

## NHS Greater Glasgow and Clyde Pandemic Influenza

### Infection Control Guidance: Care Homes

#### Document Control Summary

Approved by and date	<p><b>INTERIM GUIDANCE – THIS GUIDANCE MAY CHANGE IN LIGHT OF NEW INFORMATION</b></p> <p>The most recent version of this document can be viewed at:  <a href="http://www.nhsggc.org.uk/content/default.asp?page=s1297">http://www.nhsggc.org.uk/content/default.asp?page=s1297</a></p>
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Pandemic Flu Preparedness Plan:  
Infection Control Precautions in Care Homes  
Contents

	Page
1. Introduction	3
2. Influenza the agent	3-5
3. Aerosol generating procedures	5
4. Infectivity and Communicability	5
5. Limiting the Spread of Influenza	6-11
6. References	12

Appendices

1. Putting on and removing PPE.
2. List of Aerosol Generating Procedures

## **1. Introduction**

In April of 2009 a new strain of influenza (H1N1 or swine flu) was identified for the first time in the UK, probably by travellers from Mexico and the USA. Since then H1N1 has spread to over 100 countries throughout the world.

Primary strategies for preventing pandemic influenza (flu) are the same as those for seasonal influenza:

- Vaccination
- Early detection and treatment
- Standard Infection control measures to prevent transmission during patient care

Strict adherence to basic infection control measures will help to prevent this spread within care and residential homes.

The infection control guidance within this document is based on current knowledge of influenza. This document will be updated as new information becomes available.

## **2. Influenza – the agent**

Infections with a strain of influenza (type A or B) occur every year. Pandemic influenza occurs when a new influenza A strain subtype appears that is different to previous subtypes and can:

- Infect humans
- Spread effectively from human to human
- Causes significant clinical illness in a high proportion of those who acquire the virus

### Clinical Features of H1N1

Influenza illness can include any or all of these symptoms: fever, muscle aches, headache, dry cough, diarrhoea, sore throat, runny or stuffy nose and extreme tiredness. The fever and body aches can last 3-5 days and the cough and lack of energy may last for 2 or more weeks. Most people who have influenza will have mild symptoms and recover within 7 days; however, a small number of people may develop more serious illness, e.g. people with underlying heart and respiratory conditions.

### Routes of transmission

Infection principally takes place within the respiratory tract. Virus is shed as large aerosol droplets (more than 5µm diameter) during coughing or sneezing by an infected person. Once expelled, virus particles are transmitted via the droplet or contact route to a susceptible person. How infectious an individual is depends on how severe their symptoms are; people will be most infectious just after their symptoms have started.

### **A. Droplet transmission.**

Large droplets, generated from a person with clinical disease during coughing or sneezing may land directly on the conjunctiva, or mucous membranes of the nose and mouth of a susceptible person. Large droplets are heavy and do not remain suspended in the air for long periods of time and only travel and for distances up to 1 metre.

### **B. Direct/Indirect Contact transmission**

Direct contact transmission is when the virus is spread person to person without a contaminated intermediate object or person, e.g., symptomatic patient to a healthcare worker, e.g. a sneeze or cough directly onto the eyes, nose or mouth.

Indirect contact transmission is the transfer of an infectious agent through a contaminated intermediate object or person, e.g. from a contaminated surface, bed table, to the hands of another person who then transfers the virus to their nose, mouth or eyes. Influenza virus is known to survive well in the environment:

- Up to 48 hours on hard non-porous surfaces
- 8-12 hours on cloth, tissue and paper
- 5 minutes on the hands

Once on the hands, virus is easily transferred on to the conjunctiva or mucous membranes of the nose or mouth.

### **C. Small-particle aerosols**

Transmission may occur at short distances through inhalation of small particle aerosols which may be produced during aerosol generating procedures, e.g. during intubations. Please refer to section 3 for a list of the type of procedures that would generate these types of aerosols.

**NB** – Aerosols may remain in the atmosphere for up to one hour after generation.

## **Case Definitions H1N1**

**Confirmed case:** Any person with laboratory confirmation of influenza A(H1N1)v

**Suspected case:** Confirmation by a general practitioner or other clinician on the basis of symptoms present.

The diagnosis is based on the following:

Pyrexia of > 38C **or a history of fever, And**

Influenza like illness, i.e. two or more of the following symptoms:

Cough

Sore throat

Rhinorrhoea (runny nose)

Limb or joint pain

Headache

Diarrhoea

**or**

Severe and/or life-threatening illness suggestive of an infective process.

NB illness in the elderly may not be accompanied by a fever. Instead, an acute deterioration in physical or mental ability without other known cause or acute onset of weakness should also be considered a possible symptom.

**OUTBREAKS WITHIN CLOSED COMMUNITIES ARE POSSIBLE, THEREFORE PLEASE REPORT ANY CONFIRMED OR SUSPECTED CASES (INCLUDING CASES AMONGST STAFF) TO THE PUBLIC HEALTH PROTECTION UNIT ON 0141 201 4917 IMMEDIATELY**

### 3. Aerosol Generating Procedures

An aerosol generating procedure can produce droplets which may cause infection if inhaled. These types of procedures are not generally performed within the care homes setting with the possible exception of aerosolised nebulised medication. A list of these procedures is given in appendix 2.

Where possible, aerosol generating procedures should be avoided or alternative methods considered e.g. nebulisers replaced with inhalers. If nebulised medication is given staff should be aware that the aerosols generated may remain in the atmosphere for up to one hour after the procedure is complete. If there is no alternative to nebulised medication then it should be administered in a well ventilated, single room with the door closed. If possible the member of staff should leave the room whilst the nebulisation takes place and if possible should not enter the room until one hour after the nebulisation is complete. If this is not possible staff should wear FFP3 masks (also referred to as respirators). Please refer to section on masks.

### 4. Infectivity and Communicability

Table 1 indicates periods of communicability for Flu A.

Host	Incubation period	Period of communicability
Adults	1-4 days	1 day before until 5 days or more after onset of symptoms
Children	1-4 days	Young children can shed virus several days before onset of symptoms. Infectious for 7 or more days after onset of symptoms
Severely immunocompromised	1-4 days	May shed virus for weeks to months

The period of communicability for H1N1 is as yet unknown.

## 5. Limiting the spread of influenza

Infection control practices for pandemic flu are the same as for other human influenza viruses.

### A. Patient Isolation

- A patient with possible, probable or confirmed influenza should be nursed in a single room preferably with en-suite facilities.
- To control entry, a sign should be displayed prominently at the entrance to a single room advising of precautions that need to be taken if entering this room.
- The number of personnel should be limited to those necessary for patient care and support.
- Residents should be considered infectious until symptoms have resolved or after a period of seven days from symptoms occurring whichever is the longer. Residents with underlying medical conditions or residents who have gone on and developed a secondary complication as a result of infection should be considered infectious until they return to their previous health state. Residents who fall into this category must be assessed individually by their GP.
- **No clearance samples are required.**

### B. Transfer to Hospital

If a patient has to be transferred to hospital this MUST be discussed with the local Health Protection Team, the bed manager and if applicable the Accident and Emergency Department at the receiving hospital and the ambulance staff.

When transferring the resident all those accompanying them must wear gloves and aprons. If the resident is unable to wear a surgical mask then staff accompanying the resident must do so.

### C. Visitor Restrictions

- Visiting should be restricted to reduce the risk of influenza transmission only close relations or a partner should be allowed to visit.
- Children should not be allowed to visit residents except in exceptional circumstances
- All visitors must be free of flu-like symptoms, or have been immunised against the particular strain of influenza.
- All visitors entering residents room must speak to a member of staff and be instructed on hand hygiene practice and the wearing of protective clothing as appropriate (please refer to appendix one where further guidance is available). Visitors may require assistance with the donning of PPE..

## D. Hand hygiene

Hand hygiene remains the single most important measure to take against the spread of influenza. Effective hand washing with plain liquid soap and running water is sufficient. Antibacterial soap is not required. Hand washing should be followed by thorough drying with disposable paper towel/ tissue.

Alcohol hand rub (AHR) can be used, but on visibly clean hands only. AHR are effective, especially where hand hygiene facilities are poor or lacking. Ward and clinic managers should ensure that adequate hand hygiene facilities are available.

Hand hygiene should be performed:

- before and after direct contact with each patient
- before and after contact with an infected patient or their immediate surroundings
- after removal of protective clothing, including gloves and masks by staff, residents and visitors when entering and leaving a clinical area

## E. Personal protective equipment (PPE)

PPE is worn to protect staff from body fluids to reduce the risk of transmission of influenza between residents and staff and from one patient to another. The level of PPE used will vary based on the procedures being carried out and not all items of PPE will always be required.

### **Masks**

Surgical masks may be of benefit in the early stages of the pandemic. Surgical masks should be worn by health care workers for contact with residents suspected or known to have influenza. Surgical masks may be used in a single episode for up to five hours provided the integrity of the mask is not compromised, e.g. the mask provides a physical barrier which becomes ineffective once wet. As masks themselves may become a reservoir for the virus, **HAND HYGIENE MUST** be performed after their removal and disposal. Masks should always be the last item of PPE to be removed.

*Surgical masks should:*

- cover both the nose and mouth
- not be allowed to dangle around the neck
- not be touched during use
- be changed when they become moist
- be worn once and discarded as clinical waste

*When to wear an FFP3 mask*

FFP3 masks should be worn only by those staff carrying out aerosol generating procedures. To be effective, individual users must be trained to fit the mask properly to their face. The mask must seal tightly to the face to prevent air entering from the sides. A good fit is only achievable where there is good mask-to-skin contact. Beards, long moustaches and stubble may cause leaks around the mask. Staff who may be

required to wear an FFP3 mask will be trained how to fit the mask to their face for maximum benefit. FFP3 masks should be replaced after each use and changed if breathing becomes difficult, or if the mask becomes damaged, or obviously contaminated, or if a proper face fit cannot be maintained.

FFP3 masks must conform to BS EN 149:2001 standard (FFP is short for “filter face piece” and the “3” denotes the filtration efficiency of the respirator. FFP3 masks can be used for up to 8 hours provided the integrity of the mask is not compromised.

#### Fit Testing FFP3

If a healthcare worker fails the fit-test then this should be repeated using the same mask and ensuring that the mask is fitted to the face correctly. If using the same size and model of mask, a member of staff fails the fit test on two separate occasions, and then only at this point should alternative masks/hoods be considered.

#### Gloves

- Gloves are necessary for the routine care of residents suspected or known to have influenza.
- Gloves should be removed immediately after use, disposed of as clinical waste and hand hygiene performed.

#### Aprons

- A plastic apron should be used to prevent contamination of staff uniform or clothing.
- The apron should be removed immediately after care is given, and discarded into a clinical waste bag.
- Aprons should not be reused.
- You should consider the use a gown instead of an apron if extensive soiling of clothing or contact with blood or body fluids is anticipated.

#### Gowns

- Single use, long sleeved, fluid repellent gowns must be worn when performing/assisting in aerosol generating procedures. If non repellent gowns are used a plastic apron should be worn underneath.

#### Eye protection

- Eye protection should be considered when there is a risk of contamination of the eyes with blood, body fluids, secretions or excretions.
- There should be an individual risk assessment at the time of providing care.
- Eye protection should always be worn during aerosol generating procedures.

A diagram of how to put on and remove PPE is contained in Appendix 2.

#### F. Decontamination of patient equipment

- Where possible, equipment should not be shared between residents with influenza.
- All other equipment should be cleaned between patients with warm water and detergent.

#### G. Decontamination of the environment

- Influenza A(H1N1)v is inactivated by standard cleaning with freshly prepared detergent and warm water.
- As a minimum, all isolation rooms / segregated areas should be cleaned daily.
- More frequent cleaning of environmental surfaces such as lockers, tables, chairs, televisions and floors may be indicated when known to be contaminated with secretions, excretions or body fluids.
- Adequate supplies of cleaning materials must be available and domestic staff trained in cleaning procedures.
- If a resident has vacated a room the room should be cleaned as normal and used immediately after this process is complete

#### H. Disposal of waste

- Ensure waste bins (preferably lined and foot-operated) are available for residents and staff.
- Clinical waste should be disposed of in accordance with local policy.
- Avoid direct contact with secretions by the correct use of PPE when handling waste.

#### I. Laundry

No special handling procedures beyond those normally required.

##### **Sending Laundry Home**

Staff should advise relatives or carers to empty laundry directly into the washing machine avoiding sorting the laundry if at all possible. If relatives or carers have to sort or touch the laundry they should be advised to wear rubber gloves and wash these and their hands with soap and warm water afterwards. Relatives and carers should be given a copy of Health Protection Scotland – Washing Clothes at Home Leaflet.

## J. Management of a Coughing & Sneezing Patient

Residents, staff and visitors should be encouraged to minimise potential influenza transmission through good hand hygiene measures:

- Cover nose and mouth with disposable single use tissues when sneezing, coughing, wiping and blowing noses.
- Dispose of used tissues in nearest waste bin, wash hands after coughing, sneezing using tissues.
- Keep hands away from eyes, mouth and nose.

Some residents may need assistance with containment of respiratory secretions, e.g. older people and children. Those who are immobile may need a container readily at hand for immediate disposal of tissues. They should also have a supply of hand wipes and tissues. Where possible in common waiting areas or during transport, coughing and sneezing residents should wear surgical masks to minimise the spread of respiratory secretions and to reduce environmental contamination.

## K. Staff Education

All healthcare workers must receive basic training on standard infection control precautions. In addition, staff must be aware of the need to use additional measures during a pandemic of influenza. This will include information on influenza and how to reduce the transmission such as segregation of flu and non-flu patient, decontamination of patient equipment and use of standard PPE. All staff who need training on how to fit and wear an FFP3 mask must be identified and receive training on how to fit a mask.

## L. Staff Uniforms

- The appropriate use of disposable aprons will protect uniforms from contamination in most circumstances.
- Uniforms should be laundered in accordance with local policy.
- Staff who do not normally wear a uniform should consider wearing clothing that is easily washed.

## M. Exclusion of Staff

- Staff who are clinically diagnosed with Influenza A(H1N1)v should be excluded from work for the duration of their treatment with antiviral medication and until symptoms have resolved.
- Public Health (NHS Board) should also be contacted with the details of these individuals.
- Staff should notify their employer using agreed local procedures. It will be vital to track absence trends due to pandemic flu or due to other reasons. Statutory sickness certification arrangements are being kept under review
- Staff at risk of complications if infected, e.g. pregnant or immunocompromised should avoid caring for symptomatic residents.

## N. Dying and Deceased Residents

### **Ministers of Religion**

Ministers of religion should wear PPE as outlined in this document.

### **Last Offices**

When performing last offices for diseased residents, healthcare workers must follow standard infection control precautions: surgical masks should be considered if there is a risk of splashes of blood or body fluids, secretions and excretions.

A body bag should only be considered if there is leakage of body fluids. Hygienic preparation of the body should be performed as normal.

If the family wishes to view the body, they may be allowed to do so and instructed to wear PPE as per standard infection control precautions.

Interim

## References

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HPS – Infection Control precautions for the management of Residents in Care Homes with Influenza like illness.

## Appendix 1

### Putting On And Removing Personal Protective Equipment

The level of PPE used will vary based on the procedures being carried out and not all items of PPE will always be required. Standard infection control precautions apply at all times. The order given here for putting on PPE is practical but the order for putting on is less critical than the order of removal:

**a) Gown (or apron [illustrated] if not aerosol-generating procedure)**

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten at back of neck and waist



**b) FFP3 respirator<sup>1</sup> (or surgical mask if not aerosol generating procedure)**

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



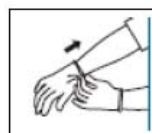
**c) Goggles or face shield (aerosol-generating procedure and as appropriate after risk assessment)**

- Place over face and eyes and adjust to fit



**d) Disposable gloves**

- Extend to cover wrist of gown if worn.



The order for removing PPE is important to reduce cross contamination so the order outlined below always applies even if not all items of PPE have been used:

**a) Gloves**

Assume the outside of the glove is contaminated:

- Grasp the outside of the glove with the opposite gloved hand; peel off
- Hold the removed glove in gloved hand
- Slide fingers of the ungloved hand under the remaining glove at wrist
- Peel second glove off over first glove
- Discard appropriately



**b) Gown or apron**

Assume the gown/apron front and sleeves are contaminated:

- Unfasten or break ties
- Pull gown/apron away from the neck and shoulders, touching the inside of gown only
- Turn the gown inside out
- Fold or roll into a bundle and discard appropriately



**c) Goggles or face shield**

Assume the outside of goggles or face shield is contaminated:

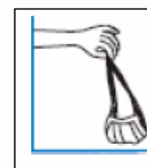
- To remove, handle by head band or ear pieces
- Discard appropriately



**d) Respirator or surgical mask**

Assume the front of respirator/surgical mask is contaminated:

- Untie or break bottom ties, followed by top ties or elastic and remove by handling ties only
- Discard disposable ones appropriately



**Perform hand hygiene immediately after removing all PPE.**

To minimise cross-contamination, the order outlined above should be applied even if not all items of PPE have been used. **Clean hands thoroughly immediately after removing all PPE.**

## Appendix 2 – List of Aerosol generating Procedures

- Endotracheal intubation and related procedures, for example, manual ventilation and airway suctioning
- Cardiopulmonary resuscitation
- Diagnostic sputum induction
- Bronchoscopy
- Non Invasive Ventilation (NIV) e.g. Bilevel Positive Airway Pressure Ventilation (BiPAP), Continuous Positive Airway Pressure Ventilation (CPAP) and High Frequency Oscillatory Ventilation (HFOV)
- Procedures involving the use of high-speed devices such as power saws e.g. those used in post mortem.
- Dental procedures