



Action plan in Catalonia in the event of a possible flu pandemic

**Action protocol to be followed in the
event of a detection of a possible case
of infection in human beings
by the influenza virus A (H5N1)**

**Pandemic alert phase 3
(phase without transmission between
humans)**

26 April, 2006

Introduction

Avian influenza is an infectious disease transmitted through birds and is caused by influenza A virus strains. This type is the one that causes human epidemics and pandemics.

The natural reservoir of the virus are migratory birds —particularly wild ducks — which are most resistant to infection. Farm birds, including chickens and turkeys, are particularly susceptible to the disease, with a mortality of close to 100% in the case of the so-called avian influenza, which is highly pathogenic. The avian influenza virus rarely affects humans, and normally neither does it affect species other than birds and swine.

The first cases of human infection by this virus A (H5N1) were identified in 1997, in Hong Kong, where it infected 18 people, 6 of whom died. Other recent outbreaks of avian influenza in humans have been limited. In February, 2003 an outbreak of avian influenza caused by the influenza A (H5N1) virus was reported, causing two cases in human beings and one death in Hong Kong. In the Netherlands, an outbreak of the influenza A (H7N7) virus caused the death of a vet in April 2003, and mild disease in 89 people. In Hong Kong, in 1999, two mild cases of avian disease were reported in children, caused by the flu virus A (H9N2) and another case was reported in December 2003.

The investigation into these outbreaks showed that the source of human infection was close contact with infected live chickens. This is why it is recommended that poultry should not be sold directly to consumers in places with outbreaks of avian influenza in poultry. The eggs of infected birds may also be contaminated by the virus, whereby care should be taken when handling them. Proper cooking will eliminate the virus (cooling or freezing do not). Although transmission through food has not been described, for the sake of precaution the WHO recommends that they always be cooked until an internal temperature of 70°C is reached.

In human beings, the period of incubation of the disease produced by the A (H5N1) virus would be between 2 and 4 days (it may reach 8 days). Symptoms seem to begin with acute respiratory symptoms, with fever above 38°C, cough, odynophagia, respiratory difficulty and general malaise evolving to symptoms of respiratory distress secondary to a viral pneumonia. Marked lymphopenia has also been observed, and a high number of cases presented diarrhoea at the onset of symptoms. The mortality rate among the hospitalised cases is high (40-60%), and death occurs between 6 and 29 days as of the onset of symptoms (with the mean ranging from 8 to 13 days in the different studies carried out). The high mortality recorded hitherto renders specialised and immediate

medical care advisable for these cases. The early use of neuraminidase inhibitors may be a relevant approach for the treatment of these patients. Initial in vitro studies on the sensitivity of the influenza A (H5N1) virus have shown that it is resistant to M2 protein inhibitors (amantidine and rimantidine) and sensitive to oseltamivir.

As yet there is no efficacious vaccine for the H5 virus. Nevertheless, vaccination with the usual epidemic flu vaccine is recommended for everyone involved in the slaughter of poultry in countries affected or in those in direct contact with live infected birds and/or their excrements.

Human cases of avian influenza caused by the influenza A (H5N1) virus have been reported and confirmed by the WHO in Azerbaijan, Cambodia, Indonesia, Iraq, Thailand, Turkey, Vietnam and China. Up until April 3, 2006, a total of 186 human cases had been confirmed, with 105 deaths. In the early months of 2006 no cases have been reported in Thailand or Vietnam, and only one case in Cambodia, but cases have appeared in new countries closer to Europe, such as Turkey, Azerbaijan and Iraq. The appearance of human cases coincided with the spread of the infection by same virus in poultry.

In Spain, the anti-flu vaccination is recommended for people who have to travel to areas affected by avian influenza in poultry. This recommendation aims to avoid confusion between common flu symptoms caused by a virus contained in the vaccine and flu symptoms caused by the avian virus. Moreover, it aims to reduce the probability of a possible co-infection by the two viruses (human and avian) in the same person, since this could contribute to the reassortment of the genetic material of the aforementioned viruses. For the same reason, anti-flu vaccination must be promoted among health staff.

In Spain there is a study plan of avian influenza in poultry in progress. In Catalonia, the Centre de Sanitat Avícola de Catalunya i Aragó is the official laboratory of the Department of Agriculture, Livestock and Fisheries of the Autonomous Government of Catalonia and of the Autonomous Ministry of Agriculture of the General County Council of Aragon, for the poultry sector. This laboratory has been conducting, for the last 8 years, different samples for the detection of avian influenza and has obtained negative results in all the analyses carried out. Hitherto no avian influenza virus has been detected in our country.

Moreover, the Department of the Environment and Housing performs regular controls on wild birds, particularly in major risk areas such as wetlands and areas where migratory birds arrive.

At the moment the entry of meat, eggs and other poultry-derived products and live birds from all the countries affected by the epizooty into the European Union is prohibited.

As yet, the WHO has no evidence of person-to-person transmission. The molecular studies of the virus isolated in the two Vietnam siblings, aged 23 and 30 years, who died, confirmed that the virus is of avian origin and contains no gene fragments of the human influenza virus. This finding rules out a possible person-to-person transmission of the virus.

For more updated information, see the Department's website (<http://www.gencat.net/salut>).

ACTION PROTOCOL IN THE EVENT OF A SUSPECTED OR PROBABLE CASE OF AVIAN INFLUENZA

* Definition of suspected case

- Recent stay or trip, within the 7-10 days prior to the onset of the symptoms, in one of the countries where the presence of the H5N1 avian influenza virus in poultry and/or people has been documented.
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- Presence of the H5N1 avian influenza virus in poultry and/or humans in our territory.

And at least one of the following elements in the areas visited:

- Having been in direct contact with live or dead animals susceptible to be infected (visit to a farm, contact in a market, etc., in areas where the presence of the virus has been confirmed), in the 7-10 days prior to the onset of the symptoms.
- Contact with a person diagnosed with influenza A (H5N1) in the 7-10 days prior to the onset of the symptoms.
- +
- High fever (> 38°C).
- Cough, odynophagia or respiratory difficulty.
- Chest X-ray with infiltrates consistent with pneumonia or signs compatible with respiratory distress syndrome with no alternative diagnosis.

* Definition of confirmed case

Suspected case, with positive results in the laboratory for the influenza A (H5N1) virus:

- Positive culture of the influenza A (H5N1) virus,
- Positive PCR specific for the influenza A (H5N1) virus,
- Seroconversion (serum is negative in the acute phase and positive in the convalescent phase, or else if the titre obtained in convalescent phase serum is at least four times higher than that of the acute phase).

* Definition of probable case

Suspected case, not confirmed in the laboratory, but in which no alternative diagnosis has been found that might explain the cause of the disease.

Exclusion criteria

A case must be excluded if an alternative diagnosis explains the cause of the disease.

ACTION PROTOCOL IN THE EVENT OF A SUSPECTED OR PROBABLE CASE

- If the case is attended to at a primary care centre it must be referred to the closest hospital with an ICU, with health transport (following telephone contact), and a surgical mask must be given to and used by the patient from the outset.
- The receiving personnel (admission, screening, etc.) of every health centre must be aware of the possibility of receiving a suspected or probable case of avian influenza, whereby they must have the updated information available on the Department's website and know the areas with outbreaks of avian disease in poultry (<http://www.fao.org>) and the countries where cases in humans have been documented. If a person with symptoms consistent with those described (high fever above 38°C, cough, respiratory symptoms), they must be asked immediately, or given the questionnaire (available in different languages), if they have arrived from a country affected by avian influenza A (H5N1) in farm birds and/or in humans within the preceding 7-10 days, and also be questioned on possible exposure over these 7-10 days to infected birds if cases confirmed in poultry have already appeared in our territory.
During the wait, the patient must be asked to don a surgical mask, observe the hygiene standards and "respiratory label" (sneeze or cough using disposable paper handkerchiefs, and then dispose of them in a plastic bag and wash their hands), and likewise be accommodated, if possible, in a room away from other patients, with the door closed, or in a chair or bed more than one metre away from the other users.
- Since for the moment no person-to-person transmission has been documented, care for these patients will be provided according to the standard and droplet precautions, which are those which correspond to patients with a respiratory process: use of gloves,

careful washing of hands, use of surgical mask and eye protection during practices when there is a risk of splashes).

- When the patient has been seen in the hospital and the suspicion has been confirmed by means of a chest X-ray, the case must be reported urgently to the corresponding epidemiological monitoring unit (see annex) or to the Emergency Epidemiological Monitoring System of Catalonia (SUVEC, tel. no. 627 480 828), if the suspected case occurs outside normal working hours or on a holiday.
- The corresponding epidemiological monitoring unit will compile the clinical and epidemiological information of the case and will actively detect possible co-exposed individuals.
- If the epidemiologist considers that it is a probable case he will initiate the antiviral treatment circuit.
- The patient will be hospitalised in the same hospital. Care to these patients will be provided using the aforementioned precautions (standard precautions plus precautions for droplet transmission). The patient must be isolated in the room and not have any contact with other respiratory or immunocompromised patients.
- All the personnel attending to the patient must have been given the seasonal anti-flu vaccine.
- The patient must remain hospitalised until the infection is confirmed or ruled out and their clinical state allows them to be discharged.
- For confirmation of the case, after the corresponding epidemiological monitoring unit has been consulted, the following **samples must be taken immediately**:

1) Nasal exudate: a specific swab must be used to obtain and transport the samples for virological studies to be carried out (ViralCulturette type). It must be stored cooled (4°C) and be transported immediately to the Hospital Clínic laboratory.

2) Pharyngeal exudate: a specific swab must be used to obtain and transport the samples for virological studies to be carried out (ViralCulturette type). It must be stored cooled (4°C) and be transported immediately to the Hospital Clínic laboratory.

(These two samples may be replaced by a single nasopharyngeal aspirate sample.)

3) A volume of 5 ml of whole blood in a tube **without** anticoagulant that must be kept at ambient temperature until it is delivered to the laboratory. Alternatively, a

sample of serum may be obtained (1-2 ml) and kept in the refrigerator until it is transported to the laboratory.

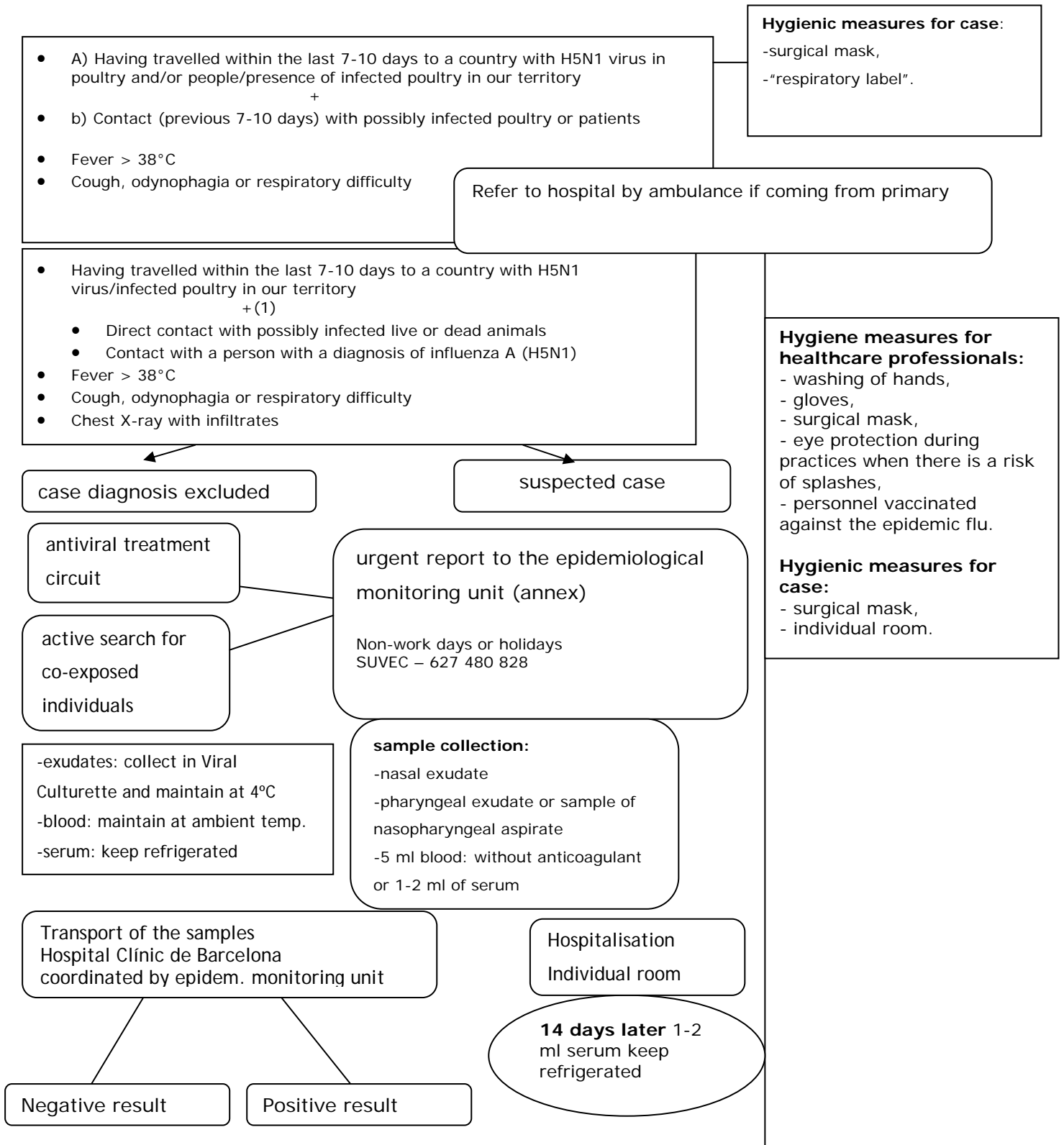
⇒ **14 days later**, 1-2 ml of serum should be sent again and kept refrigerated until it is transported to the laboratory.

(The two serum samples may be sent after 14 days, when the second sample is available. The first sample must be stored frozen at -20°C).

- The carriage of the biological samples from the hospital where the patient is located to the Hospital Clínic, where the analyses will be carried out, will be coordinated by the corresponding epidemiological monitoring unit (see annex) or, if the suspicion is outside working hours or on a holiday, the Emergency Epidemiological Monitoring System of Catalonia (SUVEC, tel. no. 627 480 828).

Steps to be taken in the event of a suspected or probable case of avian influenza (phase 3)

Reception (primary or hospital)



ANNEX 1

TELEPHONE NUMBERS OF THE EPIDEMIOLOGICAL MONITORING UNITS

- **Public Health Agency of Barcelona (city of Barcelona)**
 - Epidemiology Service 932 384 545
 - **Territorial Health Services in Barcelona**
 - Epidemiological Monitoring Unit of the Barcelonès Nord and Maresme Region 935 671 160
 - Epidemiological Monitoring Unit of the Centre Region 937 361 260
 - Epidemiological Monitoring Unit of the Costa de Ponent Region 934 213 255
 - **Territorial Health Services in Girona**
 - Epidemiology Section 972 200 054
 - **Territorial Health Services in Lleida**
 - Epidemiology Section 973 701 600
 - **Territorial Health Services in Tarragona**
 - Epidemiology Section 977 224 151
 - **Territorial Health Services in Les Terres de l'Ebre**
 - Epidemiology Section 977 449 625
- Epidemiological Monitoring Emergency System of Catalonia (SUVEC)**
627 480 828

**Epidemiological data sheet for reporting a suspected case of influenza A (H5N1)
Phase 3**

Patient data

Name Surnames

Date of birth

Gender

___/___/_____

– Man – Woman

Regular address

no.

Tel. no.

Municipality

Province

Mun. district

Code

Country

Address at time of diagnosis

Details of the reporting doctor

Name

Surnames

Health Centre

Tel. no

Municipality

Province

Code

Date of the report

Epidemiological background

What affected country or area did he/she travel to in the 7-10 days prior to the onset of the symptoms?

If patient has travelled or we already have cases of avian influenza in poultry in Catalonia, did he/she have contact with birds? Species
Type of contact

Yes No

Did he/she have contact with a confirmed human case? Type of contact

Yes No

Clinical data

Date of onset of symptoms

Temperature	Cough	Odynophagia	Respiratory difficulty/	Dyspnoea
°C	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

X-ray-Respiratory-Distress	X-ray-Pulmonary-infiltrate	X-ray-Others (specify)
Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	

Hospitalisation	Date of admission	Hospital
Discharge date		

Yes No

Healing <input type="checkbox"/>	Complications	Specify
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Yes No

Final date of the symptoms:

Death:	Date of death
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Yes No

Samples (sent to the Microbiology Service of the Hospital Clínic)

Nasal exudate	Collection date	Date sent
Yes <input type="checkbox"/> No <input type="checkbox"/>		
Nasal exudate	Collection date	Date sent
Yes <input type="checkbox"/> No <input type="checkbox"/>		
Serum acute phase	Collection date	Date sent
Yes <input type="checkbox"/> No <input type="checkbox"/>		
Serum convalescent phase	Collection date	Date sent
Yes <input type="checkbox"/> No <input type="checkbox"/>		
Nasal exudate	Collection date	Date sent
Yes <input type="checkbox"/> No <input type="checkbox"/>		
Others (specify)		
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<hr/>		

Treatment with antivirals

Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Drug used	Dose	
Day and time of the beginning of the treatment		
Has he/she had previous prophylaxis?	Drug	Dose
Yes <input type="checkbox"/> No <input type="checkbox"/>		
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Conclusion

Confirmed case	<input type="checkbox"/>
Probable case	<input type="checkbox"/>
No case	<input type="checkbox"/>

This document was drafted by a task force comprised of: Neus Cardeñosa (General Board of Public Health), Elisenda Carrau (Catalan Association of Infirmary), Joan Caylà (Spanish Association of Epidemiology), Manuel R. Chanovas (Catalan Society of Emergency) i Marta Vilanova (Council of College of graduates of Infirmary of Catalonia) and it has been approved by all members of the Advisory Scientific Council of the Influenza Pandemic Plan.