

**THIS GUIDANCE IS LIKELY TO BE SUBJECT TO CHANGE IF THERE IS HIGH 'FLU ACTIVITY OR EPIDEMIC CONDITIONS'**

**TO ENSURE YOU HAVE THE LATEST VERSION REFER TO IaN**

*All printed versions should be considered likely to be out of date*

**GUIDANCE FOR THE MANAGEMENT OF INFLUENZA  
2011/2012**

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**Controlled document**  
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Please *specify* standard/criterion numbers and tick ✓ other boxes as appropriate

*The Strategic Directions 2007-2012 were agreed by the Board of Directors in October 2007 to support the Trust's vision "Respond, Deliver, Enable". The Key Milestones below will ensure there is a shared understanding about what needs to be delivered.*

<b>Monitoring Information</b>		<b>Strategic Directions – Key Milestones</b>	
Patient Experience		Waiting	
Assurance Framework		Privacy and Dignity	
Monitor/Finance/Performance		Efficiency and Effectiveness	
COC Regulations/Outcomes:	<b>4b, 8a, 8i</b>	Delivery of Care Closer to Home	
		Infection Control	
NHSLA Risk Management Standards for Acute Trusts			
NHSLA CNST Maternity Clinical Risk Management Standards:			
Other ( <i>please specify</i> ):			
<b>Note:</b> This Guidance has been assessed for any equality, diversity or human rights implications			

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## **1. Introduction**

- 1.1. Influenza or 'flu' is a respiratory illness caused by influenza A or B virus. Symptoms frequently include headache, fever, cough, sore throat, aching muscles and joints.
- 1.2. Influenza is a highly infectious illness transmitted through the respiratory route by aerosols or contact.
- 1.3. Influenza occurs most often in winter and usually peaks between December and March in the northern hemisphere. Illness resembling influenza may be caused by several different viruses, therefore national surveillance schemes are in place to detect circulation of influenza viruses.
- 1.4. The influenza virus is unstable and new strains and variants are constantly emerging. For this reason flu vaccine is reformulated each year to match circulating strains, and a booster should be given each year to those qualifying for influenza vaccination. Vaccine is recommended for those with chronic illnesses including respiratory conditions such as COPD and asthma, renal and heart failure. Pregnant women are also recognised as being at special risk. Vaccine is recommended in Healthcare Workers for the protection of their patients.
- 1.5. For most people influenza infection is just a nasty experience, but for some it can lead to more serious illnesses. The most common complications of influenza are bronchitis and secondary bacterial pneumonia. These illnesses may require treatment in hospital and can be life threatening especially in the elderly, people with chronic illness or immunosuppression.

## **2. Purpose**

- 2.1. The purpose of this guidance is to provide information and guidance to ensure the Trust is able to respond to the consequences of rising numbers of patients with seasonal 'flu and to ensure patients with 'flu are managed safely and effectively.
- 2.2. This guidance supports the Trust's Infection Prevention and Control Policy.
- 2.3. This guidance will be implemented when the Health Protection Agency (HPA) national surveillance scheme indicates that influenza virus A or B is circulating and there is a substantial likelihood that people presenting with an influenza-like illness are infected with influenza virus.
- 2.4. The guidance may be implemented if an outbreak of 'flu is detected locally or within the Trust, in the absence of evidence from national surveillance as in 2.2.
- 2.5. This guidance may also be implemented in the early stages of a flu pandemic before the need for the Trust's Pandemic Flu Plan to be implemented.

## **1. Definitions**

- 1.1. Definitions are contained within the body of the policy.

## **2. Duties and responsibilities**

### 2.1. Infection Control and Prevention Team:

2.1.1. To monitor and contribute to surveillance schemes

2.1.2. To notify the Trust's Senior Management Team when there is evidence from the Health Protection Agency national surveillance scheme, or elsewhere, to indicate that influenza virus A or B is circulating and there is a substantial likelihood that people presenting to the Trust with an influenza-like illness are infected with influenza virus

2.1.3. To participate in Trust Control Team Meetings and carry out actions contained within this plan

### 2.2. Microbiology Laboratory

2.2.1. To provide appropriate capability for the diagnosis of viral respiratory illness, either on site or by referring specimens to another laboratory.

2.2.2. The level of diagnostic capability to be varied so as to be consistent with the requirements of the Trust to diagnose and to manage influenza like illness in non-epidemic and epidemic conditions.

### 2.3. Trust Control Team

2.3.1. To meet when notified that influenza virus A or B is circulating and there is a substantial likelihood that people presenting with an influenza-like illness are infected with influenza virus

2.3.2. To co-ordinate the response to the consequences of rising numbers of patients with seasonal 'flu and to ensure patients with 'flu are managed safely and effectively.

### 2.4. Clinical and Non-clinical Directorates

2.4.1. Contribute to the response to seasonal flu by participating in Incident Control meetings and communicating actions to relevant staff

## **3. Archiving arrangements**

3.1. This guidance will be retained in electronic format for a minimum period of 8 years in accordance with Trust Policy.

## **4. Process for monitoring compliance with and effectiveness of the Guidance**

4.1. This guidance will be monitored during and after the management phase of the response to seasonal flu and any development actions identified incorporated into a revised guidance.

## 5. Standards/Key Performance Indicators

5.1. Not applicable

## 6. References

8.1 H1N1(2009) winter flu: Updated advice for providers of maternity services  
[http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1294740886540](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1294740886540)

8.2. Pharmacological treatment and prophylaxis of influenza  
[http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1287147812045](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1287147812045)

8.3. Infection prevention and control in health care for confirmed or suspected cases of pandemic (H1N1) 2009 and influenza-like illnesses  
<http://www.who.int/csr/resources/publications/swineflu/swineinflcont/en/index.html>

8.4. Pandemic (H1N1) 2009 Influenza: A summary of guidance for infection control in healthcare settings  
[http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/@ps/documents/digitalasset/dh\\_110899.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_110899.pdf)

**NOTE** References to influenza infection control guidance generated in preparation for a pandemic are included as general sources for information which can be applied to epidemic influenza as deemed appropriate by local teams.

## 9. Associated Trust policies

9.2. Outbreak Control Policy

9.3. Community Acquired Pneumonia Policy

9.4. Avian Influenza Policy

9.5. Pandemic Flu Plan

**PLAN IMPLEMENTATION**

**When the Health Protection Agency national surveillance scheme indicates that influenza virus A or B is circulating and there is a substantial likelihood that people presenting with an influenza-like illness are infected with influenza virus**

**Or**

**Once Flu is circulating in community or initial cases identified in hospital:**

**Infection Prevention and Control Team Advise Chief Operating Officer or Deputy**

Convene Trust Control Team

**Trust Control Team**

- Co-ordinate preparatory actions
- Determine criteria to cancel electives to maintain capacity of Respiratory Physicians
- Agree Consistent approach for responding to enquiries from patients/carers directly to consultants

**Infection Prevention and Control Team:**

- Advise clinical areas regarding:
  - Use of PPE in cohort areas and non-cohort areas (including fit-testing)
  - Criteria and areas for isolation/cohorting
  - Need for wards to identify patients with flu on Ward Whiteboard using Influenza indicator flag
  - Need to move patients promptly out of side rooms when not infected and test is negative
- Check stocks of test kits and PPE

**Microbiologists and Microbiology Laboratory**

- Advise clinical management & diagnosis
  - Symptoms
  - Need to test and record that test has been requested (especially admission areas)
  - Times of test runs and return of results (As cases rise, increase test runs to daily)
  - Treatment (e.g. anti-virals)

**ITU:**

- Review arrangements with Bramble HDU to co-ordinate care delivery to manage extreme demand on services
- Review staffing contingency plans - RD&E, Bank and agency staff
- Review Regional ITU and ECMO arrangements and contingency plans
- Review arrangements for cohorting influenza patients in Rooms 11-15:

- Tested 2010-2011 season and no evidence of spread of infection
- Patients intubated and on high doses of antiviral with excellent hand and environmental hygiene precautions and PPE practice can be safely managed

**Paediatrics:**

- Review arrangements with ITU to co-ordinate care delivery to manage extreme demand on services
- Review paediatric medical staffing to provide cover for Bramble and ED
- Review Regional PICU arrangements and contingency plans

**Medicine:**

- Review Culm Ward (or designated cohort ward) procedure for admission of suspected flu patients
- Review need for medical cover over 24 hour period to support discharge of patients
- Review discharge criteria and information for patients re ongoing support from Primary Care

**Pharmacy:**

- Check stocks of anti-virals

**Occupational Health:**

- Review information on IaN
- Review advice for pregnant staff regarding working with flu patients

## IDENTIFICATION OF POTENTIAL CASES

### A.1 Screening of admissions

- A.1.1. Many viruses can cause a “flu like illness”. However the probability of true influenza infection increases sharply when ‘flu is actually circulating.
- A.1.2. Departments will be informed when national surveillance detects increasing ‘flu activity. When this happens GPs will be authorized to use specific influenza drugs (oseltamivir or zanamivir) if indicated
- A.1.3. Current advice for people who suspect that they may have ‘flu is to stay at home and contact NHS Direct. People with serious underlying illness, who are pregnant or whose condition suddenly worsens should consult their GP if they are concerned that they have ‘flu. Therefore it is hoped that most patients arriving at hospital with ‘flu like illness will have been in contact with a GP first and are expected. However it is likely that some will ignore advice and arrive at a Walk in Centre, Minor Injury Unit or the Emergency Department of the Hospital.
- A.1.4. It is important that patients who may have influenza are recognised early. Potential cases can be segregated appropriately. Attending staff can use appropriate PPE including masks. Patients needing admission can be isolated in side rooms.
- A.1.5. Clinical criteria will be used to screen patients.
- A.1.6. Patients with any of the following should be reviewed as possible cases of ‘flu.
- Fever  $\geq 38^{\circ}\text{C}$  or a history of fever.
  - Flu like illness (any two or more of the following symptoms: cough, sore throat, headache, rhinorrhea limb/joint pain)
  - Pneumonia
  - Exacerbations of COPD
  - Severe life threatening illness
  - Other presentations suggesting suspicion of influenza to admitting clinician
  - Young children considered as possibly infected by a senior paediatrician
- A.1.7. Emergency Department (ED) and Acute Medical Unit (AMU) staff should be proactive in asking about flu like symptoms, and a high index of suspicion should be maintained especially for serious respiratory illness which may be a complication of flu.
- A.1.8. It is important to note that Avian Influenza also remains a risk and that travellers with symptoms consistent with Avian Influenza who have travelled from areas with avian influenza and had contact with birds in markets for example, will also need to be isolated and assessed. See guidance for the management of suspected or probable cases of highly pathogenic avian influenza (bird flu) on IaN  
<http://rdeweb/userdata/documents/1234/Avian%20flu%20Guidelines%20Feb%2008.pdf>.

## A.2 Case definitions

A.2.1. Case definitions may vary depending on the likelihood of influenza, which is a function of the level of influenza activity in the community at the time. During high levels of community activity the following clinical criteria are appropriate.

### A.2.2. Clinical criteria in hospital

Any person in hospital with one of the following:

Fever  $\geq 38^{\circ}\text{C}$  OR history of fever

AND

flu-like illness (two or more of the following symptoms: cough, sore throat, headache, rhinorrhea limb/joint pain)

OR

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

OR

severe community acquired pneumonia

### A.2.3. Laboratory criteria

At least one of the following tests:

- Specific real-time RT-PCR for influenza A or B
- Four-fold rise in influenza specific antibodies (acute phase sera and convalescent >10-14 days later)

## A.3 Case classification

### **Possible case**

Any person meeting the clinical criteria

### **Probable case**

Any person meeting the clinical criteria AND with unconfirmed laboratory results

### **Confirmed case**

Any person with laboratory confirmation

### **Discarded case**

Any suspect case not fulfilling the possible case definition or a possible case if the laboratory result is negative

## MANAGEMENT OF ADMISSIONS

### B.1 Admissions to hospital

- B.1.1. Cases of suspected or confirmed flu should only be managed in hospital if this is essential. Otherwise cases should be managed in their own homes and followed up by Primary Care. The infection control team **MUST** be informed of any patients seen in the hospital whether or not they are admitted.

### B.2 Patients arriving in the Emergency Department or Walk-In Centre - See Appendix 3

- B.2.1. As soon as the potential flu case is recognised, the patient should be moved to an appropriate cubicle room in ED or the Walk-In Centre with the door closed. If the patient's condition allows it he/she should wear an ordinary surgical mask. Oxygen may be given by nasal prongs if necessary and following the emergency oxygen guidelines, but nebulisers should **NOT** be used.
- B.2.2. Attending staff should put personal protective equipment (PPE) including respiratory protection (see Annex E) before any further action is taken. If assessment shows he/she possibly has flu, and that admission is indicated, then he/she must be admitted to an isolation room designated in agreement with site management and the infection control team for adults, or Bramble Green for paediatric cases or ICU for adults or children if ventilation support is necessary as soon as assessment is complete and the receiving ward is ready.
- B.2.3. The cubicle used for assessment must then be terminally cleaned using the standard terminal clean procedure before it is used again. Respiratory protection is not required during the cleaning process as the patient will have vacated the room.
- B.2.4. All staff should be covered by seasonal 'flu vaccine.
- B.2.5. Influenza prophylaxis is not offered to staff contacts who did not have appropriate PPE. However any potential staff contacts who are concerned because they consider themselves to be in a high risk group should contact their manager. Advice from Occupational Health or Microbiology can be obtained, normally during working hours.
- B.2.6. If admission is not indicated but the patient is thought to have flu refer to Paragraph B and Appendix 6.

### B.3 Patients identified as possible cases before admission

- B.3.1. Possible flu cases should not be accepted for admission unless hospital management is clearly necessary. If possible cases should be discussed with a senior member of clinical staff to determine if admission is advisable.
- B.3.2. Those requiring admission should be admitted directly to an isolation room designated with site management and the infection control team, or Bramble Green for paediatric cases or ICU if ventilation support is necessary. It is essential to confirm in advance that the receiving ward is ready and prepared to receive the patient.

- B.3.3. There must be close liaison with ambulance personnel by the admissions coordinator, informing them where they should bring the patient. The patient should be given a surgical mask to wear while being transported through the hospital and be taken to the isolation room without delay.
- B.3.4. Attending staff in the receiving ward should use appropriate protective clothing (see Annex E).

#### **B.4 Patients identified as possible flu cases after admission**

- B.4.1. These patients should be transferred to a side room on a suitable ward, Bramble Green or ICU if appropriate as soon as possible. Site Management should be contacted to identify where the patient should be isolated, in liaison with the ICT. The patient should be given a surgical mask to wear until transferred to a single room.
- B.4.2. The infection control team should be contacted to advise on identifying patient contacts, and environmental cleaning required.
- B.4.3. All staff should be covered by seasonal 'flu vaccine.
- B.4.4. Influenza prophylaxis is not offered to staff contacts who did not have appropriate PPE. However any potential staff contacts who are concerned because they consider themselves to be in a high risk group should contact their manager. Advice from Occupational Health or Microbiology can be obtained, normally during working hours.

#### **B.5 Paediatric Patients**

- B.5.1. Children, as adults, should only be admitted if hospital treatment is essential. Cases requiring respiratory support should be admitted to the ICU. Others should be admitted to a designated side room on Bramble Green.
- B.5.2. Parents or carers who accompany children with probable or confirmed influenza may themselves be infected or incubating flu. If appropriate they may stay with their children but should be isolated and not allowed to use shared parent accommodation or other areas of the hospital. Advice should be sought from the ICT.
- B.5.3. Staff attending the patient must wear appropriate protective clothing (see Annex E).

#### **B.6 Oncology/ Haematology Patients paediatric and adult**

- B.6.1. Patients being treated for haematological and other cancers, who may be neutropaenic, and bone marrow transplant patients, are given contact details and advised to call for advice if they develop a febrile illness.
- B.6.2. The algorithm at **appendix 4** should be followed when these patients phone in for advice about a febrile illness or contact with influenza.
- B.6.3. Prophylaxis may be advised in the case of close, sustained and unavoidable contact. The guidance from the HPA in reference 4 should be followed.  
[http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1287147812045](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1287147812045)

## **B.7 Discharge Arrangements**

- B.7.1. Flu patients should be discharged as soon as they are medically fit for discharge, and they have a suitable place to be discharged to.
- B.7.2. Patients are infectious for 7 days after symptoms begin and should be advised to stay at home until they are no longer infectious. Contacts at home should seek advice from NHS Direct.
- B.7.3. Information for patients in the community is contained in Appendix 6.

## DIAGNOSTIC INVESTIGATIONS

### C.1 Baseline diagnostic investigations

- C.1.1. Includes investigations for the diagnosis and management of respiratory tract infection, and specific investigations for avian 'flu.
- C.1.2. Respiratory specimens should be taken with care to avoid generating aerosols. They should only be taken if staff are wearing appropriate protective equipment (see Annex E).

### C.2 Virology

- C.2.1. Viral diagnosis is only advised for patients who are to be admitted. This is to confirm diagnosis, and to inform the ICT on the requirements for isolation. Admitting areas will be informed by Microbiology and Infection Control when influenza activity is increasing, and therefore swabbing for influenza is encouraged.
- C.2.2. Respiratory Samples for Influenza A. It is crucial that good quality specimens are obtained for a reliable diagnosis to be made. A nose and a throat swab should be taken.
- C.2.3. Taking the Swabs
- **ENSURE THAT YOU USE VIRAL ISOLATION SWABS.** Assemble all supplies including the virus isolation kit, gloves, pen, scissors, etc.
  - NOTE, 2 swabs are collected but both can be sent in one transport medium container, if the type of swabs supplied make this practical.

#### Nasopharyngeal (NP) swab collection

- Tilt the patient's head back slightly and gently insert the swab along the medial part of the septum until it reaches the posterior nares.
- Rotate the swab slightly several times to dislodge the columnar epithelial cells and then quickly remove the swab.
- Insert the NP swab into the viral transport medium, cutting the excess wire or breaking the swab (depending on the type of swab supplied) to fit inside the tube.
- Firmly secure the cap.

#### Throat swab (TS) collection:

- Vigorously swab only the posterior pharyngeal wall.
- Insert the swab into viral transport medium with the nasopharyngeal swab, and break or cut off the shaft so that it does not protrude above the rim of the container.

- Firmly secure the cap.
- Label the swab container with a sticky label, or by hand (name, address, date of birth) or the barcode label.

### **C.3 Bacteriology**

C.3.1. The following specimens should be taken if pneumonia is suspected, as this may either be a primary infection or a bacterial infection complicating flu.

- Blood Culture
- Sputum culture and Gram stain
- Legionella and Pneumococcal urinary antigens

### **C.4 Radiology**

C.4.1. Chest X ray

C.4.2. If departmental radiological investigations are essential for a patient suspected of having 'flu, the investigation should be agreed in advance. The patient should wear a surgical mask when being transported to the department and during the procedure. No delay should occur in the department i.e. the patient must be transported back to the isolation room as soon as the investigation is complete. The area and equipment that the patient has been in contact with should be cleaned after the patient has left.

C.4.3. If a designated cohort area for 'flu patients is opened due to a high level of influenza activity a dedicated portable x-ray machine should be identified and kept for the use of cohorted patients.

### **C.5 Visits to other departments for investigations**

C.5.1. These should be limited, but investigations that are clinically essential must be performed. Suitable arrangements must be made in advance and agreed with Infection Control.

C.5.2. While outside the isolation room the patient should wear a surgical mask and a clean gown. All staff involved in transportation, and in contact with the patient in the receiving department must wear personal protective equipment (PPE) – see Annex E. The area and equipment that the patient has been in contact with should be cleaned after the patient has left.

## TREATMENT AND PROPHYLAXIS

### D.1 Patients with suspected or confirmed influenza

- D.1.1. Admitted patients assessed as likely to have influenza or with laboratory confirmed influenza should be given antiviral treatment. Treatment should be with either oseltamivir or zanamivir at recommended doses.
- D.1.2. For guidance on selection of antiviral agent and doses see guidance on HPA website [http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1287147812045](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1287147812045)
- D.1.3. If tests for influenza are negative the specific antiviral treatment should be stopped and appropriate management determined according to clinical judgment.
- D.1.4. Patients should be managed at home if possible, and given advice on self isolation until results of testing available, or until 7 days since onset of symptoms. Patients also should be given advice on respiratory and hand hygiene.
- D.1.5. Patients who require admission should be admitted to a side room or ICU isolation room if ventilatory support is required.
- D.1.6. If patients have pneumonia antibacterial agents should be given. Use recommendations as for community acquired pneumonia, as determined by the CURB score. See Trust community acquired pneumonia policy.
- D.1.7. Treatment modalities that may result in aerosol production should be avoided as far as possible without compromising patient care. Such procedures increase the risk of infection of healthcare staff and include:
- Nebulisation / humidification – this should be avoided
  - Intubation and certain types of ventilation - especially non-invasive ventilation - are associated with aerosol risk. Ventilators must be protected by appropriate HEPA filters changed daily.
  - Suction – closed suction systems should be used for intubated patients. Otherwise suction should be avoided.
  - Cardiopulmonary resuscitation.
  - Bronchoscopy
  - Surgery

### D.2 Post Exposure Prophylaxis

- D.2.1. Post exposure prophylaxis is not considered necessary in most cases. However there are some high risk groups in which prophylaxis is still advised. Seek advice from Microbiology.
- D.2.2. These groups include people with the following risk factors:
- Chronic respiratory disease
  - Chronic heart disease
  - Chronic kidney disease
  - Chronic liver disease

- Chronic neurological disease
- Immunosuppression (whether caused by disease or treatment)
- Diabetes mellitus
- Patients who have had drug treatment for asthma within the past three years
- Pregnant women
- People aged 65 years and older
- Children under five years old

D.2.3. Prophylaxis is advised in limited situations where sustained unavoidable contact is likely, either in an institutional or household situation for example.

## INFECTION CONTROL

### E.1 Mode of Transmission

- E.1.1. Human influenza is transmitted by droplets and fine droplet nuclei - airborne - and also by direct and indirect contact. WHO and the HPA recommend the use standard infection control precautions to prevent contact and droplet spread, single room isolation and respiratory precautions.

### E.2 Infectious Period

- E.2.1. The infectious period starts 12 - 24 hours before onset of symptoms. Adults and children older than 12 years should be considered potentially infectious until 7 days have lapsed since onset of symptoms. Children under 12, especially younger children may be infectious for longer, as are immunocompromised patients. Patients sent home should be advised to avoid contacts for 7 days after illness onset.

### E.3 Isolation

- E.3.1. Patients with suspected or confirmed 'flu will be initially admitted to an isolation room on as directed by site management in cooperation with infection control or Bramble Green for paediatric Patients.
- E.3.2. If they require ventilatory support, a negative pressure room on ICU should be used instead.
- E.3.3. If it becomes necessary single rooms or cohort areas will be designated for patients with confirmed and suspected influenza by Trust management with the infection control team.
- In 2010/11 ITU Rooms 11-15 were used to cohort influenza patients with no evidence of spread of infection. Patients intubated and on high doses of antiviral with excellent hand and environmental hygiene precautions and PPE practice can be safely managed
  - See Annex 2 - Arrangements for Admission of Suspected Flu Patients to Culm East

### E.4 Protective clothing (PPE)

- E.4.1. For contact with patients suspected or known to have influenza the following PPE should be worn:
- Surgical facemask (unless FFP3 indicated)
  - plastic apron
  - gloves –non sterile
  - eye protection – face shield or goggles if there is a risk of eye splash

If procedures likely to cause aerosols are to be undertaken, e.g. intubation, then enhanced PPE should be worn, consisting of:

- a correctly fitted high filtration mask (FFP3)
- fluid resistant gowns or long sleeved plastic aprons – non-sterile
- gloves – non-sterile
- eye protection – face shield or goggles
- theatre caps must be worn for direct or close contact

E.4.2. PPE will be available in key areas, including ED, AMUs, Torridge Ward, Bramble Ward and other locations as necessary.

E.4.3. Normally a surgical mask is used when a mask is indicated.

E.4.4. FFP3 standard respirators will only be used during procedures that may generate aerosols by personnel who have been have been fit tested. The FFP3 mask is only likely to be needed in areas such as ICU and Respiratory HDU where aerosol generating procedures may be undertaken on patients requiring respiratory support.

E.4.5. It is crucial that FFP 3 masks are fitted correctly and cover both nose and mouth. People must be fit tested to ensure FFP 3 masks are used correctly. Gloves, gowns, caps, face shields and masks must be single use and disposed of as clinical waste. Respirators should not be decontaminated and reused unless specific guidance is issued. If shortages of FFP3 masks guidance on alternatives will be given by Infection Control if the need arises.

E.4.6. Training must be given in the correct use and disposal of protective clothing. Laminated *aide memoirs* should be appropriately displayed in clinical areas.

## **E.5 Hand hygiene**

E.5.1. It is likely that hand hygiene is the single most important practice needed to reduce transmission of the virus. Influenza viruses are susceptible to alcohol. Hand hygiene must be performed using soap and water if visible soiling is present. Otherwise alcohol hand rub is appropriate.

E.5.2. Hand hygiene must be performed after removing protective clothing and prior to leaving the isolation room. Hands must then be further cleaned, using alcohol hand rub after exiting the isolation room. Hand hygiene must also be performed after cleaning of contaminated equipment.

## **E.6 Waste**

E.6.1. Infected patients may excrete 'flu virus in respiratory secretions and in faeces.

E.6.2. *En suite* facilities in the isolation rooms should be used if possible. If unable to use the en suite the patient should use a disposable bedpan / urinal. Urine

can then be poured carefully down the *en suite* toilet. Faeces and the receptacle should be disposed of in a clinical waste sack.

- E.6.3. All clinical waste must be placed in clinical waste bags and bags sealed in the normal way AND KEPT WITHIN THE ISOLATION ROOM. Double bagging is not necessary. Waste will be collected by the porters wearing appropriate PPE and taken for disposal by incineration.

## **E.7 Laundry**

- E.7.1. Laundry should be placed in water-soluble bags and then into a red outer bag. This bag must be labelled as INFECTED. Contact the Porters to arrange for separate collection of the laundry bag for transportation to the Laundry Department.

## **E.8 Cutlery and crockery**

- E.8.1. Disposable cutlery and crockery is not necessary for infection control purposes. However if used for administrative reasons it should be disposed of in clinical waste.

## **E.9 Domestic issues**

- E.9.1. Daily cleaning of isolation rooms should be undertaken, staff need to wear appropriate PPE (see above).
- E.9.2. In areas where flu patients are being nursed frequent cleaning with Chlorclean of ward areas, door knobs, staff toilets, sluice etc. is also essential and this is the responsibility of Housekeeping. Damp dusting should be performed wherever possible to avoid aerosolisation of virus. It is important that all areas are allocated and none missed. This should be monitored by infection control staff or ward managers.
- E.9.3. Terminal cleaning is the responsibility of Housekeeping and Nursing. Surfaces within the room must be disinfected using Chlorclean solution 1000ppm. There is no need to wash walls. Curtains must be changed.

## OCCUPATIONAL HEALTH AND MANAGEMENT OF CONTACTS

### F.1 Transmission

- F.1.1. Influenza is transmitted from human to human. Infection can occur by contact or respiratory routes.
- F.1.2. Close contacts are defined as within a meter of a confirmed or suspected case.

### F.2 Vaccination

- F.2.1. All hospital clinical staff are offered seasonal influenza vaccine, and should have this, unless contraindicated, for the protection of patients, other staff and themselves.
- F.2.2. This has been strongly recommended by the Chief Medical Office & Nursing Officer. Use of PPE correctly will add to protection from immunisation.

### F.3 Staff contacts

- F.3.1. Only essential HCWs should have access to the isolation room where a suspect or confirmed flu patient is located.
- F.3.2. Staff who are exposed to probable or confirmed 'flu patients are not routinely offered prophylaxis.
- F.3.3. If symptoms of 'flu develop they must stay at home, and contact their GP, or NHS direct for advice on treatment. They must also inform their manager that they may have flu symptoms.
- F.3.4. Significantly immunocompromised staff and those with certain chronic respiratory, cardiac, renal and other illnesses should NOT enter areas where flu patients are being cared for. The need to avoid flu contact should be confirmed with occupational health and line managers must be informed of the risk. In addition pregnant staff should not care for 'flu patients.

### F.4 Visitors

- F.4.1. Any visitors must be advised of the risks of infection and preferably not visit. If they insist on visiting they must take the same precautions as staff if not already classed as a close contact, in which case it may be felt that PPE is not warranted. However hand hygiene and the use of a surgical mask would still be sensible.
- F.4.2. Those visitors that have been close contacts may be incubating the disease or already be infectious due to common exposure. They must be advised not to come to the hospital.

- F.4.3. Visitors should be advised to contact NHS direct for advice if they have symptoms of flu.
- F.4.4. Parents of infected children may want to stay with their children, and may also be symptomatic, infectious or incubating 'flu. They should be isolated and accommodated in the same area as their child if possible. Advice from infection control should be obtained.

## CARE OF THE DECEASED

### G.1 PPE

- G.1.1. Standard precautions should be followed when caring for a person who dies of flu.
- G.1.2. If they die during the infectious period full PPE should also be worn for last offices.
- G.1.3. The body should be placed in an impermeable bag prior to transfer to the mortuary.

### G.2 Viewing

- G.2.1. Family should be able to view the body if they wish. If the person died during the infectious period they should wear gloves and gowns. However care should be taken if anyone wishing to view the body is a contact and has symptoms suggestive of flu. If necessary advice should be sought from the infection control team.

### G.3 Post Mortems

- G.3.1. If a full or limited post mortem examination should be performed, this must be discussed first with Infection Control and a Consultant Microbiologist. This is to allow appropriate precautions to be undertaken and to make arrangements for specialist diagnostic services.

**ARRANGEMENTS FOR ADMISSION OF SUSPECTED FLU PATIENTS TO CULM EAST**

Arrangement used for cohorting all patients with newly identified suspected flu on Culm East during 2010/11 flu season.

The following guidance will not apply to children, maternity admissions or oncology/hematology patients or those requiring intensive care, but applies in general to adult patients with suspected flu:

1. Patients flagged as suspicious of flu (typically a fever and respiratory symptoms) prior to or on admission should be admitted into a side room on AMU for initial assessment and then transferred as soon as possible to Culm East if flu like illness confirmed and clinical condition requires admission.
2. Existing inpatients who develop a flu like illness should be isolated in a single room and the infection control team contacted for advice about treatment and referral.
3. The process for transfer to Culm East is by informing the Site Management Team who will arrange for the patient to be moved
4. All patients who are suspected of flu should have a viral throat swab (red top virus swab) and started on antivirals (usually Tamiflu 75mg bd po 5 days) and antibiotics for CAP if appropriate. Treatment should start as soon as possible but wards should not wait for antivirals to arrive before transfer to Culm East.
5. For the period immediately prior to transfer respiratory infection control precautions (surgical mask, gloves, and aprons when within 1 metre of patients and FFP3respirator and eye protection for aerosol generating procedures) should be taken by ward teams for all patients suspicious of flu.

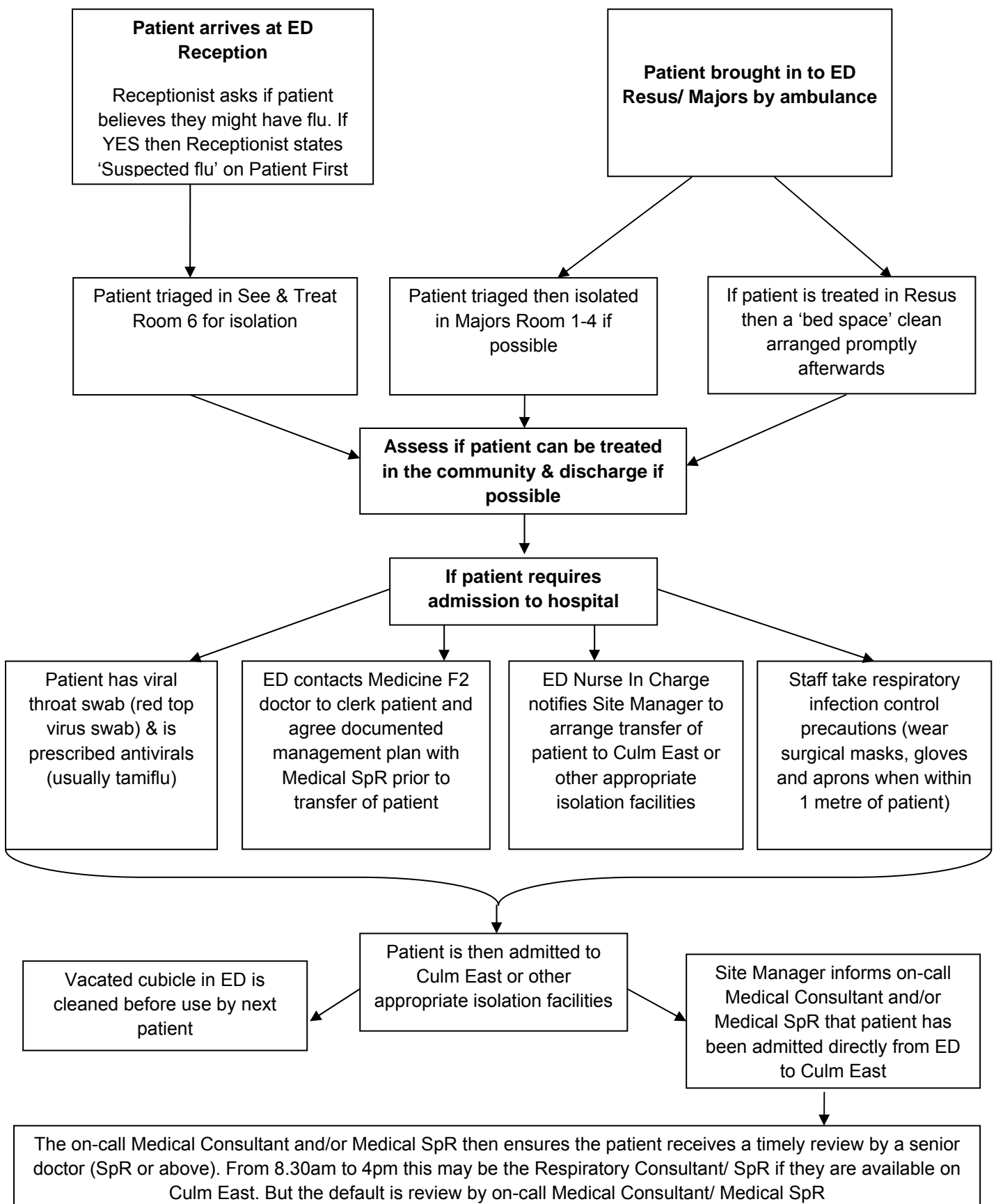
Notes in support of the above:

- a. If Culm East is full the Site Team should move a confirmed flu negative patient who will be completing a 10 day course of prophylaxis (Tamiflu 75mg od po 10 days), or a confirmed positive who has received >5 days treatment after agreement with on-call respiratory physician (nb this applies 24/7). If no bed is available on Culm West where possible these patients should be moved to Culm's twinned wards to ensure continuity of medical care
- b. Culm East will run a respiratory HDU for flu patients, in addition to some residual respiratory HDU capacity on Culm West for existing patients. ICU will remain as the contingency for patients requiring HDU care.
- c. An additional respiratory consultant will be provided for the ward and an extra daytime SHO whenever possible.
- d. It has been agreed that mixed sex bays are permissible on Culm East whilst in use as a cohort area although should be avoided if at all possible.
- e. The respiratory consultants will identify the location for negative cases to be moved to whilst their result is pending.
- f. When telephoning results, Infection Control will ask for these to be documented in the clinical notes to aid communication. Results will also be notified to the Site Team to assist in transfer off Culm East.

Alaric Colville/Judy Potter – Joint Directors of Infection Control  
Nick Withers – Clinical Director, Specialty Medicine

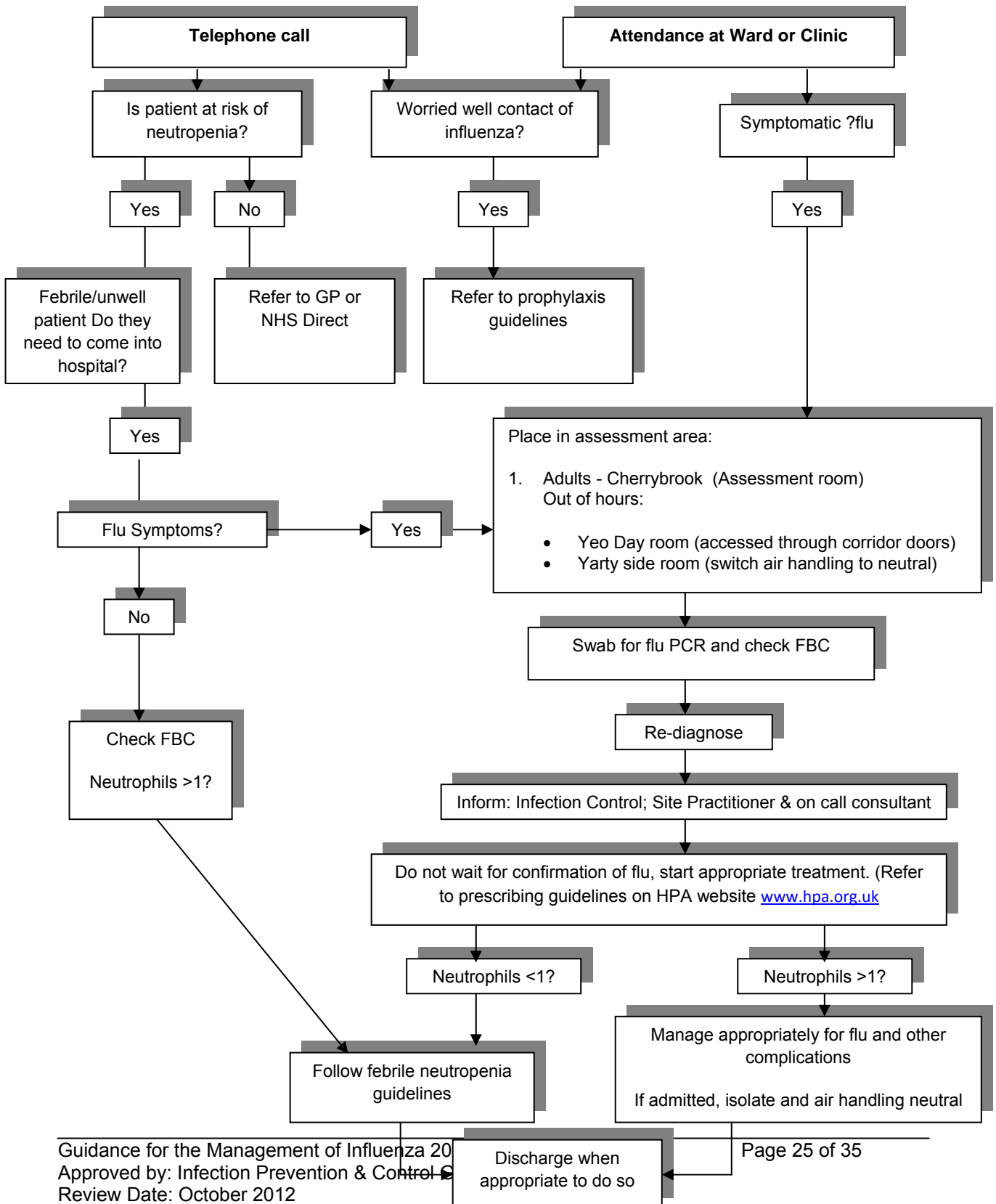
6<sup>th</sup> January 2011

**MANAGEMENT OF SUSPECTED FLU PATIENTS ATTENDING THE EMERGENCY DEPARTMENT (ED)**

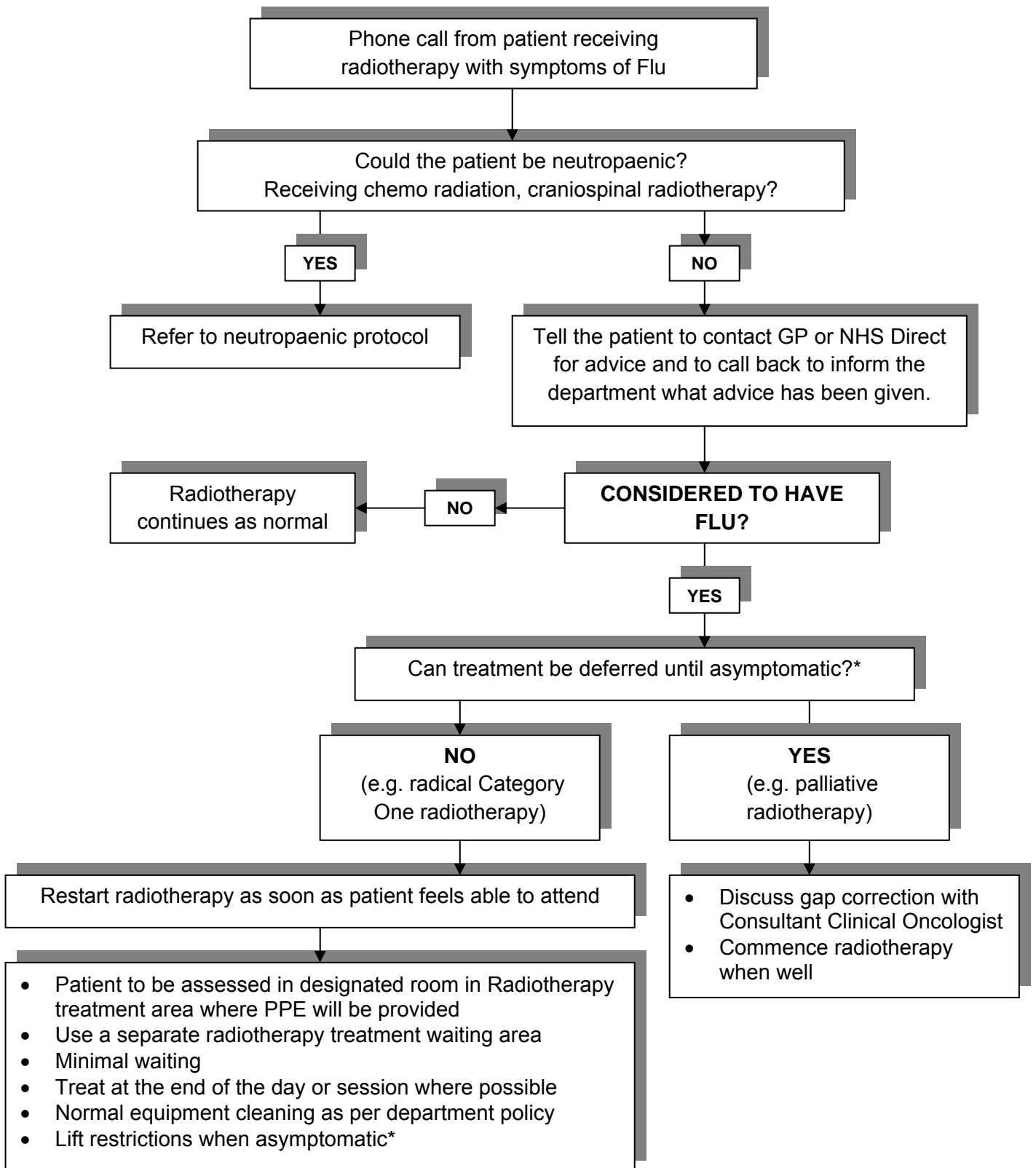


**RISK ASSESSMENT AND MANAGEMENT FOR PAEDIATRIC AND ADULT PATIENTS ATTENDING HAEMATOLOGY/ONCOLOGY (Based on Pandemic Flu Plan Algorithm)**

Currently on treatment OR less than 6 months from treatment completion OR less than 12 months post stem cell transplantation.



**RISK ASSESSMENT AND MANAGEMENT FOR RADIOTHERAPY PATIENTS  
(Based on Pandemic Flu Plan Algorithm)**



\* Virus is usually shed for up to seven days after the onset of symptoms however people can be considered non-infectious once they are asymptomatic

**REFERRAL PATHWAY FOR RESCUE ECMO**

## Indication for ECMO

- Patient with severe hypoxaemia respiratory failure:
- Patient remains critically hypoxaemic (e.g.  $\text{paO}_2 < 6 \text{ kPa}$ ) or inability to maintain adequate gas exchange with protective ventilation
- Severe but potentially reversible respiratory failure
- Ventilation less than 7 days.
- Murray Lung Injury score greater than 3.5 or the  $\text{pH} < 7.1$  for hypercarbic patients.
- No contraindication to limited heparinisation
- No significant co-morbidity.

If patient fulfils above criteria then discuss patient with local Tertiary Critical Care Unit (BRI, Bristol or Derriford Hospital, Plymouth) to discuss current management, identify if other options exist to improve gas exchange or confirm that referral to National ECMO centre is appropriate.

If ECMO agreed to be indicated then local unit will contact National ECMO service at Glenfield Hospital, Leicester. If they confirm ECMO indicated they will arrange admission to one of the national ECMO beds.

### Murray Lung Injury Score

	Finding	Value	
<b>Chest X Ray appearance</b>	no alveolar consolidation	0	
	consolidation 1 quadrant	1	
	consolidation 2 quadrants	2	
	consolidation 3 quadrants	3	
	consolidation 4 quadrants	4	
<b>Hypoxaemia (P:F ratio) kPA</b>	PaO <sub>2</sub> /FIO <sub>2</sub> > 40	0	
	PaO <sub>2</sub> /FIO <sub>2</sub> 30 - 39.9	1	
	PaO <sub>2</sub> /FIO <sub>2</sub> 23.3 - 29.9	2	
	PaO <sub>2</sub> /FIO <sub>2</sub> 13.3 - 23.2	3	
	PaO <sub>2</sub> /FIO <sub>2</sub> < 13.2	4	
<b>PEEP</b>	PEEP ≤ 5 cm H <sub>2</sub> O	0	
	PEEP 6 - 8 cm H <sub>2</sub> O	1	
	PEEP 9 - 11 cm H <sub>2</sub> O	2	
	PEEP 12 - 14 cm H <sub>2</sub> O	3	
	PEEP ≥ 15 cm H <sub>2</sub> O	4	
<b>Compliance</b> Tidal volume ÷ Peak Pressure-PEEP	≥ 80 mL/cm H <sub>2</sub> O	0	
	60 - 79 mL/cm H <sub>2</sub> O	1	
	40 - 59 mL/cm H <sub>2</sub> O	2	
	20 - 39 mL/cm H <sub>2</sub> O	3	
	≤ 19 mL/cm H <sub>2</sub> O	4	
<b>Total score</b>	<b>Total points ÷ 4 (range 0-4)</b>		

#### Contact phone numbers for Glenfield, fax and e mail

Glenfield Switchboard 0116 2871471 ask for ECMO coordinator  
 Richard Firmin: [richard.firmin@uhl-tr.nhs.uk](mailto:richard.firmin@uhl-tr.nhs.uk) tel: 07921 545572  
 Giles Peek: [giles.peek@uhl-tr.nhs.uk](mailto:giles.peek@uhl-tr.nhs.uk) tel: 07900 802644  
 Chris Harvey: [chris.harvey@uhl-tr.nhs.uk](mailto:chris.harvey@uhl-tr.nhs.uk) tel: 07967 105444  
 Gail Faulkner: [gail.faulkner@uhl-tr.nhs.uk](mailto:gail.faulkner@uhl-tr.nhs.uk) tel: 07921 545703  
 ECMO Office tel: 0116 250 2380 Fax: 0116 2502374  
 ECMO Fellows Office tel: 0116 256 3105  
 Adult Intensive Care Unit: 0116 256 3484

#### Contact phone numbers for Plymouth

Derriford Hospital switchboard 01752 202082 ask for ICU consultant  
 General Intensive Care Unit (Penrose ward) 01752 431418  
 Peter Macnaughton [peter.macnaughton@phnt.swest.nhs.uk](mailto:peter.macnaughton@phnt.swest.nhs.uk) 07979804680

**INFORMATION FOR PATIENTS IN THE COMMUNITY****Flu Symptoms**

- sudden fever - a temperature of 38°C (100.4°F) or above
- dry, chesty cough
- headache
- tiredness
- chills
- aching muscles
- limb or joint pain
- diarrhoea or upset stomach
- sore throat
- runny or blocked nose
- sneezing
- loss of appetite
- difficulty sleeping

Symptoms will usually peak after two to three days and you should begin to feel much better within five to eight days. However, you may have a lingering cough and still feel very tired for a further two to three weeks.

**When to contact your GP**

If you have **flu-like symptoms** and:

- 65 years of age or over
- pregnant
- have a long-term medical condition, such as diabetes, heart disease, lung disease, kidney or neurological disease
- have a weakened immune system (the body's natural defence against infection and illness)

If you have **flu** and any of the following applies:

- symptoms have got much worse and include shortness of breath, chest pain or coughing up blood, or developed other symptoms that are not typical of flu, such as a rash
- symptoms have lasted for longer than a week
- a medical condition is making the flu worse

**Treating flu**

If you have flu, the chances are that you'll be able to get well by looking after yourself at home:

- rest
- keep warm
- drink plenty of water to avoid dehydration
- try to take paracetamol or anti-inflammatory medicines such as ibuprofen to lower a high temperature and relieve aches

## Antivirals

If you are in a 'high-risk' group and are more likely to suffer complications from flu, your doctor may prescribe antiviral medication.

You may be prescribed antivirals if you are:

- pregnant
- 65 or over
- or if you have:
  - lung disease
  - heart disease
  - kidney disease
  - liver disease
  - neurological disease such as motor neurone disease, Parkinson's or multiple sclerosis
  - a weakened immune system
  - diabetes

Antivirals will not cure flu but they will help to:

- reduce the length of time you are ill by around one day
- relieve some of the symptoms
- reduce the potential for serious complications.

Antivirals work by stopping the virus from multiplying in the body.

## Antibiotics

Antibiotics are not prescribed for flu as they have no effect on viruses. However, occasionally it may be necessary to treat complications of flu, especially serious chest infections or pneumonia, with a course of antibiotics.

## Antiviral prophylaxis

Used to prevent flu if **all** of the following apply:

- Flu A and B is circulating.
- a medical condition such as diabetes, heart disease, lung disease or kidney disease.
- aged 65 or over.
- in contact with someone with a flu-like illness and can start antiviral treatment within 48 hours.
- have not been effectively protected by vaccination e.g.:
  - Have not been vaccinated since last winter.
  - Cannot be vaccinated, or have been vaccinated but it hasn't taken effect yet.
  - Have been vaccinated for a different form of flu virus.

## Vaccination

Annual flu vaccination is available free from October each year to the following high-risk people, to protect them from flu:

- people aged 65 or over
- pregnant women

- people with a serious medical condition
- people living in a residential or nursing home
- carers of people at risk of complications of the flu
- healthcare professionals

## USEFUL CONTACTS

On call Microbiologist - daytime	Bleep 176
Duty Consultant Microbiologist	Page via switchboard
Senior Nurse Infection Control	Page #6579 or via switchboard
Infection Control Nurses' Office	Ext. 2355 (Mon-Fri 08.30 – 16.30hrs)
Site Practitioner	Bleep #6888 or Bleep 217
Senior Nurse on-call	Page via switchboard
Matron general medicine	#6490 or via switchboard
Senior Paediatric Nurse on-call	Page via switchboard
Senior Manager on-call	Page via switchboard
AMU Admissions Co-ordinator	Bleep 513
CCDC (and Health Protection Unit)	01803 861833



### COMMUNICATION PLAN

The following action plan will be enacted once the guidance etc. has been approved.

<b>Staff groups that need to have knowledge of the guidance</b>	Clinical Directors, Clinical Divisional Managers, Lead Nurses, Senior Matrons, Matrons,
<b>The key objectives</b>	To provide information and guidance to ensure the Trust is able to respond to the consequences of rising numbers of patients with seasonal 'flu and to ensure patients with 'flu are managed safely and effectively.
<b>How new staff will be made aware of the guidance, e.g. induction process, cascade etc.</b>	Cascade when influenza virus A or B is circulating and there is a substantial likelihood that people presenting with an influenza-like illness are infected with influenza virus.
<b>Training available to staff</b>	N/A
<b>Any other requirements</b>	N/A



## BRIEFING SHEET FOR MANAGERS

### GUIDANCE FOR THE MANAGEMENT OF INFLUENZA

#### 1. OVERVIEW OF THE GUIDANCE

- 1.1. The purpose of this guidance is to provide information and guidance to ensure the Trust is able to respond to the consequences of rising numbers of patients with seasonal 'flu and to ensure patients with 'flu are managed safely and effectively.

#### 2. CHANGES TO EXISTING POLICY ETC.

- 2.1 Not applicable. New guidance

#### 3. SPECIFIC ISSUES TO BE RAISED WITH STAFF

##### Clinical Staff:

- Use of PPE in cohort areas and non-cohort areas (including fit-testing)
- Symptoms
- Need to test and record that test has been requested (especially admission areas)
- Times of test runs and return of results (As cases rise, increase test runs to daily)
- Treatment (e.g. anti-virals)
- Criteria and areas for isolation/cohorting
- Need for wards to identify patients with flu on Ward Whiteboard using Influenza indicator flag
- Need to move patients promptly out of side rooms when not infected and test is negative

##### ITU:

- Review arrangements with Bramble HDU to co-ordinate care delivery to manage extreme demand on services
- Review staffing contingency plans - RD&E, Bank and agency staff
- Review Regional ITU and ECMO arrangements and contingency plans
- Review arrangements for cohorting influenza patients in Rooms 11-15:
  - Tested 2010-2011 season and no evidence of spread of infection
  - Patients intubated and on high doses of antiviral with excellent hand and environmental hygiene precautions and PPE practice can be safely managed

**Paediatrics:**

- Review arrangements with ITU to co-ordinate care delivery to manage extreme demand on services
- Review paediatric medical staffing to provide cover for Bramble and ED
- Review Regional PICU arrangements and contingency plans

**Medicine:**

- Review Culm Ward (or designated cohort ward) procedure for admission of suspected flu patients
- Review need for medical cover over 24 hour period to support discharge of patients
- Review discharge criteria and information for patients re ongoing support from Primary Care

**Pharmacy:**

- Check stocks of anti-virals

**Occupational Health:**

- Review information on IaN
- Review advice for pregnant staff regarding working with flu patients

**4. MANAGER AND STAFF ACTION**

- 4.1 Refer to the guidance and maintain awareness of updated guidance

**5. ISSUES FOLLOWING IMPACT ASSESSMENTS**

- 5.1 None

**6. LOCATION OF HARD/ELECTRONIC COPY OF THE GUIDANCE**

- 6.1 Infection Control pages on IaN.