdc.gov/flu/avianflu/h7n9-av-chemoprophylaxis-guidance.htm>
2. Li Q, Zhou L, Zhou M, et al. Preliminary Report: Epidemiology of the Avian Influenza A (H7N9) Outbreak in China. The New England journal of medicine **2013**.
3. Chen Y, Liang W, Yang S, et al. Human infections with the emerging avian influenza A H7N9 virus from wet market poultry: clinical analysis and characterisation of viral genome. Lancet **2013**; 381(9881): 1916-25.
4. Boltz DA, Rehg JE, McClaren J, Webster RG, Govorkova EA. Oseltamivir prophylactic regimens prevent H5N1 influenza morbidity and mortality in a ferret model. The Journal of infectious diseases **2008**; 197(9): 1315-23.
5. Centers for Disease C, Prevention. Oseltamivir-resistant 2009 pandemic influenza A (H1N1) virus infection in two summer campers receiving prophylaxis--North Carolina, 2009. MMWR Morbidity and mortality weekly report **2009**; 58(35): 969-72.
6. Baz M, Abed Y, Papenburg J, Bouhy X, Hamelin ME, Boivin G. Emergence of oseltamivir-resistant pandemic H1N1 virus during prophylaxis. The New England journal of medicine **2009**; 361(23): 2296-7.
7. Cane A, Casanueva E, Iolster T, et al. First isolation of an oseltamivir-resistant influenza A (H1N1) strain in Argentina. The Pediatric infectious disease journal **2010**; 29(4): 384.

8. Hu Y, Lu S, Song Z, et al. Association between adverse clinical outcome in human disease caused by novel influenza A H7N9 virus and sustained viral shedding and emergence of antiviral resistance. *Lancet* 2013.