Public Health England

“The First Few Hundred (FF100)” Enhanced Case and Contact Protocol v12

Epidemiological Protocols for Comprehensive Assessment of

Early influenza A(H7N9) Cases and their close contacts in the United Kingdom

Public Health England

United Kingdom

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Summary

The epidemiological, clinical and virological investigation of the first imported cases of influenza A(H7N9) infection and their close contacts is essential in order to inform guidance and policy in directing the United Kingdom's (UK) public health response to this newly identified influenza virus, first detected in Eastern China in early 2013.

The epidemiological methods to guide data collection for the comprehensive assessment of these confirmed cases and their close contacts are set out in this document. The protocol outlines the public health investigation of persons with laboratory confirmed influenza A(H7N9) infection, along with their close contacts.

1.0 Overview of FF100 approach

1.1 Introduction and overview

The first human cases of influenza A(H7N9) were identified in China in March 2013. This is an avian influenza which has resulted in serious respiratory infection in over 100 persons in China since March 2013. There is no evidence of sustained person-to-person transmission to date[1].

A flexible and multifaceted approach is required to collect key epidemiological, clinical and virological data on any confirmed cases and their close contacts.

1.2 Protocol objectives

The overall aim is to gain an early understanding of some of the key clinical, epidemiological, and virological characteristics of the first cases of H7N9 infection detected in the UK to inform the development and updating of public health guidance to manage cases and reduce the potential spread and impact of infection in the UK.

The primary objectives are to provide estimates of:

- Clinical presentation and course of disease;
- Secondary infection attack rate amongst close contacts (overall and by key factors such as by setting, age and gender for various end-points)[2];
- Serial interval[3];
- Symptomatic proportion of cases

The secondary objectives are to provide data to support the estimation of:

- The basic reproductive number (R_0)[4].
- Incubation period[5]
- Effectiveness of anti-virals
- Preliminary infection-severity ratios (e.g. case-hospitalisation and case-fatality ratios)[6]

[1] World Health Organisation. WHO Risk Assessment – Human infections with avian influenza A(H7N9) virus 10 May 2013. http://www.who.int/influenza/human_animal_interface/influenza_h7n9/RiskAssessment_H7N9_10May13.pdf Accessed on 29 May 2013.

[2] Attack rate is defined as the proportion of a well-defined population that develops illness over a particular period of time. The secondary attack rate is a measure of the frequency of new cases of an illness among the contacts of known cases in a defined period of time.

[3] Serial interval is defined as the period of time from the onset of symptoms in the index case to the onset of symptoms in a contact case.

[4] The reproduction number, R_0, is defined as the average number of secondary cases of an infectious disease that result from one infected person in a susceptible population.

[5] Incubation period is defined as the period of time between an exposure resulting in infection and the onset of clinical symptoms of disease.

[6] Case hospitalisation ratio (CHR) is defined as the proportion of those affected (with symptoms) that are admitted to hospital. The case fatality ratio (CFR) is defined as the proportion of case which die as a direct or indirect consequence of their infection.

This information will be used to refine/update recommendations for surveillance (e.g. case definitions), to characterise the key epidemiological transmission features of the virus, help understand geographic spread, severity and impact on the community and inform operational models for implementation of countermeasures such as case isolation, contact tracing and use of anti-virals.

1.5 Coordination of investigations and review of data

Coordination of investigations and sharing of information in real time will be needed at both country and UK levels. Epidemiologists, modellers, virologists, statisticians, clinicians and public health experts will assess progress in developing early estimates of key epidemiological, clinical and virological parameters.

Overall co-ordination of the system will be undertaken by Public Health England (PHE).

Case investigations will be undertaken by the relevant local Public Health England Centres and the equivalents in the Devolved Administrations.

The PHE Field Epidemiology Service will provide support to the local investigations as required. It is envisaged that the FF100 investigations will focus on the early cases and their contacts and will stop earlier than during the 2009 pandemic.

The FF100 system will be maintained centrally by PHE. Centralised coordination will require development of a “command and control” plan to allow for triage and prioritisation of investigations.

CIDSC will undertake analysis of data and report back to PHECs and others routinely.

1.6 Country-specific adaptation of the protocols

It is envisioned that all countries of the UK will use FF100 H7N9 protocols to guide their investigations. A common UK approach will facilitate aggregation of data across countries of the UK. However, it is recognised that the Devolved UK administrations may need to tailor some aspects of the protocols to their individual public health, laboratory and clinical care systems.

2. Methods

2.1 Case and contact definitions

The following interim UK case definitions for influenza A(H7N9) are proposed:

PATIENT UNDER INVESTIGATION (POSSIBLE CASE):

Any person with:

Fever ≥38ºC or history of fever

AND

- Clinical or CxR findings of consolidation

OR

- Acute Respiratory Distress Syndrome (ARDS)

OR

- Other severe / life-threatening illness suggestive of an infectious process

AND

- Visit to China within the 10 days before onset of symptoms

OR

- Had close contact with avian influenza A(H7N9) confirmed case in 10 days before onset of symptoms

Case classification:

A. Possible case

Any person meeting the criteria for a 'Patient under investigation'

B. Probable case

Any person fitting the possible case definition

AND

Not already explained by any other infection or aetiology[1]

AND

Influenza A positive and unsubtypable

[1] If the patient has an alternative aetiology, but this does not fully explain the presentation and/or clinical course, then the patient should be considered a possible case and tested for influenza A(H7N9)

C. Confirmed case
Any person with positive laboratory confirmation of infection with influenza A(H7N9).

D. Discarded case
Any possible or probable case with a negative influenza A(H7N9) laboratory result

Contact classification:

Close contact definitions:

From date of illness onset in index case and throughout their symptomatic period

Health and social care workers: worker who provided direct clinical or personal care or examination of a symptomatic confirmed case of influenza A(H7N9) or within close vicinity of an aerosol generating procedure AND who were not wearing full personal protective equipment (PPE) at the time. Full PPE is defined as correctly fitted high filtration mask (FFP3), gown, gloves and eye protection.

Household or close contact: any person who had prolonged face-to-face contact (>15 minutes) with a symptomatic confirmed case of influenza A(H7N9) in a household or other closed setting.

Other classifications:

A. Primary case: A primary case is an individual who tests positive for influenza A(H7N9) by specific-RT-PCR and has the earliest onset date in a particular setting e.g. hospital, household, school etc. Those cases with onset dates less than 24 hours of the onset date of the index case are considered to be “co-primary” cases.

B. Secondary case: After excluding the primary / co-primary cases, a secondary case is the contact whose onset date is 24 hours or more after the latest onset date of the primary and/or co-primary case-contact.

C. Sporadic case: A sporadic case is a case with no recent travel (in the 10 days before disease onset) from a known affected area and no recent (in 10 days before disease onset) close contact with a confirmed or probable case.

D: Imported case: An imported case is a case with a history of travel from an affected area (as defined below) in the 10 days before disease onset.

E. Affected area: An affected area is a country/region in which transmission of laboratory-confirmed human infection with influenza A(H7N9) is known to have occurred or where influenza A(H7N9) was detected in domestic birds or poultry as determined by WHO.

2.3 Data Collection

Information on the primary case and their close contacts should be sought through combination of face-to-face or telephone interview of the case (or family members if the case is too ill to be interviewed), household members, interview of health care providers and/or review of medical records where required.

Further guidance on the completion of FF100 forms can be found in Appendix A, including additional sources of data to be used for verification. Questionnaires can be found in Section 3 of this document.

2.3.1 Data Collection for possible and probable cases

The investigation of possible cases is detailed in the Case Management Algorithm. If the clinical severity warrants hospitalisation then the following steps should be rapidly taken:

1. Ensure isolation of the case;
2. Notify PHE Centre Teams;
3. Initiate laboratory testing – liaise with the relevant local Public Health laboratory using PHE SOP-V7009 (formerly known as NSM 25) or the nearest PHE regional laboratory. No virus culture on samples from cases under investigation should be initiated;
4. Start Oseltamivir treatment.

Where hospitalisation is not warranted, treat and investigate as indicated – please refer to the PHE algorithm. Please also refer to the algorithm and other related documents for infection control advice and further instructions about collection of samples.

The relevant Health Protection team of the local PHE Centre will collect core information on notified **possible cases** using the **Minimum Data Set Form 1** (Section 3). This should then be emailed to PHE Centre for Infectious Disease Surveillance and Control (CIDSC) at respiratory.lead@phe.gov.uk. Emails and attachments sent from a non-PHE email account should be encrypted as the forms contact personal identifiable information. The case should be entered on HPZone (Infection: influenza A untypable and specific context: China).

Contact line list (Section 3) should be collated and emailed to PHE CIDSC when a **probable** case is detected. Active follow up should occur including the updating of this line list on a daily basis with updated sent to PHE CIDSC (respiratory.lead@phe.gov.uk).

2.3.2 Data collection for laboratory confirmed cases

For instructions regarding the management and sampling of cases please refer to case algorithm and liaise with the relevant local Public Health laboratory using PHE SOP-V7009 (formerly known as NSM 25) or the nearer PHE regional laboratory.

FF100 case-contact investigations by the relevant Health Protection team of the local PHEC would begin following diagnosis of a confirmed case on request from PHE CIDSC.

A **Case Reporting Form (Form 1a)** should be completed as soon as possible after laboratory confirmation of a case and should be emailed to PHE CIDSC at respiratory.lead@phe.gov.uk. The **Case Follow-up Form (Form 1b)** should then be completed 14-21 days after completion of Form1a. If all the required information is not known at time of completing the forms then updated versions should be sent once available.

2.3.3 Data collection for close contacts of confirmed cases

Once a case is laboratory confirmed as influenza A(H7N9), the key activities for the initial investigation of close contacts by the relevant Health Protection team of the local PHEC are:

- Verification of close contacts of the index case patient and completion of contact line-listing (Section 3). This list of contacts fitting the close contact definition should be completed and emailed to PHE CIDSC (respiratory.lead@phe.gov.uk). Efforts should be made to identify every close contact at the initial recruitment including infants and children to generate the sampling frame for follow up. This line list should be reviewed and updated on a daily basis for 10 days after last exposure and sent to PHE CIDSC daily.

- Manage contacts as per the Close Contact algorithm; including determing if each contact is ill, including dates of onset. Any contact with clinical symptoms (fever and cough) within 10 days of last exposure with the case should be treated as a symptomatic contact.

- Contacts found to be infected with influenza A(H7N9) would be re-classified as confirmed cases and case follow-up forms would be completed (**Form 1a and 1b**) and the Case Management algorithm should be followed. Their close contacts would also then need to be identified and followed up.

- Collection of baseline information from close contacts **(Initial Contact Report Form 2a** (Section 3)**)** of a confirmed case including information about exposures to the confirmed case, illness and treatment (if applicable), and medical history.

- Ask each contact to report any respiratory illness to the relevant Health Protection team of the local PHE Centre. Please refer to algorithm about how to deal with symptomatic contacts.

- Supply each contact with a daily symptom diary (Appendix 2) that they can complete each day for the 10 days until last exposure. Contacts are asked to return this to the local Health Protection team of the local PHE Centre.

- **The Contact Follow Up Form 2b** (Section 3) should be completed 10 days since last exposure with a confirmed case.

- Contacts found to be infected with influenza A(H7N9) would be re-classified as confirmed cases and follow-up would occur as described in the case investigation algorithm.

2.4 Role of laboratory testing

2.4.1 Laboratory testing for possible cases

Testing to ascertain whether a sample is influenza A positive and unsubtypable are currently available in PHE Regional laboratories. Where flu A positive, unsubtypable result is obtained, the PHE testing laboratory/DA equivalent will send residual material urgently t the reference laboratory (RVU, Colindale) for confirmatory A(H7N9) testing. Please contact PHE Reference Laboratory, Colindale at an early stage to confirm transport requirements. Results will be reported by telephone and hard copy to the requesting clinician to the local PHE Centre staff.

2.4.2 Laboratory testing for confirmed cases

Baseline samples should be collected on confirmed cases as soon after confirmation as possible. Samples include upper and lower respiratory tract samples, oral fluid, urine, faeces and clotted blood[7] at a frequency advised by PHE CIDSC. Follow up samples from cases should be taken in discussion with PHE CIDSC. While the case is symptomatic, ensure that full PPE is worn by healthcare workers while samples. For details regarding the transport of these samples and infection control advice please refer to the case algorithm and PHE lab guidance.

Serum samples (and/or other self collected samples should tests be available) should be taken on all H7N9 confirmed cases. Acute sera sample should be taken as soon as possible and ideally no later than 7 days after symptom onset. A follow up blood sample should be taken at least 14 days after the baseline sample, or 28 days after illness onset if a sample couldn't be taken when case was symptomatic.

2.4.3 Laboratory testing for close contacts

Paired serological samples from all close contacts are needed to determine the secondary-infection attack rate and the proportion of infections that are asymptomatic. Acute and follow-up serology samples will be taken on close contacts regardless of

[7] Clotted blood samples should be taken for serology and handled and separated correctly by the laboratory. An acute (within 7 days of last exposure) and convalescent sample is needed from all contacts (28 days since date of last exposure with confirmed case) to establish sero-conversion rates and from cases to aid development of serological testing.

symptoms. The baseline clotted blood sample should be taken as soon as possible and ideally no later than 7 days after last exposure. A follow up blood sample should be taken at least 21 days after the baseline sample, or 28 days after last exposure if an acute sample was not taken. For more information please refer to the algorithms. All serum samples are expected to be sent directly and promptly to RVU, Colindale.

An acute serum sample should be taken from all close contacts within 7 days of last exposure[6]. It is critical that the sample is taken in the correct tube; labelled correctly; request form completed and sample transported directly to the RVU laboratory within 24 hours.

The final follow-up of all contacts should involve collection of convalescent sera at least 21 days since date first sample was collected or at least 28 days since date of last exposure[6]. Please refer to Close Contact Algorithm and laboratory guidance on correct collection, labelling of the sample and transport to RVU.

2.5 Analyses and interpretation of data

A descriptive analysis of the FF100 should provide preliminary insight into the clinical spectrum and course of disease due to influenza A(H7N9) infection from individual cases; the population groups most affected initially, by age, and underlying risk factors for example. It may also be possible to assess the effect of antiviral treatment on severity measures such as duration of illness.

2.6 Ethics

Ethical approval is not deemed necessary by the National Research Ethics Committee as it is deemed surveillance of a potential epidemic.

3.0 Questionnaires

Unique Case Number (assigned by CIDSC)	

1. Current Status

Please mark: Alive ☐ Dead ☐

2. Reporter Details

Reporter/ Investigating officer		**Date Reported**	/ /
Organisation		**Phone and extension**	
Mobile		**Email**	
Date of interview with informant	/ /	**Public Health England Centre**	

3. Patient Details

Forename		**Surname**	
Sex	Male / Female / Not Known	**Date of Birth**	/ /
Local ID Number (HPZone number)		**Post Code**	
NHS Number			

4. Presenting Illness

Date of first symptom onset	/ / Unknown	**History of Fever ≥ 38ºC**	No / Yes / Unknown

Clinical or CxR findings of consolidation	No / Yes / Unknown
Acute Respiratory Distress Syndrome (ARDS)	No / Yes / Unknown
Other severe / life threatening illness suggestive of an infective process	No / Yes / Unknown

Respiratory viral screen:	No / Yes / Unknown	**Date of sample**	/ /

If yes, results of respiratory viral screen:

Influenza A	Positive / Negative	**Influenza B**	Positive / Negative	**Other (please specify)**	
If influenza A positive	H1 / H3 / H5 / H7 / untypable				

5. Clinical Course/Complications

Hospitalisation	No / Yes / Unknown	**Mechanical ventilation**	No / Yes / Unknown	**ECMO[8]**	
Name of hospital					

6. Exposures in the 10 days before onset of first symptoms

History of overseas travel in the 10 days before onset of symptoms	No / Yes / Unknown	**If yes, travel to China**	No / Yes / Unknown	**Date left China**	/ /
Date of arrival in UK	No / Yes / Unknown				

Contact with confirmed case in past 10 days before onset of symptoms?	No / Yes / Unknown
Health care worker caring for patients with severe acute respiratory infections?	No / Yes / Unknown

Contact with live poultry in UK or overseas?	No / UK / Overseas / Unknown If overseas, please specify	**Date of 1st contact**		**Date of last contact**	
Visit to live bird market in UK or overseas?	No / UK / Overseas / Unknown If overseas, please specify	**Date of 1st contact**		**Date of last contact**	

[8] Extracorporeal membrane oxygenation (ECMO)

Contact Line List

A template Contact Line List in Excel can be provided from CIDSC to facilitate completion of this line list.

caseID (if no ID assigned by PHE CIDSC, name and DOB of index case)	ContactID (C…)*	firstNames	Surname	Sex (M/F)	DOB (dd/mm/yyyy)	Telephone number	typeContact (HCW/relative or friend/other)	placeContact (hospital name/household/other setting)	respiratorySymptoms – fever or history of fever (Y/N)	Clincal or CxR findings of consolidation or ARDS (Y/N)	Visit to China within 10 days of symptom onset (Y/N)	Close contact with confirmed case within 10 days of symptom onset (Y/N)	symptomsOnset (dd/mm/yyyy)	dateFirstContact (dd/mm/yyyy)	dateLastContact (dd/mm/yyyy)	form2a completed - initial questionnaire (Y/N)	form2b completed - follow-upQuestionnaire (Y/N)	Acute serum collected (Y/N)	follow-upSerumCollected – day 28 (Y/N)	baselineSwabsTaken (Y/N)	Comments (any relevant remarks)

***Please number the contacts sequentially e.g. C001, C002, C003 etc.**

Information in Sections 1-13 may already have been completed in the Minimum Data Set Form. It is not necessary to repeat any data in these sections that has already been completed. Please add any missing data and then go to Section 14.

Unique Case Number	

1. Current Status

Please mark: Alive ☐ Dead ☐

2. Further Case Classification

Please mark: Imported ☐ Secondary ☐ Sporadic ☐

3. Reporter Details

Reporter/ Investigating officer		**Date Reported**	/ /
		Position	
Organisation		**Phone and extension**	
Mobile		**Email**	
Fax		**Date of interview with informant**	/ /

4. Informant Details (details of person providing the information)

Informant	Case / other	**If other:**	**Relationship with case**
			Contact details including telephone number

5. Patient Details

NHS number			
Forename		**Surname**	
Sex	Male / Female / Not Known	**Date of Birth**	/ /
Local ID number (HPZone number)		**Age**	

Street Address		**Home Telephone**	
Town		**Work Telephone**	
County		**Mobile**	
Post Code		**Email address**	
Country of Residence		**Preferred mode of contact**	
Nationality		**Responsible PHE Centre**	
Country of birth		**Ethnicity**	
Clinical Commissioning Group (CCG)		**Nursery/School/College if appropriate**	
Is the case part of an institutional outbreak?	Yes/No/Unknown		
If yes, please specify:			
Occupation	HCW: Y/N Other (please specify):		
If HCW: Job title		**If HCW: Place of work**	

6. GP Details

Name of GP		**Practice Name**	
Telephone		**Fax**	
Post Code			

7. Presenting Illness

Date of first symptom onset	/ / Unknown	**Maximum Temperature**			

Respiratory symptoms:

History of Fever (≥38ºC)	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown
If Yes, date	/ / Unknown	**If Yes, date**	/ / Unknown	**If Yes, date**	/ / Unknown
Cough	No / Yes / Unknown	**If Yes, date**	/ / Unknown		

Other symptoms:

Muscle ache	No / Yes / Unknown	**Joint ache**	No / Yes / Unknown		
Diarrhoea	No / Yes / Unknown	**Nausea**	No / Yes / Unknown	**Vomiting**	No / Yes / Unknown
Fatigue	No / Yes / Unknown	**Loss of appetite**	No / Yes / Unknown	**Headache**	No / Yes / Unknown
Seizures	No / Yes / Unknown	**Altered Consciousness**	No / Yes / Unknown	**Nose bleed**	No / Yes / Unknown
Rash	No / Yes / Unknown	**Other**	No / Yes, please specify		

8. Clinical Course/Complications

Mechanical ventilation	No / Yes / Unknown	**ICU Admission**	No / Yes / Unknown	**ARDS**[9]	No / Yes / Unknown
Date of mechanical ventilation	/ / Unknown	**Date of ICU Admission**	/ / Unknown	**Date of ARDS**	/ / Unknown
Length of ventilation (days)		**Date of discharge from ICU**	/ / Unknown		

[9] Acute Respiratory Distress Syndrome (ARDS)

Cardiac arrest	No / Yes / Unknown	**Hypotension requiring vasopressors**	No / Yes / Unknown	**Chest Xray with pneumonia**	No / Yes / Unknown	**ECMO[10]**	No / Yes / Unknown
Renal failure	No / Yes / Unknown	**Other**				**Date ECMO started:**	/ / Unknown
						Length of ECMO (days)	

9. Exposures in the 10 days before onset of first symptoms

(Symptom onset date minus 10 days) to (symptom onset date)

In the 10 days before illness onset did the case travel WITHIN the UK?	Yes / No / Unknown

Date from	Date to	Location (town)
/ /	/ /	
/ /	/ /	
/ /	/ /	
/ /	/ /	
/ /	/ /	

In the 10 days before illness onset did the case spend time OUTSIDE the UK?	Yes / No / Unknown

Departure Date	Return Date	City, Country	WHO defined affected area[11]
/ /	/ /		No / Yes / Unknown
/ /	/ /		No / Yes / Unknown
/ /	/ /		No / Yes / Unknown
/ /	/ /		No / Yes / Unknown
/ /	/ /		No / Yes / Unknown

Date arrived in UK (include details for multiple trips within last 10 days if applicable)	/ /
Airport of arrival & flight number (include details for multiple trips within last 10 days if applicable)	

[10] Extracorporeal membrane oxygenation (ECMO)

[11] An affected area is a country/region having had recent indigenously acquired confirmed influenza A(H7N9) infection.

Port or train station of arrival if mode of transport different to plane (include details for multiple trips within last 10 days if applicable)	

During the 10 days prior to the onset of symptoms, has the person been working….

In an at-risk animal-related occupation (e.g. farmer, vet, veterinary assistant etc?	No / Yes / Unknown
As a worker in laboratory where samples are tested for influenza A/H7 viruses?	No / Yes / Unknown
As a healthcare worker?	No / Yes / Unknown

During the 10 days prior to the onset of symptoms, has the person….

Had contact with live or dead domestic fowl, wild birds or swine?	No / Yes / Unknown	If yes, details:	
Entered settings where animal species were confined or had been confined in the previous six weeks?	No / Yes / Unknown	If yes, details:	

During the 10 days prior to the onset of symptoms, did the person have close contact (within touching or speaking distance) with:

a) A probable or confirmed human case of influenza A/H7 infection while the case was symptomatic	No / Yes / Unknown
If yes, **Forename:** **Surname:** **Age:** **Date of contact with case:** **Setting of contact:**	Household / school / plane / healthcare setting / other
b) A person with an unexplained acute respiratory illness that later resulted in death	No / Yes / Unknown
c) If YES to 8a, the person is part of a cluster, tick "Applicable"	Applicable / Not Applicable
d) If Applicable, is the cluster	Already Known / Newly identified
e) If already known, indicate cluster identifier:	_____ **What is the setting of this cluster?** Household ☐ Extended family ☐ Hospital ☐ Other residential institution ☐ Military establishment ☐ Recreational camps ☐ Other, specify_____

10. Activities in the 10 days after onset of first symptoms

Please record daily location and activities since onset of first symptoms. Please include flights and flight details.

Day (Date)	Location	Setting (drop down list of options including: Household, hospital, workplace, flight, school, other (please state)
Day 0 (symptom onset (pre-populate date)		
Day 1 (dd/mm/yy)		
Day 2 (dd/mm/yy)		
Day 3 (dd/mm/yy)		
Day 4 (dd/mm/yy)		
Day 5 (dd/mm/yy)		
Day 6 (dd/mm/yy)		
Day 7 (dd/mm/yy)		
Day 8 (dd/mm/yy)		
Day 9 (dd/mm/yy)		
Day 10 (dd/mm/yy)		

11. Medical History

Does the case have any underlying medical conditions? Complete where appropriate.

Condition	No / Yes / Unknown	Details	
Chronic heart disease	No / Yes / Unknown		
Diabetes	No / Yes / Unknown		
HIV/other immunodeficiency	No / Yes / Unknown		
Chronic kidney disease	No / Yes / Unknown		
Chronic liver disease	No / Yes / Unknown		
Chronic respiratory disease, excluding asthma requiring medication	No / Yes / Unknown		
Asthma requiring medication	No / Yes / Unknown		
Malignancy	No / Yes / Unknown		
Organ or bone marrow recipient	No / Yes / Unknown		
Chronic neurological disease	No / Yes / Unknown		
Approximate height (cm): Approximate weight (kg):			
Pregnant	No / Yes / Unknown	If yes, trimester: Estimated delivery date:	first /second third / /
Other:			

Case vaccinated with pneumococcal vaccine	No / Yes / Unknown	**Date** / /
Case vaccinated against influenza in the 12 months prior to the onset of symptoms	No / Yes / Unknown	**Date** / /
If yes, in which country		

12. Treatment

Did the case receive any of the following in the last 14 days?

Oseltamivir	No / Yes / Unknown	**Date started:**	/ / Unknown	**Number of days:**		**Dosage:**	
Zanimivir	No / Yes / Unknown	**Date started:**	/ / Unknown	**Number of days:**		**Dosage:**	
Other antivirals	No / Yes / Unknown	**Date started:**	/ / Unknown	**Number of days:**		**Dosage:**	
If yes, please state:							

Were antivirals prescribed for ☐ **Treatment** ☐ **Prophylaxis**

13. Healthcare Interactions

Has the case had interaction with any of the following healthcare settings during current illness?

Contact with NHS 111	No / Yes / Unknown	**Date of NHS 111 contact:**	/ /
Visit to primary care (GP, walk in centre, OoH GP)	No / Yes / Unknown	**Date of first GP contact:**	/ /
		Date of second GP contact:	/ /
		Date of third GP contact:	/ /
Visited A&E	No / Yes / Unknown	**Date of first A&E contact:**	/ /
		Date of second A&E contact:	
		Date of third A&E contact:	
Admitted to hospital	No / Yes / Unknown	**Date of first hospitalisation:**	/ /
Name of first hospital		**Postcode of first hospital**	
Second admission to hospital	No / Yes / Unknown	**Date of second hospitalisation:**	/ /
Name of second hospital		**Postcode of second hospital**	
Third admission to hospital	No / Yes / Unknown	**Date of third hospitalisation:**	/ /
Name of third hospital		**Postcode of third hospital**	

14. Test Results

Laboratory Tests and Results

Origin (where taken)	Place of Test (Testing laboratory)	MOLIS Code	External Reference	Date Sample Taken	Date Sample Received	Type of Sample	Result	Result Date
								/ /
								/ /
								/ /
								/ /

15. Serology

Has baseline serology been taken on case?	Y/N/Not sure
If yes, date serology taken?	/ /
Laboratory Name	
Date serology sent to PHE Colindale	/ /

CASE FOLLOW-UP FORM 1b – FINAL OUTCOME - Day 14-21

(after completion of Form 1a)

Unique Case Number	

1. Reporter Details

Reporter / Investigating officer		**Date Reported**	/ /
		Position	
Organisation		**Phone and extension**	
Mobile		**Email**	
Fax		**Date of interview with informant**	/ /

2. Informant Details (if different from initial interview)

Informant	Case / other	**If other:**	**relationship with case**
			contact details including telephone number

3. Outcome/Status at 21 days post symptom onset (if other specify)

Status (please mark one of the following):

Recovered		**Still ill**		**Dead**	
If yes, date symptoms resolved (able to resume normal activities)	/ /			**If yes, date of death**	/ /

Was the case ever hospitalised?	Yes/No/Don't know
If yes, is the patient still hospitalised?	Yes/No/Don't know
Date of admission to hospital and date of discharge if appropriate:	/ / / /

CASE FOLLOW-UP FORM 1b – FINAL OUTCOME - Day 14-21

(after completion of Form 1a)

If Dead (NB. If this information is not currently available, please leave blank and send through an update as soon as results are known):

Contribution of influenza A(H7N9) to death:	
Was a post mortem performed:	Yes/No/Don't know
Cause of death as MCCD (Medical Certificate of the cause of death):	
Result of coroner's report where applicable:	

Underlying/primary	
Contributing/secondary	
No contribution to death	
Unknown	

4. Symptoms

Symptoms ever during the course of the illness:

Maximum Temperature	

Respiratory symptoms:

History of Fever	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown
If Yes, date	/ / Unknown	**If Yes, date**	/ / Unknown	**If Yes, date**	/ / Unknown
Cough	No / Yes / Unknown	**If yes, date**	/ / Unknown		

Other symptoms

Muscle ache	No / Yes / Unknown	**Joint ache**	No / Yes / Unknown		
Diarrhoea	No / Yes / Unknown	**Nausea**	No / Yes / Unknown	**Vomiting**	No / Yes / Unknown
Fatigue	No / Yes / Unknown	**Loss of appetite**	No / Yes / Unknown	**Headache**	No / Yes / Unknown
Seizures	No / Yes / Unknown	**Altered Consciousness**	No / Yes / Unknown	**Nose bleed**	No / Yes / Unknown
Rash	No / Yes / Unknown	**Other**	No / Yes, please specify		

5. Clinical Course/Complications

Mechanical ventilation	No / Yes / Unknown	**ICU Admission**	No / Yes / Unknown	**ARDS**[12]	No / Yes / Unknown
Start date of mechanical ventilation	/ / Unknown	**Date of ICU Admission**	/ / Unknown	**Date of onset of ARDS**	/ / Unknown
Length of ventilation (days)		**Date of discharge from ICU**	/ / Unknown		

[12] Acute Respiratory Distress Syndrome (ARDS)

Cardiac arrest	No / Yes / Unknown	**Hypotension requiring inotropic support**	No / Yes / Unknown	**Chest Xray with pneumonia**	No / Yes / Unknown	**ECMO[13]**	No / Yes / Unknown
Date of cardiac arrest	/ / Unknown	**Date of use of vasopressors**	/ / Unknown	**Date of chest xray with pneumonia**	/ / Unknown	Date ECMO started:	/ / Unknown
Renal failure	/ / Unknown	**Other**				Length of ECMO (days)	
Pregnancy	Y/N/ Not applicable	**Pregnancy outcome**					

6. Secondary Bacterial Infections

Date of sample	**Site** **Sputum / Endotracheal aspirate / Pleural fluid / CSF / Blood / Urine / Other**	**Positive Results** Haemophilus influenza / MRSA / Staphylococcus aureus / Streptococcus pneumoniae / E. coli / Other organism (please specify)
/ /		
/ /		
/ /		
/ /		
/ /		
/ /		

7. Treatment with Antivirals

Patient received antivirals for treatment, please mark as appropriate

Oseltamivir	No / Yes / Unknown	**Date started:**	/ / Unknown	**Number of days:**		**Dosage:**	
Zanimivir	No / Yes / Unknown	**Date started:**	/ / Unknown	**Number of days:**		**Dosage:**	
Other	No / Yes / Unknown	**Date started:**	/ / Unknown	**Number of days:**		**Dosage:**	
If yes, please state:							

[13] Extracorporeal membrane oxygenation (ECMO)

8. Reference Test Results

Additional Laboratory Tests and Results

Origin (where taken)	Place of Test (Testing laboratory)	MOLIS Code	External Reference	Date Sample Taken	Date Sample Received	Type of Sample	Result	Result Date
								/ /
								/ /
								/ /
								/ /

9. Serology

Has convalescent serology been taken on case?	Y/N/Not sure
If yes, date serology taken?	/ /
Laboratory Name	
Date serology sent to PHE Colindale	/ /

INITIAL CONTACT REPORT – 2a

Confirmed Case number	NA…..	Contact ID No.[14]	C…….	Name of confirmed case	

1. Reporter Details

Reporter		Date Reported	/ /
Organisation		Position	
Mobile		Phone and extension	
Fax		Email	
Date of interview with contact			

2. Informant Details (Details of the person providing the information)

Informant	Contact / other	If other:	relationship with contact	
			contact details including telephone number	

3. Contact Details (Details of the contact)

Forename		Surname	
Sex	Male / Female / Not Known	Date of Birth	/ /
Street Address		Home Telephone	
Town		Work Telephone	
County		Mobile	
Post Code		Email address	
Country of Residence		Preferred mode of contact	
Nationality		NHS No	

[14] Contact ID numbers should have been issued at time of completion of the Minimum Data Set Form or Form 1a.

Occupation	HCW: Y/N Other (Please specify):	**If not HCW please complete Section 4, otherwise skip to Section 5**

4. Exposure Information

Type of contact:	Family member: Y/N Friend: Y/N Classmate: Y/N Carer: Y/N Other (Please specify):

State dates of contact with the confirmed case from first contact while case was symptomatic until last unprotected contact

Date	**Dd/mm/yyyy**						
Duration (mins)							
Setting	**Household / hospital / school / plane / other**						

Date								
Duration								
Setting								

Last unprotected contact with confirmed case without full protection* (if still in contact please put today's date):

***Full protection is defined as full personal protective equipment (PPE): correctly fitted high filtration respirator (FFP3), gown, gloves and eye protection**

Last date / /

5. Exposure Information for Healthcare Workers

Job title	
Place of work	
Direct physical contact with the confirmed case (e.g. Hands-on clinical contact)	Y / N

What type of protective equipment was used by the HCW during contact with confirmed case and how often?

Surgical mask:	Y / N / Don't know	If yes, how often?	□ Always (100% of time) □ Often (≥50% of time) □ Infrequent (<50% of time) □ Never
Fit tested and fit checked High filtration respiratory (FFP3):	Y / N / Don't know	If yes, how often?	□ Always (100% of time) □ Often (≥50% of time) □ Infrequent (<50% of time) □ Never
Eye protection:	Y / N / Don't know	If yes, how often?	□ Always (100% of time) □ Often (≥50% of time) □ Infrequent (<50% of time) □ Never
Gloves:	Y / N / Don't know	If yes, how often?	□ Always (100% of time) □ Often (≥50% of time) □ Infrequent (<50% of time) □ Never
Gown:	Y / N / Don't know	If yes, how often?	□ Always (100% of time) □ Often (≥50% of time) □ Infrequent (<50% of time) □ Never

Was the contact present while any aerosol prone procedures took place?	□ Yes □ No
If yes, what procedure were they present at? List and date if more than one.	1)…….Date: / / 2)…….Date: / / 3)……....Date: / /
Was the contact wearing any type of mask at this/these procedure(s)?	1) □ Surgical □ FFP3 □ None 2) □ Surgical □ FFP3 □ None 3) □ Surgical □ FFP3 □ None

6. Symptoms in contact

Has the contact experienced any respiratory symptoms in the period from 10 days before onset in the confirmed case until the present?	No / Yes
Has the contact experienced any respiratory symptoms in the period up to 10 days after last contacts or until the present date, whichever is the earliest?	No / Yes
Currently ill	No / Yes

If contact has not been ill please go to Section 6

Date of first symptom onset	/ / Unknown	**Time of onset**	AM / PM Unknown	**Maximum Temperature**	

Symptoms:

Respiratory symptoms:

History of Fever (≥38ºC)	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown
If Yes, date	/ / Unknown	**If Yes, date**	/ / Unknown	**If Yes, date**	/ / Unknown
Cough	No / Yes / Unknown	**If Yes, date**	/ Unknown		

Other symptoms:

Muscle ache	No / Yes / Unknown	**Joint ache**	No / Yes / Unknown		
Diarrhoea	No / Yes / Unknown	**Nausea**	No / Yes / Unknown	**Vomiting**	No / Yes / Unknown
Fatigue	No / Yes / Unknown	**Loss of appetite**	No / Yes / Unknown	**Headache**	No / Yes / Unknown
Seizures	No / Yes / Unknown	**Altered Consciousness**	No / Yes / Unknown	**Nose bleed**	No / Yes / Unknown
Rash	No / Yes / Unknown	**Other**	No / Yes, please specify		

7. Outcome/Status of Contact

Please complete only if contact has been ill or is currently ill.

Status (please mark one of the following):

Recovered		**Still ill**		**Dead**	
If yes, date symptoms resolved(able to resume normal activities)	/ /			**If yes, date of death**	/ /

Hospitalised	Yes/No/Don't know
If yes, date of admission to hospital and date of discharge	/ / / /
If yes, still hospitalised	Yes/No/Don't know

If Dead:

(NB. If this information is not currently available, please leave blank and send through an update as soon as results are known):

Contribution of influenza A(H7N9) to death:	**Underlying/primary**
	Contributing/secondary
	No contribution to death
	Unknown
Was a post mortem performed:	Yes/No/Don't know
Cause of death as MCCD (Medical Certificate of the cause of death):	
Result of coroner's report where applicable:	

8. Medical History

Does the contact have any underlying medical conditions? Complete where appropriate.

Condition	Y/N/Unknown	Comment	
Chronic heart disease	No / Yes / Unknown		
Diabetes	No / Yes / Unknown		
HIV/other immunodeficiency	No / Yes / Unknown		
Chronic kidney disease	No / Yes / Unknown		
Chronic liver disease	No / Yes / Unknown		
Chronic respiratory disease, excluding asthma requiring medication	No / Yes / Unknown		
Malignancy	No / Yes / Unknown		
Organ or bone marrow recipient	No / Yes / Unknown		
Seizure disorder	No / Yes / Unknown		
Chronic neurological disease	No / Yes / Unknown		
Approximate height in cm: Approximate weight in cm:			
Pregnant	No / Yes / Unknown	If yes, trimester: Estimated delivery date:	first / second / third / /
Other:			
Contact vaccinated with pneumococcal vaccine	No / Yes / Unknown	**Date of vaccination** / /	

9. Laboratory Tests and Results

Origin (where taken)	Place of Test (testing laboratory)	MOLIS Code	External Reference	Date Sample Taken	Date Sample Received	Type of Sample	Result	Result Date
								/ /
								/ /
								/ /
								/ /

10. Serology

Has baseline serology been taken on case?	Y/N/Not sure
If yes, date serology taken?	/ /
Laboratory Name	
Date sent to PHE Colindale	

CONTACT FOLLOW UP FORM 2b – DAY 10

Confirmed Case number	NA….	Contact ID No.[15]	C……	Name of confirmed case	

1. Reporter Details

Reporter / Investigating officer		**Date Reported**	/ /
Organisation		**Position**	
Mobile		**Phone and extension**	
Fax		**Email**	
Date of interview with contact	/ /		

2. Informant Details (details of the person providing the information)

Informant	Case / other	**If other:**	**relationship with case**	
			contact details including telephone number	

3. Exposure Information

Type of contact:	Health Care Worker: Y/N Family member: Y/N Friend: Y/N Classmate: Y/N Carer: Y/N Other (Please specify):

State dates of contact with the confirmed case from first contact while index case was symptomatic until last unprotected contact

Date							
Duration							
Setting	**Household / hospital / school / plane / other**						

[15] Contact ID numbers should have been issued at time of completion of the Minimum Data Set Form or Form 1a.

Date								
Duration								
Setting								

Last unprotected contact with confirmed case without full protection* (if still in contact please put today's date):

***Full protection is defined as full personal protective equipment (PPE): correctly fitted high filtration respirator (FFP3), gown, gloves and eye protection**

Last date / /

4. Symptoms in contacts

Did the contact ever become ill during the 10 days after contact with the confirmed case (see symptoms) No / Yes

Currently ill No / Yes

If contact has not been ill END.

Did the contact have any additional symptoms not previously mentioned in form 2a and up to 10 days since last contact with confirmed case?

If yes,

Date of first symptom onset / / Unknown

Maximum Temperature

Respiratory symptoms

History of Fever	No / Yes / Unknown	**Runny nose**	No / Yes / Unknown	**Sneezing**	No / Yes / Unknown
If Yes, date	/ / Unknown	**If Yes, date**	/ / Unknown	**If Yes, date**	/ / Unknown
Cough	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown
If Yes, date	/ / Unknown	**If Yes, date**	/ / Unknown	**If Yes, date**	/ / Unknown
If Yes, dry or productive	Dry/Productive				

Other symptoms:

Muscle ache	No / Yes / Unknown	**Joint ache**	No / Yes / Unknown		
Diarrhoea	No / Yes / Unknown	**Nausea**	No / Yes / Unknown	**Vomiting**	No / Yes / Unknown
Fatigue	No / Yes / Unknown	**Loss of appetite**	No / Yes / Unknown	**Headache**	No / Yes / Unknown

Seizures	No / Yes / Unknown	**Altered Consciousness**	No / Yes / Unknown	**Nose bleed**	No / Yes / Unknown
Rash	No / Yes / Unknown	**Other**	No / Yes, please specify		

5. Serology

Has convalescent serology been taken on contact?

Has convalescent serology been taken on case?	Y/N/Not sure
If yes, date serology taken?	/ /
Laboratory Name	
Date serology sent to PHE Colindale	/ /

6. Final contact classification

Please mark –

Confirmed		**Probable**		**Possible**		**Discarded**		**Lost to follow-up**		**NA**	

Appendix A: FF100 Form Completion Guidance

These notes are to provide guidance to those completing the forms. It is suggested that these investigations could be divided into teams – these could include a 'case reporter' team, a 'contact reporter' team and 'go to' team who would liaise with additional data sources other than the case or contact such as hospitals, laboratories etc.

(a) FF100 Initial Case Report Form 1a – This form should be completed predominately by the 'Case' reporter team. This form should be completed as soon as the PHE Centre is notified by the Emergency Operations team at CIDSC, PHE.

Section	Sources	Verified against
Case Classification	Case Reporter / EOC Colindale	
Reporter Details	Case Reporter	
Informant Details	Informant	
Patient Details	Informant	
GP Details	Informant	PDS matching (by EOC?)
Presenting illness	Informant	Healthcare provider / review of medical records
Exposures in the 10 days before onset	Informant	
Medical history	Informant	Healthcare provider / GP / review of medical records
Treatment & prophylaxis with antivirals	Informant / interview with healthcare provider	Review of medical records
Hospitalisation	Informant / Hospital	HES
Test results	Testing laboratory	Datamart
Contact Details	Informant	

(b) FF100 Case Follow-Up Form 1b – This form should be completed by the 'Case' reporter team and should be completed 21 days after symptom onset of the case.

Section	Sources	Verified against
Final case classification	Contact Reporter / EOC Colindale	
Reporter details	Contact Reporter	
Informant details	Informant	
Outcome/Status at 21 days post symptom onset	Informant	ONS mortality, PDS, GP/Hospital
Illness	Informant	Healthcare provider / review of medical records
Clinical Course/Complications	Informant / interview with healthcare provider	Review of medical records
Treatment with antivirals	Informant / interview with healthcare provider	Review of medical records
Treatment with antibiotics	Informant / interview with	Review of medical

	healthcare provider	records
Interaction with NHS	Informant / Hospital	HES
Reference Test Results	Testing laboratory	Datamart
Bacterial Infections	Testing laboratory	Lab-base/MOLIS

(c) FF100 Initial Contact Report Form 2a – This form should be completed by the 'Contacts' reporter team and should be completed after the Initial Case Report from has been completed by the 'Case' Reporter team, ideally within 24 hours.

Section	Sources	Verified against
Reporter Details	Contact reporter	
Informant Details	Informant	
Contact Details	Informant	
Exposure Information	Informant	
Illness in contacts	Informant	Healthcare provider / review of medical records
Treatment & prophylaxis with antivirals	Informant, interview with healthcare provider	Review of medical records
Outcome/Status	Informant	ONS mortality, PDS, GP / hospital
Case classification	Contact reporter	
Virological Tests	Testing laboratory	Datamart
Medical History	Informant	Healthcare provider / GP / review of medical records

(d) FF100 Contact Follow-Up Form 2b

Section	Sources	Verified against
Reporter Details	Contact reporter	
Informant Details	Informant	
Final Contact Classification	Contact reporter	
Exposure Information	Informant	
Illness in contacts	Informant	Healthcare provider / review of medical records
Clinical Course/Complications	Informant / interview with healthcare provider	Review of medical records
Treatment & prophylaxis with antivirals	Informant, interview with healthcare provider	Review of medical records
Treatment with antibiotics	Informant, interview with healthcare provider	Review of medical records
Outcome Status	Informant	ONS, PDS, GP / Hospital
Virological Tests	Testing laboratory	Datamart
Bacterial Infections	Testing laboratory	Lab-base/MOLIS

Appendix B: Contact symptom diary

Please complete the following questions in this diary each day for the next 10 days. In the event you develop any of these symptoms, please inform your local Health Protection Team.

Contact ID No. C……

Day 1 (Date: / /)

Fever (temperature >38º)	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown	**Cough**	No / Yes / Unknown

Day 2 (/ /):

Fever (temperature >38º)	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown	**Cough**	No / Yes / Unknown

Day 3 (/ /):

Fever (temperature >38º)	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown	**Cough**	No / Yes / Unknown

Day 4 (/ /):

Fever (temperature >38º)	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown	**Cough**	No / Yes / Unknown

Day 5 (/ /):

Fever (temperature >38º)	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown	**Cough**	No / Yes / Unknown

Day 6 (/ /):

Fever (temperature >38º)	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown	**Cough**	No / Yes / Unknown

Day 7 (/ /):

Fever (temperature >38º)	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown	**Cough**	No / Yes / Unknown

Day 8 (/ /):

Fever (temperature >38º)	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown	**Cough**	No / Yes / Unknown

Day 9 (/ /):

Fever (temperature >38º)	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown	**Cough**	No / Yes / Unknown

Day 10 (/ /):

Fever (temperature >38º)	No / Yes / Unknown	**Sore Throat**	No / Yes / Unknown	**Shortness of Breath**	No / Yes / Unknown	**Cough**	No / Yes / Unknown

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