



THE SCOTSMAN

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The A to Z of bird flu

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A is for Avian flu: First discovered in Italy a century ago, avian flu or bird flu, is a contagious viral disease which has dozens of different strains, some almost harmless and others that can kill infected fowl in a matter of hours. While all bird species are susceptible to the virus - which is loosely connected to human influenza - domestic poultry are particularly vulnerable.

B is for Ban: The European Union has now banned the import of fowl from Turkey, Romania and other nations who have suffered recent outbreaks of avian flu, in an attempt to prevent the spread of infection.

C is for China: The Medical Research Council is working closely with Chinese scientists to develop vaccines for avian flu and other diseases, known as "emerging infections". China is particularly at risk because of the country's large rural population who live close to livestock.

D is for Decontamination suits: This autumn's most desirable look among rural health workers. These puffy white suits, complete with matching hood and face mask are just the thing for sashaying through an infected farm. Let's hope they don't become next season's must-have.

E is for Emergency government powers: Should there be a pandemic, the Government has the power to isolate Britain from the rest of the world by grounding planes, canceling ferries and closing the Channel Tunnel. It is more likely, though that it would cancel large gatherings, such as concerts and football matches, in an attempt to slow the spread of the virus.

F is for Flu: Flu, short for influenza, is an acute contagious fever, caused by a virus, which can lead to severe aching and catarrh and which kills 15,000 people - usually the old or infirm - in Britain each year.

G is for Greece: Yesterday Greece became the latest to confirm a case of bird flu, on a turkey farm on the Oinousses island chain, in the Aegean Sea near the Turkish coast. Agriculture Minister Evangelos Basiakos said the H5 virus had been detected in one of nine turkeys tested on Oinousses.

H is for H5N1: This is the deadliest strain of bird flu and the reason for global concern. Highly contagious, H5N1 kills almost all infected fowl, many within 24 hours. The strain has leapt the species barrier and killed 60 people working with stricken birds in South East Asia. Although it can only be passed to humans by birds, the fear is H5N1 will mutate so it becomes transferable from human to human.

I is for Ingredient: Star anise, an oriental fruit used to flavour Chinese food, is one of the key



ingredients of Tamiflu, a crucial drug in the fight against bird flu. Star anise, grown in four areas of China between March and May, produces Shikimic acid, which is used by the global drug manufacturer Roche.

J is for Japan: Over 34,000 birds were culled in Japan in January 2004 after the virus was discovered among fowl. The current outbreak of the H5N1 strain had been incubated in South Korea where it was first reported in mid-December, 2003. It then skipped over to Vietnam where the first human death occurred, before cropping up in Japan.

K is for Kazakhstan: The H5N1 virus's journey west took it through Russia this summer, where 120,000 birds had to be destroyed. In late July it arrived in Kazakhstan. Only 9,000 birds were killed here, but it was too little, too late, as the virus swept towards Europe.

L is for Sir Liam Donaldson: Britain's chief medical officer brought the reality of the problem home to millions on Sunday when he insisted that it was not a question of "if" H5N1 mutates into a human-to-human form, but "when".

M is for Migrating birds: Bird flu is being spread from Asia into Europe by migrating birds. Bob McCracken, the president of the British Veterinary Association, has said: "It is inevitable that bird flu will be carried to this country."

N is for Natural cycles: Diseases, like so much of life, have their own natural cycles. Experts say that the world is overdue for a global flu outbreak which tends to arrive every 10-40 years. The 1918 pandemic killed an estimated 40-50 million worldwide. That pandemic, which was exceptional, is considered one of the deadliest disease events in human history. Subsequent pandemics were much milder, with an estimated 2 million deaths in 1957 and 1 million deaths in 1968.

O is for Ornithologists: Who would have thought our lives could be in the hands of a few twitchers? Long dismissed as obsessives, the birdwatchers are now part of our front line defence against H5N1. The government has asked birdwatchers to be on the lookout for any serious disease in wild birds migrating from areas with avian flu. The Defra helpline (0845 933 5577) will allow ornithologists to report suspicious deaths.

P is for Pandemic: While an epidemic is an outbreak of disease in a localised community, a pandemic is when a disease sweeps through a country or a series of countries - or, in the worst-case scenario, across the entire world. A pandemic occurs when a new virus emerges and starts spreading as easily as a normal one - such as through coughing and sneezing. Because the virus is new, the human immune system will have no pre-existing immunity. This makes it likely that those who contract pandemic flu will be combating a more serious disease than that caused by normal flu.

Q is for Questions: When will the human strain of H5N1 emerge? How many people will be affected? How many people will die? Worryingly, right now no-one knows. All scientists and government ministers can do is make estimates and prepare accordingly.

R is for Romania: A cull of thousands of domestic birds is ongoing in Romania after a British laboratory confirmed last weekend that avian flu was present in villages in the eastern province of Dobrogea. The villages of Maliuc and Ceamurlia des Jos have been under quarantine while all vehicles leaving the wider province are being disinfected.

S is for Scotland: The Scottish Executive is preparing contingency plans as part of a national response to an outbreak. Over the next two years 1.2 million courses of the anti-viral drug Tamiflu are being stockpiled. This will be enough for 25 per cent of the population, the proportion it is estimated will be infected in an outbreak.

T is for Tamiflu: Tamiflu is the trade name for oseltamivir, a neuraminidase inhibitor that attacks the common flu virus and prevents its spread. Tamiflu is produced by Roche, the pharmaceutical company, which is currently enjoying massive orders - Britain has placed a £200 million order for almost 15 million doses. For some, every cloud has a silver lining.

U is for the United Nations: In May the UN's Food and Agricultural Organisation set up a Global Strategy for the Progressive Control of Highly Pathogenic Avian Influenza and called on developed nations to invest \$100 million in southeast Asian countries to allow them to set up adequate control programmes to prevent further spread.

V is for Vaccination: Unfortunately scientists are unable to begin to develop a vaccine for the human to human strain of H5N1 until the virus actually mutates into such a form, which it has not done. Once it has changed, scientists around the world will collaborate to produce a suitable vaccine, however it is expected to take more than a year for any new vaccine to be widely available.

W is for Woodrow Wilson: During the Spanish flu pandemic of 1919, the American president Woodrow Wilson contracted the virus while attending the Treaty of Versailles in Paris. Although he survived, it has been argued that in his weakened condition he was unable to prevent the imposition of harsh treaty conditions which later led to the Second World War.

X is for the X-factor: Scientists across the world are waiting for that single unknown factor which will trigger H5N1's mutation into a new strain capable of being passed from one human to the next.

Y is for Young people: It is not yet known what form human H5N1 will take. However it should be noted that during the outbreak in 1919, the virus tended to target the young and healthy members of society, which was a complete reversal from flu's normal pattern - which is to attack the old and infirm.

Z is for Zanamivir: This is the generic name of Relenza, another antiviral drug currently made by GlaxoSmithKline that hastens recovery from the flu. Those who begin to take zanamivir within the first two days of their illness start to feel an improvement a day earlier than they would otherwise. The drug is thought to interfere with the spread of the virus in the respiratory tract.

Web links

- [Dept of Health - pandemic flu](http://www.dh.gov.uk/PolicyAndGuidance/EmergencyPlanning/PandemicFlu/fs/en)
<http://www.dh.gov.uk/PolicyAndGuidance/EmergencyPlanning/PandemicFlu/fs/en>
- [WHO - Bird Flu fact sheet](http://www.who.int/csr/don/2004_01_15/en/)
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