

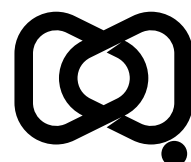


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The first high pathogenicity avian influenza A(H5N1) clade 2.3.4.4b incursions in the Hunter New England region, New South Wales, Australia, June–July 2026

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Abstract

Two incursions of high pathogenicity avian influenza (HPAI) A(H5N1) clade 2.3.4.4b in vagrant birds were identified in the Hunter New England region of New South Wales, Australia on 28 June 2026 and 10 July 2026. These were the first detections of the virus in New South Wales and occurred shortly after the first Australian detection in June 2026. The Hunter New England Population Health Unit managed human contacts of the infected birds using a contact management system designed and purpose-built by the Unit. We report on the public health response and opportunities for improvement.

Keywords: Avian influenza; H5N1; HPAI; pandemic preparedness; risk assessment; zoonotic transmission; human infection; disease surveillance; public health

Introduction

High pathogenicity avian influenza (HPAI) A(H5N1) clade 2.3.4.4b has caused devastating outbreaks in avian and mammalian species since its emergence in 2020.^{1,2} Oceania was the last continent to face an incursion of the disease and grave concerns are held for local wildlife.³ There have been approximately 1,000 recorded avian influenza A(H5N1) human infections broadly since 2003, with a 48% mortality rate.⁴ Approximately 100 human cases of avian influenza A(H5N1) clade 2.3.4.4b (herein H5N1) have been reported globally since its emergence.⁵ In the United States of America, where 71 confirmed human cases have been reported since 2024, only two deaths have occurred.^{4,6} No human-to-human transmission has been reported and the majority of human cases have been associated with occupational exposure, such as culling poultry.⁷ A recent United Kingdom (UK)-based study found a very low positivity rate for humans exposed to H5N1 through their work on infected poultry premises (3/428; 0.7%).⁸

The Hunter New England (HNE) region of New South Wales (NSW) has experienced previous outbreaks of low pathogenicity avian influenza (LPAI) A(H9N2) and HPAI A(H7N7) in April and November 2012, respectively.⁹ In 2024, there was a HPAI A(H7N8) outbreak in the Hawkesbury region of NSW, which borders HNE.¹⁰ In this report, we describe the public health response of the Hunter New England Population Health Unit (HNEPHU) to the initial H5N1 incursions and discuss key learnings from the response.

Methods

Given prior outbreaks of avian influenza and the H5N1 panzootic overseas, HNEPHU undertook HPAI preparedness activities commencing in 2024. This included the development of internal standard operating procedures, communications materials, and conducting a HPAI tabletop exercise. At the time, there was no available statewide contact management solution for human contacts of infected animals, so HNEPHU designed and built a solution in REDCap (Research Electronic Data Capture) to support the public health response to HPAI outbreaks on poultry farms.¹¹ REDCap is a secure, web-based software platform designed to support data capture for research studies.¹² Our preparedness activities and responses were guided by the Communicable Diseases Network Australia (CDNA) Series of National Guidelines (SoNG) for avian influenza;¹³ the NSW Health Control Guidelines;¹⁴ the Australian Veterinary Emergency Plan (AUSVETPLAN) Response Strategy for Avian Influenza (the Australian response guideline for HPAI as an emergency animal disease);¹⁵ and international developments in the H5N1 panzootic.

Ethics statement

This outbreak was investigated under the NSW *Public Health Act 2010*. Ethics approval was not required.

Response

First incursion

The initial H5N1 incursion in HNE took place on 28 June 2026. The infected bird was a Giant Petrel found on Bennetts Beach, Hawks Nest, by field officers from the NSW National Parks and Wildlife Service (NPWS). The Giant Petrel was found moribund and was taken by NPWS staff to be euthanised at a local veterinary clinic, where samples were collected for testing. The bird was deemed 'vagrant' rather than migratory.

Two NPWS staff and veterinary clinic staff were initially identified by the Department of Primary Industries and Regional Development (DPIRD) as contacts and were notified to HNEPHU five days after exposure to the infected bird. Interview of these contacts identified two further NPWS visitor services attendants and four veterinary staff contacts. Following telephone interviews by a public health nurse, contacts were risk assessed as having high, low or negligible level of exposure risk as per the SoNG and their data was entered into REDCap.

Of the eight contacts: one was classified as having a high level of exposure, five a low level, and two a negligible level. The classifications were based upon direct contact with the infected bird and on personal protective equipment (PPE) use. The contact with a high level of exposure had prolonged exposure to the bird, collected the samples, and reported PPE breaches. No contacts identified risk factors for severe disease (e.g. immunocompromise, pregnancy). Antiviral post-exposure prophylaxis was offered to the contact with a high level of exposure, but they declined. Contacts were recommended to receive a seasonal influenza vaccine if not already vaccinated this year. The cohort was followed up via SMS or self-monitoring, depending on risk level, until ten days after their last exposure. No reports of symptoms were received during the monitoring period.

Second incursion

The second incursion took place on 10 July 2026, also at Bennetts Beach. A Giant Petrel was found deceased and partially decomposed/scavenged. Samples were taken for testing by Local Land Services (LLS) staff, and the carcass was disposed of according to state guidelines.¹⁶ Confirmatory testing undertaken at the Australian Centre for Disease Preparedness was reportedly delayed due to the degree of decomposition.

HNEPHU was notified of the incident on 14 July 2026. This incursion generated four contacts: two LLS staff and two NPWS field officers. The four contacts were identified in two tranches, with the LLS staff notified initially (n = 2). Risk assessment of the LLS staff determined one as having a low level of exposure, and the other a negligible level. The contact with a low level of exposure was followed up via a second-daily SMS reminder delivered from the HPAI REDCap project. The reminders requested the contact self-monitor for symptoms until ten days post-exposure. The contact with a negligible level of exposure received information only. The NPWS field officers were identified on 15 July 2026 and were also deemed to have had a negligible level of exposure. No reports of new symptoms were received during the monitoring period (one contact with a negligible level of exposure reported symptoms on notification which were attributed to other causes. Testing for H5N1 was not indicated).

Discussion and conclusion

An internal after-action review (AAR) was held following conclusion of the contact follow-up period for both incursions. Overall, the responses were considered appropriate. Key issues identified included:

- The HPAI REDCap project was not well suited to contact management of wild bird detections, as it was primarily designed to respond to poultry farm outbreaks. Modifications to the HPAI REDCap were made during the response to adapt it, which proved challenging, as technical expertise was limited to one person within HNEPHU.
- Time from exposure to confirmation of H5N1 and subsequent PHU notification delayed PHU follow-up.
- There were delays in identifying all contacts of the infected animals, leading to delays in initiating follow-up.
- The outdoor environment and no effective contact with a dead marine bird may pose a lower risk than the 'low level of exposure' categorisation suggested by current guidelines.
- While no contacts required testing, clinical pathways to arrange testing for symptomatic contacts may be challenging.

One contact had a high level of exposure and was offered Oseltamivir (antiviral). Antiviral uptake in previous outbreaks in HNE has been low,⁹ and this was also the case in the UK study.⁸ Since the two incursions, a statewide contact management system has been developed to support PHUs in responding to HPAI detections.

Avian influenza preparedness activities are critically important, particularly in regional public health units which face ongoing risks of emerging zoonotic disease.^{17–20} Although the HNE HPAI REDCap project was not entirely fit for purpose when deployed for the initial wild bird incursions, it functioned effectively to support contact management once rapidly modified. The value of an AAR following this incident revealed several improvements necessary to support improved responses to future H5N1 incursions.

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