



Department  
of Health &  
Social Care

# Minutes of SPI-M meeting on H5N1: 23 May 2024

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## Meeting details

The meeting was held on 23 May from 12 noon to 1pm on Microsoft Teams.

The co-chairs were Déirdre Hollingsworth (academic chair) and Thomas Waite (executive chair).

## Attendees

From the Scientific Pandemic Infections group on Modelling (SPI-M):

- Daniela De Angelis
- Marc Baguelin
- Paul Birrell
- Ellen Brooks-Pollock
- Andre Charlett
- Louise Dyson
- John Edmunds
- Jessica Enright
- Thomas Finnie

- Christophe Fraser
- Michael Gravenor
- Ian Hall
- Thomas House
- Rowland Kao
- Matt Keeling
- Steven Riley
- Nicholas Watkins

Additional participants:

- Oliver Pybus (University of Oxford)
- Edward Hill (University of Warwick)
- Mike Tildesley (University of Warwick)
- Simon Gubbins (Pirbright Institute)

Observers:

- John Bates (Department of Health and Social Care (DHSC))
- Sarah Deeny (UK Health Security Agency (UKHSA))
- Robert Jenkins (UKHSA)
- Caroline Trotter (University of Cambridge)

Presenters:

- Meera Chand (UKHSA)
- Richard Pebody (UKHSA)

There were an additional 10 observers and 8 members of the secretariat whose names have been redacted.

Participant apologies:

- Declan Bradley
- Neil Ferguson
- Julia Gog
- Adam Kucharski
- Chris Robertson
- Christopher Williams

## Introduction

The chairs welcomed participants to the meeting.

The chairs acknowledged that the secretariat circulated meeting minutes from the first extra-ordinary meeting, 2 May, on H5N1 and asked participants to review and add any comments as soon as possible.

## Current assessment of the H5N1 outbreak

UKHSA presented the current assessment of the H5N1 outbreak in US dairy cattle farms.

Currently, this is still being considered an uncontrolled outbreak with infection in 52 herds and another confirmed human case, with symptoms of conjunctivitis.

Biosecurity measures have been put in place in the US and the Centers for Disease Control and Prevention (CDC) are publishing weekly wastewater data on a dashboard (detecting all subtypes of influenza A rather than just the outbreak strain).

In collaboration with relevant partners, UKHSA are planning to craft a risk assessment centred around the current and future human health risk from the outbreak in the US.

There are 2 main hypotheses for routes of transmission; one is via the mammary gland and the other is via respiratory means. Both could be supported by biological findings as the virus is found in milk, nasal swabs, and can be cultured from lung and lymph nodes. New evidence (see Caserta and others, [From birds to mammals: spillover of highly pathogenic avian influenza H5N1 virus](#)) has appeared supporting the existence of asymptomatic cows, which are thought to be in high proportion, and a form of long-range

transmission not linked to cattle movement but there is speculation on whether this is from birds, other mammals, fomites or workers.

Participants noted more dominant modes of transmission may be masking other modes and expressed interests in the human cases which have experienced conjunctivitis.

UKHSA confirmed that there is high confidence, supported by genetics and virology, that the risk assessment is at level 3 (limited or facilitated transmission) and low confidence for level 4 (sustained and/or multispecies mammalian outbreaks); as more data emerges there may be a push towards level 4. For new descriptions for each risk level see [Influenza A\(H5N1\) 2.3.4.4b B3.13: US cattle outbreak](#) (PDF, 468KB), as updated by the UKHSA zoonotic influenza technical group.

## Surveillance plans for human cases of H5N1 in the UK

UKHSA presented the surveillance plans for human cases of H5N1.

There is currently no known infection of humans in the UK. However, surveillance activity in the UK is being planned and is currently split into 3 domains. Initially, detecting the first human case and assessing transmission and severity (domain 1). Then, monitoring the evolution over time to understand the potential impact on the wider population, healthcare, and specific vulnerable groups (domain 2). Lastly, looking at interventions such as vaccine programmes, antivirals, public health and social measures (domain 3).

UKHSA presented the various actions that can be taken under domain 1 and 2. An example includes sentinel surveillance in primary care (GP) and secondary care (hospital). Another includes syndromic surveillance which uses health information systems to detect any early unusual signs (such as symptoms of conjunctivitis).

The protocol for asymptomatic worker swabbing (currently being undertaken by poultry workers in response to H5 circulating previously) is being adapted to cattle. Participants noted the benefits of this expansion, questioned the possibility of expanding to other farm animal workers such as swine (previously completed during the H1N2 incident in Thirsk) and acknowledged that the key to these programmes are participation and engagement.

## Discussion

Participants noted the lack of clarity regarding how much testing is being conducted in the US. Without testing information, it is difficult to calculate a denominator and therefore the size of epidemic remains unclear.

There is low confidence that a lot of testing is being conducted as most positive cases seem to be epidemiologically linked to known outbreaks. To combat this, participants discussed the possibility of using milk testing data to understand the potential size of the epidemic in the US.

Participants acknowledge that while some modelling may be possible (such as a farm-to-farm transmission model) the limited data available would translate into a significant amount of uncertainty.

Exposure levels of farm workers was also discussed. Participants noted that while initial contact may be limited, one case study suggested the number of employees in contact with cattle increases alongside the number of infections in farms, in a positive feedback loop.

Participants discussed the potential evolution of the virus and whether mutations increasing the possibility of human-to-human transmission are likely to occur in animal or human infections. Several participants noted that the level of human exposure to the virus is low compared to animals and birds. Therefore, the likelihood of human-to-human evolution happening in humans is also likely to be low compared to animals and birds.

## **Any other business**

The SPI-M secretariat thanked members for their help in initiating data sharing agreements between their institutions and UKHSA, and informed participants that additional questionnaires may be circulated to help understand the information security measures of their institutions.

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