

Bird flu: UK could mass vaccinate chickens to prevent avian influenza spreading between humans

EXCLUSIVE

Given exclusive access to the Animal and Plant Health Agency i is told experts are reviewing the risk bird flu transmission to people every week



Research Scientist Dilhani De Silva taking infected lung tissue from a chicken, using eggs to grow the culture at the Animal and Plant Health Authority in Surrey. (Photo: Tom Pilston)



By Iane Merrick

a bid to curb the worst-ever global outbreak of the virus and prevent it turning into a new pandemic in humans, **i** can reveal.

In what would be a major change of UK policy, government officials and scientists are looking at overturning a ban on vaccinating tens of millions of birds as the H5N1 virus shows no sign of abating, the leading expert in **avian influenza** said.

In an interview with **i**, Professor Ian Brown, who is leading the UK's fight against bird flu, also revealed his concerns over recent developments in the global outbreak.



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These include signs that it could evolve to transmit between mammals; the spread of the virus into Central and South America – which he said puts at risk critically endangered species, including unique birds in the Galapagos Islands and penguins in Antarctica – and a cluster of human cases in Cambodia, which has led to the death of an 11-year-old girl.

Prof Brown, scientific services director at the government's Animal and Plant Health Agency (APHA), said recent incidents of mass deaths in **seals in the Caspian Sea** and **sea lions in Peru** were disconcerting, and if it showed there was transmission between mammals, it would be “new territory” for the global fight to stop a pandemic in humans.

Last month the EU announced it was overturning its own prohibition on vaccination of poultry against bird flu, leaving member states free to immunise flocks against the virus.

The **i** was this week the first national newspaper to be given access to the high-secure APHA facility in Surrey, which is at the heart of the UK's battle against bird flu. During our visit to its labs and

and academia is reviewing the risk from bird flu to humans on a weekly basis, it can reveal.

The **threat** is currently at Level 3 – meaning there are changes in the virus genome that could lead to mammal-to-mammal transmission. Evidence of mammal-to-mammal transmission would move the risk up to Level 4.

In this scenario, Prof Brown said “then we have got to be concerned, no question” for potential human transmission, which would be classed as Level 5.



A Gentoo penguin on the rocks of Portal Point, Antarctica. There are fears penguins so far south could be affected by bird flu (Photo: Wolfgang Kaehler/LightRocket)

Last week it emerged **the UKHSA is considering introducing lateral flow tests to detect bird flu in humans** in case there is a spillover of the virus into people, and is running scenarios for a potential new pandemic.

Prof Brown and his team are working with the **World Health Organisation** and other global governments and organisations to try to limit the spread.

He added. At the moment, the UK is actively reviewing all of its plans for mitigation and prevention of avian influenza. Vaccination [of poultry] is one of them. There is a cross-sector group looking at that.”

But he warned this would not be a “simple fix” as it would be costly and biosecurity measures would still need to be in place.

Scientists are wary of vaccinating poultry because it can still allow the virus to transmit within flocks of healthy birds.

Prof Brown added: “Some sectors in Europe have been really, really badly hit. The French *foie gras* industry – the ducks have been massively hit over successive years, to the point where probably it’s been brought to its knees.

“So there’s been a lot of interest from some sectors saying we need to be able to try and protect our birds better.

“There would be a cost. It wouldn’t be a fix that means you could ignore your biosecurity, you vaccinate your birds and everything’s fine.”

Last year representatives from the UK turkey industry called for vaccination of poultry to protect their Christmas birds.

There would be safeguards in place to protect consumers about what meat is allowed to enter the food chain.

Prof Brown said European countries would likely decide whether to vaccinate by the end of this month based on the best science available. He added: “Some sectors are keen to vaccinate, other sectors are not so keen to vaccinate. Our job is to just set the science out and say this is what we know about these vaccines.”

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For the UK vaccination plan, Prof Brown said: “Let’s just say there’s a recognition that everyone’s got to work at pace, and nobody’s sitting on their hands.

“That represents quite a big change, because vaccination is prohibited in the UK in poultry, so it has to be carefully balanced, but obviously with the changing risk, looking at vaccination as one component of a control programme is obviously prudent.”

The UKHSA/APHA technical group is also looking at potential candidate vaccines for humans if the virus spills over into people, **i** understands.

However, this would be an easier process than was required with developing a **jab against covid**, where scientists were essentially starting with a new virus.



Professor Ian Brown, director of scientific services at the Animal and Plant Health Authority in Surrey (Photo: Tom Pllston)

H5 strains of avian flu have been around for years, and the WHO has a number of possible vaccines that could be adapted if a particular variant of bird flu took off in humans, Prof Brown said.

“We’ve got a whole map of potential vaccine candidates here, any of which could be used quickly if there was an emergency,” he told **i** at the government facility in Weybridge.

The current outbreak of H5N1 began in the northern hemisphere in October 2021, but unlike previous periods of bird flu, it did not subside after winter, and was sustained by transmission in wild bird populations throughout summer 2022.

Prof Brown said gulls in particular were responsible for spreading the virus from poultry farms to remote sea colonies, with seabirds like gannets being struck for the first time.

Then in another globally unprecedented event, the virus spread into South America last autumn.

He added: “It spread into wild bird populations last summer, into these seabird populations that never had experienced this disease before. It’s an area which is challenging our understanding of the disease.

“You’ve got some endangered, really globally important populations of birds down there, some of them penguins, some of the species for instance have a contact structure where they’re close together.”

At the APHA site, scientists are investigating tissue from dead birds and **mammals** as well as monitoring signs of changes in the virus genome that could make it more transmissible between animals and even humans.

They are also researching whether bird flu could be airborne in dust from feathers and faeces shed by poultry in sheds, although Prof Brown said there was currently no evidence of that.

Prof Brown said the strain has a broader host range in wild birds, but it is also producing “huge quantities of virus” when it infects poultry.

His team’s tests have established that the virus can survive in the environment for as many as six weeks at an ambient winter temperature of 4C, meaning it is hanging around long after a bird has shed it.

In January, Dagestan State University reported the deaths of hundreds of seals in the Caspian Sea with a possible link to bird flu, but there are difficulties getting access to the data, Prof Brown said, because it falls under Russian jurisdiction.



An information sign about seals in Dagestan. In total, 2,500 seals were found dead, about 700 on the coast of the Kirovsky district of Dagestan (Photo: Denis Abramov/Anadolu/Getty)

He added: “While scientifically we would have been able to probably share information with them prior to the Ukraine situation, obviously that’s more difficult now.

“I have not personally seen a clear descriptive report that all of these seals were truly dying of H5N1, and that there is enough data to know it was going from one seal to another.”

So far about a dozen cases of avian flu were found in otters and foxes in the UK, all of which died after apparently scavenging on dead bird carcasses as an “easy food source”.

Prof Brown said: “These dead wild birds or sick wild birds that are infected with this H5N1 are full of virus, this isn’t just a little transient infection in their respiratory tract – all of their body organs are full of virus, which is why they rapidly die.

“That means when those carnivores eat those birds they’re exposed to very very high quantities of virus, and in those circumstances it sometimes enables the virus to bridge more easily from one host population to another one.”

Prof Brown said there was, as yet, no scientific evidence of transmission between wild mammals but his team have been ramping up surveillance and monitoring: “This was not a dimension people

“To put it in context, we’ve had five human cases with this current H5N1, and they’ve all been mild, globally.”



Veterinary pathologist Natalia Furman studying tissue from dead birds to look for viral infection at the Animal and Plant Health Authority in Surrey (Photo: Tom Pilston)

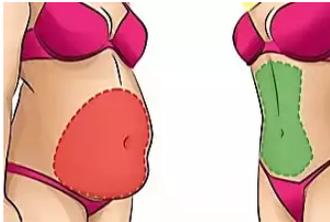
Asked how concerned he was about human-to-human transmission, Prof Brown said: “If it establishes in mammals and goes from one mammal to another, then we have got to be concerned, no question. That’s why it’s important to do the monitoring, to get the evidence and understand what changes are happening.

“[But] the information exchange for flu is well developed. We’re not like in a covid situation where the linkage between any animal reservoir and public health was not in place, flu has been an established system.”

Prof Brown said it was a “UKHSA question” to answer whether the UK is prepared for a new pandemic from bird flu, but he added: “If you ask me are we prepared for a panzootic in animals, in

Prof Brown said the public could help in the battle by reporting incidents of dead birds and wild mammals to the Defra helpline or on its website, and not to touch any dead wildlife. **i**

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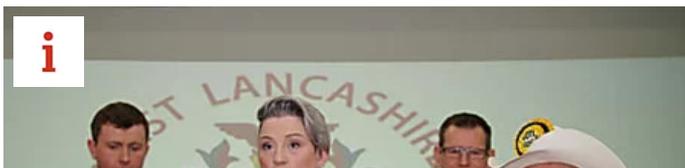
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