Policy Objective

To ensure all relevant clinical staff are aware of the risks associated with Respiratory Tract Infections including H1N1

This policy applies to all staff employed by NHS Greater Glasgow & Clyde and locum staff on fixed term contracts.

THIS GUIDANCE APPLIES TO ADULT AREAS ONLY

KEY CHANGES FROM THE PREVIOUS VERSION OF THIS POLICY

- None

Document Control Summary

Approved by and date	Board Infection Control Committee 31 March 2014
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Developed by	Infection Prevention Control Policy Sub-Group 0141 211 2526
Related Documents	Standard Infection Control Precautions (SICPs) (HPS National IPC Policy) NHSGGC Hand Hygiene Policy NHSGGC Outbreak Policy NHSGGC SOP Cleaning of Near Patient Equipment NHSGGC SOP Twice daily Clean of Isolation Rooms NHSGGC SOP Terminal Clean of Isolation Rooms NHSGGC Personal Protective Equipment Policy
Distribution / Availability	NHSGGC Infection Prevention and Control Policy Manual and the Internet www.nhsggc.org.uk/infectioncontrol
Implications of Race Equality and other diversity duties for this document	This policy must be implemented fairly and without prejudice whether on the grounds of race, gender, sexual orientation or religion.
Lead Manager	Board Infection Control Manager
Responsible Director	Board Medical Director

*** Separate guidance is available for the control of Respiratory Infections in Children**

The most up-to-date version of this policy can be viewed at the following website:
www.nhsggc.org.uk/infectionpreventionandcontrol

CONTENTS

1. Responsibilities

Healthcare Workers (HCWs) must:

- Follow this policy.
- Inform a member of the Infection Prevention Control Team (IPCT) if this policy cannot be followed.
- Must ensure care plans are available at all times.

Senior Charge Nurses (SCNs) / Managers must:

- Support HCWs and IPCTs in following this policy.
- Cascade new policies to clinical staff after approval by the Board Infection Control Committee (BICC).

IPCTs must:

- Keep this policy up-to-date.
- Provide education opportunities on this policy.

2. Influenza

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

- infect humans
- spread effectively from human to human
- causes significant clinical illness in a high proportion of those who acquire the virus

Primary strategies for preventing influenza are:

- **VACCINATION - the most effective way of preventing the spread of influenza to HCWs**
- early detection and treatment
- standard infection control measures to prevent transmission during patient care

Strict adherence to standard infection control precautions will help to prevent this spread within hospitals and other healthcare settings.

The infection control guidance within this document is based on current knowledge of influenza transmission, the pathogenesis of influenza and the effects of influenza control measures during past pandemics and inter-pandemic periods.

3. Symptoms of Influenza

Influenza is a respiratory illness characterised by fever, cough, headache, sore throat, aching muscles and joints. There is a wide spectrum of illness ranging from minor symptoms through to pneumonia and death. The most common complications of influenza are bronchitis and secondary bacterial pneumonia.

The typical incubation period for non-pandemic influenza is one to four days, with an average of two to three days. Adults can be infectious from the day before symptoms begin to approximately five days after illness onset. Children can be infectious for seven or more days, and young children can shed virus for several days before their illness onset. Severely immunocompromised persons can shed virus for weeks or months.

4. Routes of Transmission

There are three main routes of transmissions:

i. Droplet Transmission

Large droplets (greater than 5 microns in size) may be generated from a person with clinical disease during coughing or sneezing and 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 for up to 1 metre, so close contact is required for transmission.

ii. Direct / Indirect Contact Transmission

Direct contact transmission is when the virus is spread person to person either by contact with the infectious persons skin or oral contact, e.g. symptomatic patient to a HCW, e.g. a sneeze or cough directly onto the 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 24 hours.

iii. By the Airborne Route during and after Aerosol Generating Procedures (AGPs)

Transmission may occur at short distances through inhalation of small particle aerosols which are produced during Aerosol Generating Procedures (AGPs). (See section 5 below)

Smaller droplets or aerosol produced during these types of procedures can be inhaled and cause infection. They may also remain in the air for a prolonged period and travel over distances. For this reason patients with influenza who require these types of procedures should be nursed if possible in a negative pressure room. If not, the door must be kept closed.

5. Aerosol Generating Procedures (AGPs)

Healthcare staff that perform AGPs on patients with confirmed or suspected influenza should don additional protective clothing (see **Section 7E** Personal Protective Equipment).

Where possible, AGPs should be avoided or alternative methods considered. Only essential staff should be present.

AGPs

- intubation, extubation and related procedures, e.g. manual ventilation
- cardiopulmonary resuscitation
- bronchoscopy
- surgery and post mortem procedures in which high-speed devices are used to open the respiratory tract
- dental procedures
- non-invasive ventilation (NIV) e.g. bi-level positive airway pressure ventilation (BiPAP) and continuous positive airway pressure ventilation (CPAP)
- high frequency oscillatory ventilation (HFOV)
- induction of sputum

6. Testing for Influenza

- In the community, routine testing of patients with flu-like illnesses is not recommended unless there is a specific reason, e.g. GP spotter practices.
- Patients who present to hospital with flu-like illness should be tested if clinically relevant.
- Repeat testing to confirm clearance of influenza is not required.

Anti-viral Prescribing for patients with flu-like illness

Treatment and prophylaxis

Please contact microbiologist, infectious disease consultant or virologist to obtain advice regarding treatment of suspected or known cases of influenza and / or prophylaxis of specific vulnerable groups. The most up-to-date information on treatment issued by the Scottish Government Health Directorates (SGHD) can be viewed at http://www.hps.scot.nhs.uk/resp/guidelinedetail.aspx?id=53562.

7. Limiting the Spread of Influenza

A. Patient Isolation

- Patients with confirmed or *suspected influenza who require AGPs must be nursed in an isolation room with the door closed.
- All patients with confirmed or *suspected influenza should be nursed if possible in a single room with en suite facilities. If a single room is not available staff should ensure that there is at least 2 metres between bed centres.
- If a patient is nursed in a side room a sign should be displayed prominently at the entrance to identify the area.
- Patients should be considered infectious until 48 hours after coryzal symptoms have resolved.
- Patients who are diagnosed as having influenza but are asymptomatic are unlikely to spread the virus and can be regarded as non-infectious.
- PCR tests can remain positive for considerable periods and should not be used to determine infectivity.
- Patients with underlying medical conditions or patients 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.
- Patients with prolonged illness or complications should be assessed by clinical staff and the ICT, and isolation precautions discontinued if deemed appropriate. Patients who fall into this category must be assessed individually.

  * In this context suspected patients are defined as those who have been tested for the presence of influenza.

B. Patient Movement / Inter-Hospital Transfers

Influenza patients who are still infectious must not leave the area unless there is an urgent clinical need. If movement is necessary the patient should wear a surgical mask if possible to minimise the dispersal of respiratory secretions and prevent environmental contamination. The surgical mask should be worn until the patient is returned to the isolation room / cohort area.

If a patient requires transfer to another department the following procedures must be followed:

- The department must be informed in advance.

- HCWs transporting the patient **do not need** to wear a mask unless the patient is unable to wear a mask.
- The patient must be taken straight to and returned from the department and must not wait in a communal area.
- Patients should be placed at the end of a list to allow appropriate decontamination after any procedure.
- In some settings, e.g. radiology departments, a separate room should be set aside for patients with influenza and this room should be cleaned after the patient has left the department.
- If the patient requires oxygen then the patient need not wear the surgical mask however if nasal prongs are used to deliver oxygen then the patient should also wear a surgical mask over the prongs.

Hospital Transfers

Patients must not be transferred from one hospital to another for routine care however some patients may require specialist care, e.g. renal dialysis. If a patient has to be transferred this **MUST** be discussed with the local ICT who will alert the ICT at the receiving hospital. The ICT at the receiving hospital will alert the bed manager or on-call manager. It will be the responsibility of the clinical area that the patient is being discharged from to alert the Scottish Ambulance Service.

C. Visitor Restrictions

- Visiting in hospital should be restricted to 1-2 visitors only in order to reduce the risk of influenza transmission from and to visitors. Only close relations or a partner should be allowed to visit.
- Children should not be allowed to visit patients in hospital however in exceptional circumstances, e.g. when a parent is critically ill, then advice should be sought from the ICT and a risk assessment will be undertaken.
- All visitors must be free of flu-like symptoms, however in exceptional circumstances, e.g. when a patient is critically ill, then advice should be sought from the ICT and a risk assessment will be undertaken.
- Visitors must speak to a member of staff and be instructed on hand hygiene practice and the wearing of protective clothing as appropriate prior to visiting the patient.
- Visitors to patients ventilated with NIV or HFOV may be exposed to potentially infectious aerosols. The number of such visitors should be limited to two unless there are exceptional circumstances. Visitors should be made aware of the risks and be offered PPE as recommended for staff.

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. AHRs are effective especially where hand hygiene facilities are poor or lacking.

Hand hygiene should be performed:

- before touching a patient
- before a clean or aseptic procedure
- after exposure to blood or body fluids
- after touching the patient
- after touching the patient's surroundings

Please refer to the NHS Greater Glasgow & Clyde Prevention and Control of Infection Hand Hygiene Policy.

E. Personal Protective Equipment (PPE)

PPE is worn to protect staff from body fluids to reduce the risk of transmission of influenza between patients 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. Appropriate PPE for care of patients who are suspected or confirmed to have influenza is summarised in **Table 2**.

Table 2

PPE	Close patient contact (< 1 metre)	Aerosol Generating Procedures (AGPs)
Hand Hygiene	✓	✓
Gloves	✓	✓
Plastic Aprons	✓	✓
Surgical Mask	✓	x
FFP3 Respirator	x	✓
Eye Protection	Risk Assessment	✓

MASKS

Surgical masks should be worn by HCWs for contact with patients suspected or known to have influenza. The mask provides a physical barrier which becomes ineffective once wet. As masks themselves may become a reservoir for the virus great care should be taken during their removal and disposal.

When to remove the mask

If visiting a number of patients within a cohort area or in rapid succession within a clinic or A&E department, it is acceptable to wear the same mask and change it at the end of the session, and if it gets wet. Great care must be taken not to contaminate the hands during this time by touching the mask. Hand hygiene must be performed after removal of all PPE. All contaminated PPE must be removed before leaving a patient care area. Surgical masks or FFP3 respirators should be removed last.

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 AGPs. 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 continuous use provided the integrity of the mask is not compromised.

Fit Testing FFP3

If a HCW 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 HCW fails the fit test on two separate occasions, only at this point should alternative masks / hoods be considered. Further advice on fit testing should be obtained from Health and Safety. It is recommended that fit testing should be undertaken yearly.

In the event of a break in infection control procedures, e.g. incorrectly worn FFP3 during an AGP, the member of staff should be reviewed by Occupational Health if they have not received the seasonal influenza vaccination.

GLOVES

- Gloves are necessary for the routine care of patients suspected or known to have influenza.
- Gloves should be removed immediately after use, disposed of as clinical waste and hand hygiene performed. In Partnerships, follow standard disposal procedures.
- Please refer to the NHSGGC Prevention and Control of Infection Personal Protective Equipment Policy.

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 re-used.
- You should consider the use of a fluid repellent gown instead of an apron if extensive contamination of clothing is anticipated e.g. during AGP.

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 AGPs.

A diagram of how to put on and remove PPE is contained in **Appendix 1**.

F. Decontamination of Patient Equipment

- Where possible, equipment should not be shared between patients with influenza.
- Where equipment must be shared Actichlor Plus (or a 1,000 ppm solution of hypochlorite should be used to clean equipment before being used on the next patient. Please refer to the NHSGGC Prevention and Control of Infection Decontamination Policy.

G. Decontamination of the Environment

All environmental surfaces potentially contaminated by respiratory secretions from a patient with or suspected of influenza, should be cleaned following the NHSGGC Standard Operating Procedures (SOPs) for the Twice Daily Clean of Isolation Rooms and Terminal Clean of Isolation Rooms.

All frequently touched surfaces should be decontaminated after any AGP using chlorine based detergent. Limit the amount of equipment in the room as far as possible.

H. Disposal of Waste

No special handling procedures beyond those required to conform to standard infection control precautions are recommended for clinical and non-clinical waste that may be contaminated with influenza virus. HCWs must follow the NHS Greater Glasgow & Clyde Waste Policy.

I. Laundry

Treat as infected. Discard bed linen into an alginate bag then into a clear plastic bag before placing in the laundry buggy.

Sending Laundry Home

Whilst patients are symptomatic they should be advised to wear hospital gowns. If relatives or carers wish to take patients clothing home, staff must place clothing into a domestic alginate bag and staff must ensure that a Home Laundry Information Leaflet is issued.

Nursing staff should also refer to the following document: NHSGGC Taking Laundry Home – Information for Healthcare Workers (Patients Clothing Bags for Contaminated Laundry – Information for Clinical Staff)

NB Nursing staff in the ward should record in the nursing notes that both the advice and information leaflet has been issued.

J. Respiratory Hygiene / Cough Etiquette (Catch it, Bin it, Kill it)

Patients, staff and visitors should be encouraged to minimise potential influenza transmission by:

- Covering the nose and mouth with disposable single-use tissues when sneezing, coughing, wiping and blowing noses.
- Disposing of used tissues in nearest waste bin, washing hands after coughing, and sneezing using tissues.
- Avoid touching eyes, mouth and nose.

Some patients 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 tissues and wipes.

K. Persons most at risk of developing complications

- People aged between 6 months to 65 years with:
  - chronic lung disease
  - chronic heart disease
  - chronic kidney disease
  - chronic liver disease
  - diabetes mellitus
  - chronic neurological disease
  - immunosuppression (whether caused by disease or treatment)
- Pregnant women
- Young children aged under 5 years
- People aged 65 years and older

L. Dying and Deceased Patients

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

Last Offices: When performing last offices for deceased patients HCWs 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.

The body should be hygienically prepared as normal. A body bag should only be considered if there is leakage of body fluids. The body can be handled as normal; viewing and touching is permitted.

M. Staff Uniforms

HCWs should follow the local policy for the laundering of uniforms. Theatre scrubs do not negate the need for PPE.

8. References

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Appendix 1 – putting on and removing PPE

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[1] (or surgical mask if not aerosol generating procedure)

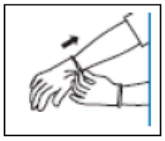
- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator

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:

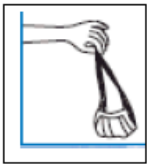
- Unfasten or break ties
- Pull gown/apron away from the neck and shoulders, touching the inside of gown only
- Turn the gown inside out
- Fold or roll into a bundle and discard appropriately

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.**