Prevention and control of influenza in an acute healthcare trust

Maintaining a high standard of infection prevention and control (IPC) in an acute trust during the influenza (flu) season can help limit the spread of viruses. With support from the IPC team, staff need to put in place: early detection via a viral throat swab or clinical specimen; 'cohorting' of affected patients; effective hand hygiene; appropriate use of personal protective equipment; effective cleaning to reduce the environmental reservoir of the virus; and good communication between the IPC team and other services.

What is flu?
Flu is an acute viral illness. Its symptoms, which can be mild or severe, include cough, fever, sore throat, runny nose and muscle aches. Serious complications include the exacerbation of underlying illnesses such as bronchitis and pneumonia (Heymann, 2015). Common infectious agents that cause seasonal flu include influenza viruses A and B, of which both can cause epidemics (Heymann, 2015).

The flu virus can spread through droplets, by airborne dissemination or through physical contact (Public Health England, 2016). Droplets can disperse when an infectious person talks, coughs or sneezes, or when aerosol-generating procedures (AGPs) such as non-invasive ventilation and sputum induction are undertaken. Droplets only remain in the air for a short time, but can travel up to two metres and be inhaled by other people or land on their mucous membranes. Flu viruses can live on hard surfaces for several hours, so good hand hygiene is important, alongside thorough cleaning of the environment to avoid spread (PHE, 2016).

Winter 2017-18 flu figures
This winter, seasonal flu levels have increased compared with last year, with a 78% increase in GP visits from symptomatic patients, a 50% increase in hospitalisations and a 65% increase in admissions to intensive care. This article details a range of infection prevention and control measures deployed at Nottingham University Hospitals.

Fig 1 shows the GP consultation rates for influenza in the winters of 2010-11, 2016-17 and 2017-18 (PHE, 2018). In 2010-11, the rate was very high in week 2. At the same point this winter, the rate was at a medium level but the overall trend up, indicating that the flu season has not yet peaked.

There is a national campaign to promote vaccinations against flu and encourage good hand hygiene. The ‘Catch it, bin it, kill it’ campaign has also been relaunched.
Annual flu vaccination
Asymptomatic shedding of the virus can occur (Heymann, 2015), so there is a risk of transmission from people who are not aware that they are infectious. Staff should therefore protect themselves and their patients by having the annual flu vaccine. At Nottingham University Hospitals (NUH), designated ward staff are ‘peer vaccinators’ and promote the flu vaccine. As staff do not have to leave the ward to get vaccinated, it is easy for them to receive the flu jab. The trust’s occupational health team provides incentives such as ‘flu fighter’ stickers and cereal bars.

This winter, we organised drop-in flu vaccine clinics for staff at the main entrance of the hospital. Screen savers were installed on computers to remind staff of the importance of vaccination, with messages being updated in line with the current flu situation.

Isolation or ‘cohorting’ of patients
Flu symptoms may be clinically indistinguishable from those caused by other respiratory viruses, so it is important that patients with suspected flu are identified as soon as possible to optimise patient flow and use of single rooms. Testing for flu can be done via a reverse transcription polymerase chain reaction assay or through isolation of the virus from a clinical specimen (Heymann, 2015). Patients diagnosed with flu or suspected of having flu based on a medical assessment should be isolated in a single room and respiratory spread precautions should be taken (PHE, 2016).

At NUH, this winter, the number of flu cases has exceeded the number of single rooms available. When this occurs it may be necessary to cohort cases according to local policy. Staff should also seek advice from a medical microbiologist or virologist on treatment and prophylaxis.

Droplet/respiratory precautions
Staff need to put in place droplet/respiratory precautions for symptomatic patients. These include the use of disposable gowns and aprons, and a fluid-repellent face mask, when dealing with patients and/or their environments (PHE, 2016). The use of a filtering face piece level 3 (FFP3) mask is sometimes required for AGPs (PHE, 2016). Our local guidance requires staff to wear an FFP3 mask (tested for fit on the person) during intubation and tracheostomy care. The choice of face mask has significant cost implications: an FFP3 mask costs approximately £2.68, versus £0.15 for an 11R fluid-repellent surgical face mask. Staff need to be aware of their local policy, understand when an FFP3 mask is required and check that their mask fits them so that it provides adequate protection (Coia et al, 2013).

“Staff should protect themselves and their patients by having the annual flu vaccine”

Hand hygiene
Good hand hygiene, consisting of hand washing or disinfection, decreases the transmission of infectious organisms (Loveday et al, 2014). The World Health Organization’s Five Moments for Hand Hygiene (WHO, 2009) should be promoted to all staff working in clinical roles. Alcohol rub should be available at the end of every patient bed so staff have an alternative hand decontamination facility in addition to soap and water.

Environmental cleaning
According to Heymann (2015), in about a quarter of flu cases, the source of infection is unclear, one of the possible sources being a contaminated environment. This is supported by Cheng et al (2015), who suggest that the risk of pathogen transmission is increased in the hospital environment through hand contact with items such as curtains, bedside tables, beds and bedside lockers.

When there is a rise in the number of infections, cleaning should be increased to reduce the risk of environmental contamination (Loveday et al, 2014). Our local policy for respiratory viruses includes the use of chlorine-based disinfection and changing bedside curtains once respiratory precautions have been discontinued.

Communication
Good communication between the IPC and other clinical teams is of paramount importance during the flu season. To facilitate patient flow and optimise bed capacity, we regularly liaise with the bed management team, cleaning services and ward staff. All parties must stay up-to-date on the latest developments around flu and IPC advice. In addition, we use screen savers and e-bulletins to keep staff informed, while social media has been used to engage with both staff and public on key IPC messages. NT

References

Source: adapted from PHE (2018)

Fig 1. GP consultation rates for ILI in England

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● Use of respiratory and facial protection
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