

30th April 2009

H1N1, misleadingly called 'Swine Flu' is the latest infectious illness which is expected to hit the UK in the coming days and weeks. The WHO has raised current level of pandemic alert from phase 4 to phase 5. Phase 5 is characterised by human-to-human spread of the virus into at least two countries and is a strong signal that a pandemic is imminent.

Flu pandemics occur about three times a century so – statistically speaking – the world is about due for another one. That is not to say a pandemic is inevitable.

Etymology

Flu is caused by a number of similar RNA viruses of the Orthomyxoviridae family and are classified by two surface proteins called haemagglutinin and neuraminidase. These proteins enable the virus to bind to the cell surface, and then release new viruses once replicated, respectively.

So, the different strains are classed by these serotypes: Avian Flu was serotype H5N1 and the current strain is H1N1 (the same as the 1918 Spanish Flu, coincidentally). It is the ability of these surface proteins to mutate that means the body only builds up limited resistance to flu: next year a different serotype will arrive and we start over again.

It is misleading to call H1N1 'Swine Flu' as to date the virus has not yet been isolated in animals. Genetic analysis has shown H1N1 to contain mix of swine flu, bird flu, and human flu genotypes but as the first cases developed near a pig farm there has been speculation that there may be a connection. Pigs have been known to be a reservoir for flu viruses with other organisms as vectors.

Transmission

It should be noted that H5N1 Avian Flu was zoonotic (i.e. was transferred from animals to humans) but was not, by and large, transferred between humans by the usual means such as airborne transmission. **H1N1 is different in that it is spread by human-to-human contact**; coughs and sneezes will aerosolise the virus particles which can be either breathed in or – more likely – deposited on hard surfaces which are then touched by others and the usual hand-to-eye or hand-to-mouth infection routes take over.

Hygiene Control

The structure of flu virus means that it is easily killed by quaternary ammonium based disinfectants such as **FAD, Bacticlean, Bacticlean XTRA and Bacteria X**. These are all based on quats and will easily kill this type of virus. Use these products at the normal in-use dilutions. Spray on and wipe off to clean and sanitise hard surfaces.

The virus is also killed by products such as **Bactiwipes, Safe Hands and Safe Wash** by alcohols such as **ABC**.

Note that these products kill ALL strains of flu as the serotype of the virus is not relevant to the mode of action of the biocide. The products listed above would also kill H2N2, which caused Asian Flu in 1957 and H3N2, which caused Hong Kong Flu in 1968.

Face masks are not advised for a number of reasons—all detailed on the HPA website

NB Orthomyxoviridae are large, enveloped viruses. This type is killed by the products listed above. In comparison, note that Norovirus is a small, non-enveloped virus against which such protocols are generally ineffective and AntiBak should be used if Norovirus is suspected.

Food Handling

This is not a food-borne illness. Pork is safe! There is a statistically minute chance that the virus could be contracted from undercooked pork but the likelihood is of the same magnitude as winning the lottery for weeks in a row. As ever, more important is the hand hygiene of people handling food. Remember that transmission is most likely to come from the routes described above if someone handling food has the virus or has virus particles on their hands picked up from hard surfaces.

The Health Protection Agency's advice is that good general infection control practices and good respiratory hand hygiene can help to reduce transmission of all viruses, including H1N1. This includes:

- Stay at home if you have flu-like symptoms
- Covering your nose and mouth when coughing or sneezing, using a tissue when possible
- Disposing of dirty tissues promptly and carefully
- Maintaining good basic hygiene, for example washing hands frequently with soap and water to reduce the spread of the virus from your hands to face or to other people
- Cleaning hard surfaces (e.g. door handles) frequently using a suitable sanitiser
- Making sure your children follow this advice.

Further Information

...is available via the HPA (www.hpa.org.uk) or the Chemex Technical Team on 0121 56 56 300.

