Contact transmission
Contact transmission is an important means by which influenza viruses are transmitted, especially via contaminated hands which touch the face and transfer virus to the conjunctiva or to mucous membranes of the nose or mouth.

Direct or indirect contact transmission can easily occur, for instance, when shaking hands with an infected person whose hands are contaminated (as a result of using them to cover their mouth and nose when coughing). Hands can also become contaminated by touching contaminated objects, such as stainless steel counters, table tops and plastic washing up bowls, where the virus can survive for up to 24 hours (Weber and Stilianakis, 2008).

Research has suggested that influenza viruses can survive for several days on bank notes. Investigators said that “considering that hundreds of billions of banknotes are probably exchanged every day worldwide, infection from hands contaminated with virus picked up from virus-contaminated banknotes cannot be totally ignored” (Thomas et al, 2008).

Airborne transmission
Although aerosol-generating procedures, such as endotracheal intubation, suctioning, nebuliser treatment or bronchoscopy could increase the risk of droplet nuclei (1–10µm in diameter) transmission, there is no reliable evidence that in other circumstances small particle aerosols are significantly involved in influenza virus transmission (Brankston et al, 2007; Lemiex et al, 2007).

However, some scientific opinion cautions against dismissing completely the significance of airborne transmission of influenza viruses (Atkinson and Wein, 2006). New and evolving research can challenge many of the truisms currently accepted in this fast moving field.

Influenza virus survival and inactivation
Influenza viruses are susceptible to a wide range of detergents and disinfectant chemicals (especially chlorine solutions). They are therefore easier to kill in the environment than many other types of viruses and other micro-organisms.

Influenza A virus can survive for at least five minutes when transferred to the hands. As guidance from Health Protection Scotland (Box 1) points out, this is long enough for self inoculation of the conjunctiva or mucous membranes, and for the virus to be transferred by touch from contaminated hands to other surfaces.

It is reassuring, then, that research has shown that the influenza A virus is destroyed within 30 seconds by alcohol hand disinfectant (Schurmann and Eggers, 1983).

INFECTION CONTROL AND PERSONAL HYGIENE
The general public can take basic infection control measures to minimise the risk of infection to themselves and to others. These include (Cabinet Office and DH, 2007):

- Staying at home when ill;
- Covering the nose and mouth with a tissue when coughing or sneezing;
- Disposing of dirty tissues promptly and carefully – bagging and binning them;
- Washing hands frequently with soap and water, or using alcoholic hand disinfectants to reduce spread of the virus from hands to the face, or to other people, particularly after blowing the nose or disposing of tissues;
- Cleaning frequently touched hard surfaces, such as kitchen worktops, light switches and door handles, and regularly using normal cleaning products;
- Avoiding crowded gatherings where possible, especially in enclosed spaces;
- If suffering with flu symptoms, wearing a disposable face mask to protect others should it become essential to go out, for example, to go to hospital;
- Making sure children follow this advice.

The guidance states that “adopting such measures can help mitigate the overall health and wider impact of a pandemic by lowering the clinical attack rate and slowing its development, thereby spreading peak demand on services and enabling them to respond more effectively” (Cabinet Office and DH, 2007).

This document also provides guidance to the public on: using face masks and respirators; restrictions on travel within the UK; restrictions on public gatherings; school closures; and pre-pandemic vaccination.

Key points from guidance are:
- The general wearing of face masks in public places by those who do not have flu symptoms is not recommended (and face masks will not be supplied by government);
- Restrictions on travel within the UK would have little positive impact on the total number affected by flu over the entire course of a pandemic and would exacerbate the economic impact, increasing social disruption and adding to business/service continuity. Consequently, the government is unlikely to impose restrictions on internal travel, unless it becomes necessary for public health reasons as the pandemic develops;
- The government is unlikely to issue a blanket ban on public gatherings, but it may do so if circumstances indicate it would be prudent to do so to protect the public;
- The government would take decisions on advising school closures on the basis of an assessment of the emerging characteristics and impact as the pandemic develops;
- Although a population-wide vaccination campaign is unlikely to be possible before or during the first pandemic wave, vaccination may help to reduce the impact of subsequent