



Risk of introducing H1N1 “North American Influenza” to the UK pig population

Note: Defra's Global Animal Health (GAH) monitors outbreaks of high impact diseases around the world. Influenza Viruses (Inf) are among those causes of disease of major concern.

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1 Introduction

There is concern that a new strain of human influenza A type H1N1 has been circulating in Mexico since mid-March 2009. It has now spread further within North America and is under investigation elsewhere. It has been suggested that this strain of influenza virus may have originated from pigs. However the virus has not been isolated from pigs and there have been no reports of unusual disease in pig herds.

This report provides general information on swine influenza and trade in pigs and pig products. Information is also provided on this outbreak of influenza in humans. Unlike avian influenza, swine influenza is not a notifiable or statutory disease and it is not listed by the World Organisation for Animal Health (OIE). Pig keepers and their veterinarians are therefore responsible for dealing with outbreaks of influenza in pigs to safeguard the welfare and productivity of their animals. Studies have shown that the previous swine flu H1N1 strain is common throughout pig populations worldwide, with around 25 percent of animals showing evidence of past exposure to infection.

2 Swine influenza surveillance

Swine influenza is a disease of pigs caused by a virus (influenza virus). Influenza viruses exist as various types and the principal type found in pigs is Type A. The virus is present in all pig producing countries, including the UK. Clinical signs of the disease may include dullness, fever, coughing and breathlessness with often a rapid recovery. Swine influenza is often seen in combination with other diseases (Defra, 2009).

When current strains of influenza infect pigs, the virus remains within the respiratory tract and does not spread to other parts of the body. Carcase meat should therefore not be contaminated with virus and international standards for trade in animals and animal products do not impose any restrictions in respect of influenza virus infection for the protection of either animal or human health.

There is no obligation under international rules to carry out surveillance for swine influenza so the level of information available varies between different countries.

H1N1 and H3N2 swine flu viruses are endemic among pig populations in many countries and something that the industry deals with routinely. Outbreaks among pigs normally occur in colder weather months (late fall and winter) and sometimes with the introduction of new pigs into susceptible herds. In the U.S. studies have shown that between 30 and 50 percent of the pig population has been exposed to H1N1 infection at some time (CDC, 2009).

Mexico does not routinely report swine influenza so there is some uncertainty regarding the situation in that country. Canada has reported no signs of increased disease or mortality in Canadian swine. The Canadian veterinary authorities are urging pig owners to report any signs of respiratory disease in pigs (Canadian Food Inspection Agency, 2009).

The UK and some other members of the European Union undertake surveillance to help detect the presence of animal diseases, including novel strain of influenza viruses, which are not normally present in the country/EU. The tests used in the UK would be capable of detecting this new variant of H1N1 but no cases have been identified.

3 Trade in pigs and pig products from North America

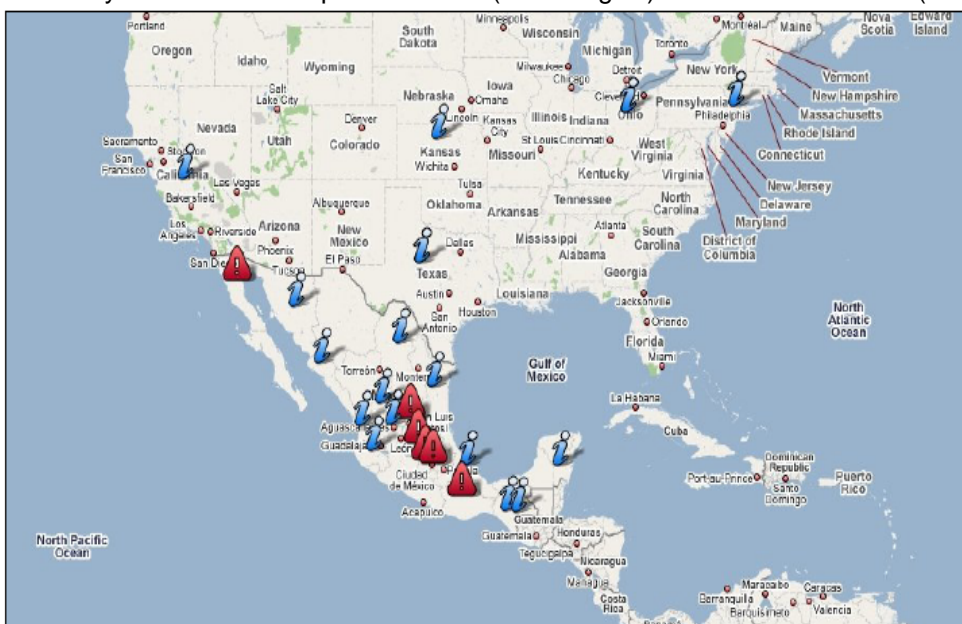
3.1 *EU rules restrict trade from North America, not because of influenza but in order to prevent the introduction of notifiable diseases in animals. The following are permitted, provided that all the necessary health conditions are met:*

	Live swine	Fresh pig meat	Cooked pig meat	Porcine semen and embryos
Mexico	No	No	No	No
USA	No	Yes	Yes	Yes
Canada	Yes	Yes	Yes	Yes

4 Human influenza situation report

Since March 2009, Mexico reported an increase in the number of cases of severe respiratory infection in humans. Cases were reported from 24 out of 32 states in Mexico. In April the USA reported two cases of human influenza in California. Currently cases have been confirmed in New York, California, Texas, Kansas and Ohio. In Canada there are four confirmed cases in children returning from holiday in Mexico. Suspect cases are being investigated in Spain, New Zealand and the UK (PAHO, 2009).

Summary of locations of reported deaths (red triangles) and confirmed cases (blue icons). From PAHO, 2009.



Laboratory analysis of two virus isolates from cases in the USA confirmed the presence of influenza virus type A strain H1N1. The genetic sequence indicated recombination of North American swine influenza, North American avian influenza, Human influenza virus and Eurasian swine influenza. This is a new recombination of virus strains, not previously isolated.

Reports of disease consistent with an epizootic of influenza have not been reported in swine in these countries and there are no indications that human disease has arisen from contact with pigs (PAHO, 2009). Further investigations into the epidemiology of the

disease are underway in Mexico and the USA, which may help confirm the source of infection. However all reports suggest the virus is transmitting directly from human to human and there is no evidence that pigs are involved in disease spread at present. If any evidence arises of infection of pigs, we will re-assess the risk.

5 Conclusions

We consider there is a negligible likelihood of introducing human influenza strain H1N1 to the UK by the legal import of pigs or pig products from North America.

There is no evidence that meat or other products would be contaminated with currently known strains of virus.

Current EU trade rules for live pigs and pig products are considered appropriate to control this situation. Nevertheless, if future surveillance indicates that pigs are involved in transmission of disease or are reported to be infected, these rules can be re-visited.

Trade in live pigs is permitted from Canada and this could possibly introduce a new strain of swine influenza virus to European pig populations if Canadian pigs are infected. It is also possible that an infectious human, returning to the UK, could introduce a new strain to the pig population. In either case, pig keepers are responsible for assuring themselves of the health status of animals which they buy. They are also responsible for implementing biosecurity measures to safeguard their own livestock.

However, there is no obligation to report swine influenza so there is considerable uncertainty as to the true situation in pigs. We will continue to work with international organisations to understand whether there is any unusual disease in pigs and whether any action to restrict trade would be appropriate.

We will continue to review the situation.

6 References

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