Welsh Healthcare Associated Infection Programme	
Managing Seasonal Influenza: Infection Prevention and Control Guidance in Healthcare Settings	
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Purpose and Summary of Document: Guidance on the infection prevention and control management of seasonal influenza in healthcare setting.	

*see Appendix A: glossary and definitions

Introduction:

This guidance is for seasonal influenza and is intended to supersede previous guidance including that which was given for the 2009/10 H1N1* influenza pandemic and 2010/11 H1N1* 'second wave'. Cases of seasonal influenza will arise and need routine management every year, whereas pandemic strains are extremely rare and require unusual and necessarily extra-cautious precautions. In the unlikely event we enter a pre-pandemic or pandemic phase this guidance itself may be superseded. This guidance represents the best currently available evidence.

Key Messages:

- Vaccination of frontline healthcare workers and people in high risk groups is the most important measure in preventing seasonal influenza infection
- Standard Precautions* must be maintained at all times in all healthcare settings including when managing known or suspected cases of influenza
- Hand hygiene is a very important defence against acquisition of influenza.
- Reinforce respiratory hygiene/cough etiquette* with all patients
- In addition Droplet Precautions* are required for all cases of known of suspected influenza, until either the diagnosis has been excluded or the patient is no longer deemed infectious (see below for applying Droplet Precautions* in different healthcare settings)

Precautions in Specific Healthcare Settings:

<u>GP surgeries/other ambulatory/domiciliary/ out-patient settings:</u>
(These precautions are also appropriate in nursing and care home settings)

- Staff and at-risk groups should be vaccinated
- Droplet Precautions*
    - Staff with direct patient contact and patients age 65 and over and in at-risk groups should be vaccinated
    - Droplet Precautions* are recommended for staff in these care settings.
    - Emphasise importance of effective hand hygiene and respiratory hygiene/cough etiquette to staff and patients.
    - Make alcohol hand rub available to staff and patients
    - Provide patients with information about influenza, vaccination and respiratory hygiene/cough etiquette

Out-patient settings:

- In addition consider minimising spread of respiratory viruses in the waiting area by providing face masks* for patient use

*see Appendix A: glossary and definitions

- Consider whether non-urgent appointments can be deferred or patient seen in their own home

A&E / Admissions Unit

- Frontline staff and patients in at-risk groups should receive vaccination

- Droplet precautions*
  - If 'presumed influenza' from community ensure patient is isolated in a single room if possible, or if there are several cases, cohorting* of respiratory cases may be appropriate – please discuss with Infection prevention and control
  - Staff to wear FRSM*, gloves and aprons
  - Eye protection if risk of 'splash' to the face/eyes (from e.g. coughing/sneezing)
  - Follow procedure for removal of PPE* (Appendix C)
  - Patient to be asked to wear mask* in communal areas / waiting rooms / during transfer to other areas of the hospital

- If uncomplicated mild disease, consider antiviral treatment, as per local protocols, for those in NICE defined at-risk groups and self isolation/care in normal residence

Admitted patients (in-patients):

- Patients at risk of severe disease / complications as per NICE guidance

  - chronic respiratory disease (including asthma and chronic obstructive pulmonary disease)
  - chronic heart disease
  - chronic renal disease
  - chronic liver disease
  - chronic neurological conditions
  - diabetes mellitus
  - Pregnancy

People who are aged 65 years or older and people who might be immunosuppressed are also defined as 'at-risk' for the purpose of this guidance.

- If severe disease/patient requiring admission, test and commence anti-viral treatment according to local protocols(**do not wait for the results before starting anti-viral therapy**)
  - Send nose/throat swab (dry or flocked swab) to microbiology laboratory clearly indicating clinical history and onset of influenza like symptoms.
  - Tests will be run on specimens taken within 5 days of onset of symptoms

*see Appendix A: glossary and definitions

  - Testing will NOT be done on specimens taken more than 5 days post onset of symptoms or where clinical details / date of symptom onset is not documented

- Staff and at risk groups should be vaccinated

- Droplet Precautions*
  - Transfer to receiving ward/unit with mask* on patient if tolerated
  - Isolate patient in single room where possible or if there are several cases cohorting* of cases of suspected influenza may be appropriate – please discuss with Infection Prevention and Control
  - See Appendix D for advice about patient placement and prioritisation decisions
  - PPE* for staff FRSM*, gloves and aprons (eye protection if risk of 'splash') in patient room
  - For Aerosol Generating Procedures (AGPs)* – FFP3 masks* (fit test required), gowns, gloves and eye protection if risk of splash for all staff present – minimise staff present to essential only
  - Follow procedure for removal of PPE* (Appendix C)
  - Restrict visiting to minimal/essential only while precautions in place. Visitors involved in care should wear PPE* as would staff, visitors not giving care but having social contact (e.g. hand holding) should be informed that PPE* is available to them and of the risk of transmission, but wearing should not be enforced. Visitors should be reminded of the need for effective hand hygiene. Visitors should not be present during AGPs (in circumstances where visitors are unwilling to leave, e.g. parent/child, they must be fully informed of the risk of remaining).

<u>Critical Care Settings (level 2 and 3 care)</u>

- Droplet Precautions*
  - As described above under admitted patients (in-patients)
  - Response to treatment, resolution of symptoms may be less clear in critical care settings. Decisions to discontinue precautions (see below) should be the subject of a multidisciplinary agreement including the responsible clinician(s) and microbiology and should be communicated clearly and documented.
  - If a patient's condition deteriorates, after initial clinical improvement, requiring re-admission to level2/3 care, this is most likely to be due to secondary complications of influenza. In this case, assuming the conditions for discontinuing additional precautions have been met, Standard Precautions* only are required. See below and consider discussion with local infection prevention/microbiology team.

Discontinuing precautions

- The majority of patients with influenza will no longer be infectious beyond 5 days. Clinical response/improving condition is associated with the loss of virus and decreased infectiousness. Infection prevention and control precautions may

be discontinued at day 5 of: admission/after onset of symptoms/treatment with Oseltamivir, unless there is a failure to respond to treatment and/or underlying conditions that may prolong the shedding of virus e.g. severe immunosuppression* (see Appendix B for definition). Such cases will be considered on a case by case basis and should be discussed with your microbiology/virology/infection prevention and control service.

- Repeat testing is not generally required and will NOT be undertaken unless discussed with a Microbiology / Virology Consultant or where agreed protocols are in place in specific specialties.

Pregnant staff (or others in defined risk groups)

- Vaccination is the first and most important measure in preventing seasonal influenza in individuals in risk groups
- During a time of increased seasonal influenza activity, staff are at least equally as likely to be exposed to influenza outside of work as they are in the work setting
- All staff, including those in risk groups must adhere to the required Standard and Droplet Precautions* when in contact with known or suspected influenza cases to minimise their risk of acquisition
- Organisations may decide, despite vaccination and appropriate PPE*, for pragmatic reasons, to restrict those in risk groups from direct care for known or suspected influenza cases

*see Appendix A: glossary and definitions

Appendix A - glossary/definitions of terms

Aerosol Generating Procedures (AGPs)	Procedures that may produce higher concentrations of infectious respiratory particles than coughing, sneezing or talking. On the best currently available evidence, examples include: Bronchoscopy Sputum induction Tracheal intubation Post mortem procedures involving high speed devices Cardio-pulmonary resuscitation High frequency oscillating ventilation Non-invasive ventilation Note this list is not exhaustive, local risk assessment may identify additional procedures for which AGP precautions are indicated These procedures are not normally considered to be aerosol generating: Nebulisation Routine tracheostomy care[1] (FFP3 may be considered, following local risk assessment, if the procedure is deemed likely to cause prolonged or vigorous coughing)
Contact Precautions	Contact precautions are infection control measures (to be used in addition to Standard Precautions* which are designed specifically to prevent and control the transmission of infectious agents spread by direct and indirect contact. Including: isolation, hand hygiene, use of personal protective equipment (PPE*), care of equipment and environment including decontamination, safe handling of linen and waste
Cohort/Cohorting	Placing patients with the same known or sometimes suspected condition together in an area separate from other patients not known or suspected of having the condition.
Droplet Precautions	Transmission based precautions for organisms transmitted via large particle droplets. These include, in addition to Standard Precautions for all patients at all times: Wearing a fluid repellent surgical mask* when within 1 metre of the patient (it may be more practical to don the mask on entering the patient room) Wearing an FFP3 mask* when performing or present during aerosol generating procedures*
FFP3 mask	Particulate filtering mask to EN 149:2001 standard and CE marked
Fluid Resistant Surgical	Type II**R** Surgical mask with fluid repellent properties (EN

*see Appendix A: glossary and definitions

Mask (FRSM)	14683)
H1N1	Influenza A strain responsible for 2009/10 and 2010/11 pandemic influenza
Mask (for use on patients)	Any standard 'surgical' type mask (FFP3 is not appropriate)
Personal Protective Equipment (PPE)	Gloves, aprons, gowns, facial protection, masks or respirators (filtering masks e.g. FFP3) used for standard or transmission based precautions*
Respiratory Hygiene/Cough Etiquette	Cover nose and mouth with disposable single-use tissues when sneezing, coughing, wiping and blowing nose Dispose of used tissues into the nearest waste bin Wash hands after coughing, sneezing, using tissues, or after any contact with respiratory secretions and contaminated objects Keep hands away from the mucous membranes of the eyes and nose. Certain patients/clients (e.g. the elderly, children) may need assistance with containment of respiratory secretions; those who are immobile will need a receptacle (e.g. a plastic bag) readily at hand for the immediate disposal of used tissues and offered hand hygiene facilities
Severe immunosupression	See Appendix B
Standard Precautions	Standard Precautions are infection prevention and control precautions to be used at all times and in all settings to reduce the risk of transmission of micro-organisms from both recognised and unrecognised sources of infection. Examples include hand hygiene and the use of PPE* to prevent contact with body fluids. See: http://www.wales.nhs.uk/sites3/page.cfm?orgId=379&pid=38960#b
Transmission Based Precautions	Transmission Based Precautions are a set of measures that should be implemented when patients/clients are either suspected or known to be infected with a specific infectious agent. Transmission Based Precautions are categorised according to the route of transmission of the infectious agent such as droplet, contact and/or airborne.

Notes:

1. For the purpose of this guidance, routine tracheostomy care includes, dressing change, cleaning around the stoma site and replacement of ties/tapes/inner tubes.

Appendix B: definition of severe immunosuppression* (adapted from CDC 'Yellow Book' – health advice for international travel 2012)

*see Appendix A: glossary and definitions

Severe Immune Compromise (Non-HIV)

Severely immunocompromised people include those who have active leukemia or lymphoma, generalized malignancy, aplastic anemia, graft-versus-host disease, or congenital immunodeficiency; others in this category include people who have received recent radiation therapy, people who have had solid-organ or bone marrow transplants, within 2 years of transplantation, or transplant recipients who are still taking immunosuppressive drugs.
For solid-organ transplants, the risk of infection is highest in the first year after transplant,

People taking any of the following categories of medications are considered severely immunocompromised:

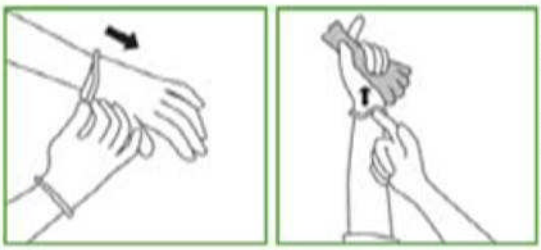
High-dose corticosteroids—Most clinicians consider a dose of either >2 mg/kg of body weight or ≥20 mg per day of prednisone or equivalent in people who weigh >10 kg, when administered for ≥2 weeks, as immunosuppressive. **Alkylating agents** (such as cyclophosphamide)
Antimetabolites (such as azathioprine, 6-mercaptopurine)
Transplant-related immunosuppressive drugs (such as cyclosporine, tacrolimus, sirolimus, mycophenolate mofetil, and mitoxantrone)
Cancer chemotherapeutic agents, excluding tamoxifen but including low-dose methotrexate weekly regimens, are classified as severely immunosuppressive, as evidenced by increased rates of opportunistic infections and blunting of responses to certain vaccines among patient groups.
TNF blockers [and related biologic agents] such as etanercept, rituximab, adalimumab, and infliximab blunt the immune response to certain vaccines and certain chronic infections. When used alone or in combination regimens with methotrexate to treat rheumatoid disease, TNF blockers were associated with an impaired response to influenza vaccine and to pneumococcal vaccine as well.
Despite measurable impairment of the immune response, postvaccination antibody titers were often sufficient to provide protection for most people; therefore, treatment with TNF blockers does not preclude immunization against influenza.

Severe Immune Compromise Due to Symptomatic HIV/AIDS

Knowledge of the HIV-infected individual's current CD4 T-lymphocyte count is necessary. HIV-infected people with CD4 cell counts <200/mm^3, history of an AIDS-defining illness, or clinical manifestations of symptomatic HIV are considered to have severe immunosuppression **Appendix C –removal of PPE***

*see Appendix A: glossary and definitions

2. Removing Personal Protective Equipment (PPE)



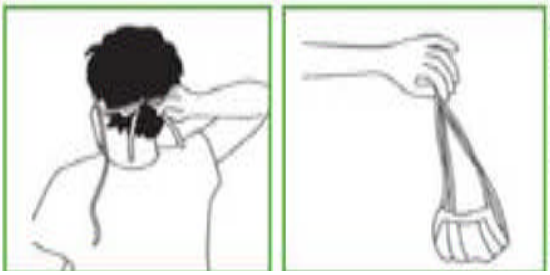
Gloves
- Outside of gloves are contaminated
- Grasp the outside of the glove with the opposite gloved hand; peel off
- Hold the removed glove in the gloved hand
- Slide the fingers of the ungloved hand under the remaining glove at the wrist
- Peel the second glove off over the first glove
- Discard into an appropriate lined waste bin

Apron
- Apron front is contaminated
- Unfasten or break ties
- Pull apron away from neck and shoulders lifting over head, touching inside only
- Fold or roll into a bundle
- Discard into an appropriate lined waste bin

Gown
- Gown front and sleeves are contaminated
- Unfasten neck, then waist ties
- Remove gown using a peeling motion; pull gown from each shoulder toward the same hand
- Gown will turn inside out
- Hold removed gown away from body, roll into a bundle and discard into an appropriate lined waste bin or linen receptacle

NOW PERFORM HAND HYGIENE – ALCOHOL HAND RUB

Eye Protection (Goggles/Face Shield)
- Outside of goggles or face shield are contaminated
- Handle only by the headband or the sides
- Place in designated receptacle for reprocessing or into an appropriate lined waste bin



Surgical Mask (or respirator)
- Front of mask/respirator is contaminated – do not touch
- Unfasten the ties – first the bottom, then the top
- Pull away from the face without touching front of mask/ respirator
- Discard into an appropriate lined waste bin

- **Perform hand hygiene immediately on removal**

Adapted from: Welsh Standard Precautions Model Policy and WHO (2007) Epidemic and Pandemic-Prone Respiratory Diseases Guidance

*see Appendix A: glossary and definitions

Appendix D – patient placement and prioritisation in in-patient settings:

This guidance should complement local policies and procedures for prioritisation of isolation facilities and escalation of unresolved isolation requirements.

On admission the admitting team doctors need to develop a working diagnosis and determine whether or not a patient has a possible infectious disease, such a diagnosis may include, for example, infectious respiratory influenza like illness or infectious diarrhoea. If an infectious disease is thought to be a possible diagnosis, then this must be clearly communicated to nursing and other staff and then onwards to those staff responsible for effective patient placement.

- Your Medical Microbiology and/or Infection Prevention and Control Team can provide advice and support regarding patient management, infection prevention and control measures, patient placement and outbreak identification and management, but may not be in a position to assess each individual patient for diagnostic purposes.

- Whilst bearing in mind any existing local priorities, patients admitted with possible infectious respiratory influenza like illness and those with infectious diarrhoea should be priorities for isolation during this winter season.

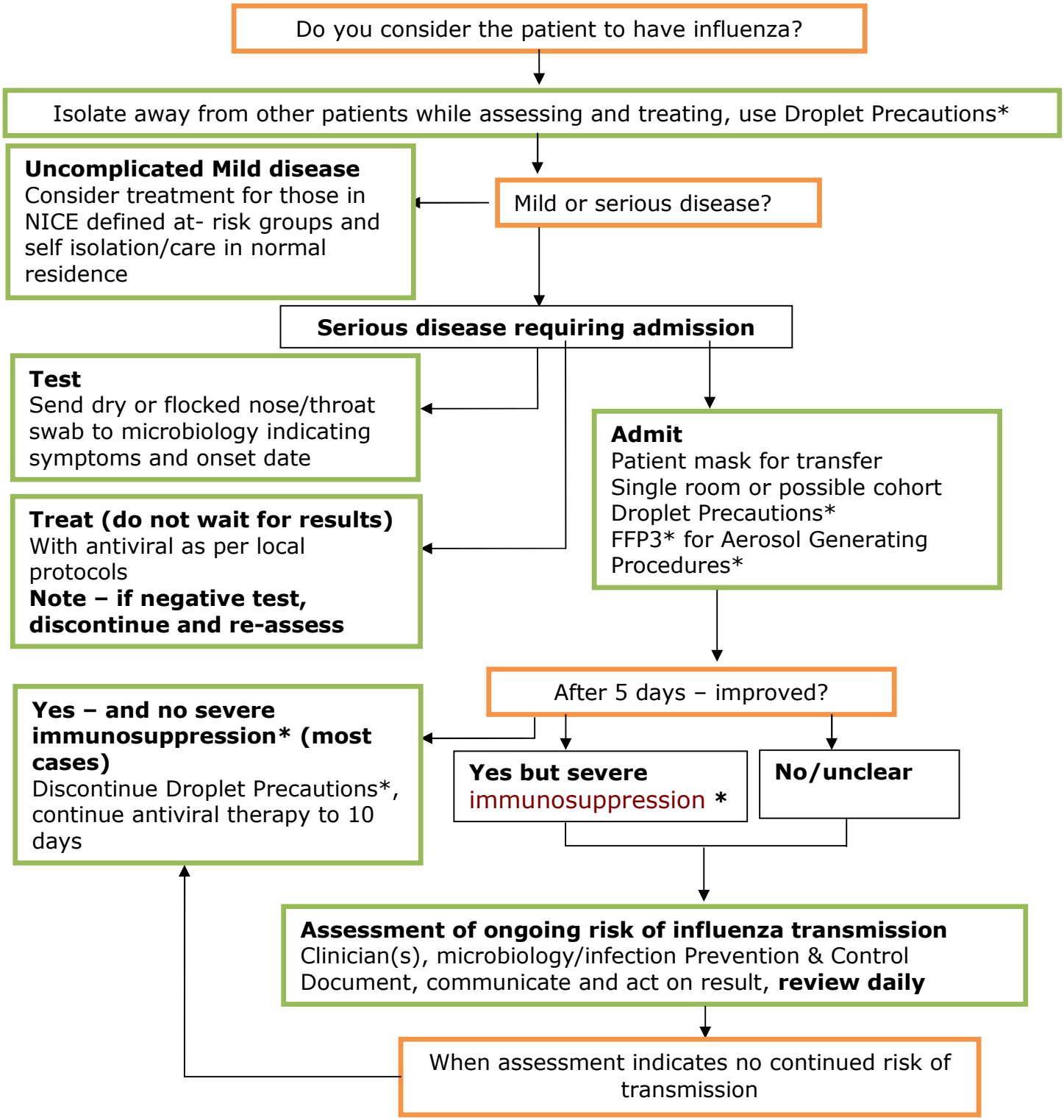
- If cohorting of patients is necessary due to admission pressures and lack of isolation facilities, consideration may be given to patients with suspected influenza-like illness being cohorted together; likewise patients with possible infectious diarrhoea in another cohort. The risk of cross infection due to different causative agents within the cohort must however be considered.

- Once a definitive diagnosis has been achieved, attempts should be made to isolate appropriately. Cohorting of patients with the same confirmed diagnosis of infectious disease may be considered under similar circumstances to those described above.

    - Every effort must be made to isolate infectious patients, as the cost of spreading these infections to other patients in the hospital can lead to severe compromise of services when wards have to be closed to contain spread. However if bed pressures are such that a patient cannot be isolated, and where not admitting, or continuing to manage them an admission area / trolley bay would compromise their care, patients may have to be admitted to a non-cohort area. Under such circumstances patients must be nursed with strict infection prevention and control measures as far as can be achieved in the bed space:Patient must be limited as far as possible to the bed space.
    - The appropriate precautions (Contact Precautions* or Droplet Precautions*) should be maintained

*see Appendix A: glossary and definitions

Appendix E – quick guide to managing seasonal influenza 2011/12



Notes

1. Standard Precautions must be maintained at all times
2. Document and communicate decisions of assessment and necessary precautions to all appropriate staff

References and further reading

*see Appendix A: glossary and definitions

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*see Appendix A: glossary and definitions

World Health Organisation (2007) Epidemic-prone & pandemic-prone acute respiratory diseases; Infection prevention & control in health-care facilities. (available at http://www.who.int/csr/resources/publications/WHO_CDS_EPR_2007_8/en/index.html)

*see Appendix A: glossary and definitions