

This article is an early release of information from Inform'ACTION No. 32, which will be published very soon.

Open borders with no confirmed cases of Pandemic H1N1 2009 in Niue

Introduction

Niue is a small, single-island State in the Pacific with a land mass of 259 square kilometres. It lies within a triangle of nations that includes Samoa, Tonga and Cook Islands. Niue has a resident population of about 1,500 people while at least 20,000 Niueans reside in New Zealand. Niue is a multi-cultural society and has close economic and communication links with New Zealand. The primary means of transport to Niue is through a weekly Air New Zealand flight from Auckland, and a cargo boat comes every three weeks. There is only one hospital or medical facility on the island, and it has 3 doctors and 45 health staff. Like other Pacific Island nations, the main health burdens in Niue include diabetes, hypertension, gout and obesity.



Outbreak of an influenza-like illness (ILI)

Niue's isolation does not guarantee that it is protected from communicable diseases. During the months of February to April 2009, Niue experienced an influenza-like illness (ILI) outbreak in which at least 190 people of all ages were affected. This was a precursor to the pandemic as it happened about the same time in Tokelau (see *Inform' Action* no. 31). The outbreak on Niue was detected through the hospital-based infectious disease surveillance system that was set up in 2008. In the initial stages of the outbreak, the Health Department informed the public to take precautionary measures such as covering your mouth and nose when sneezing, washing your hands thoroughly, and staying home if you are sick.

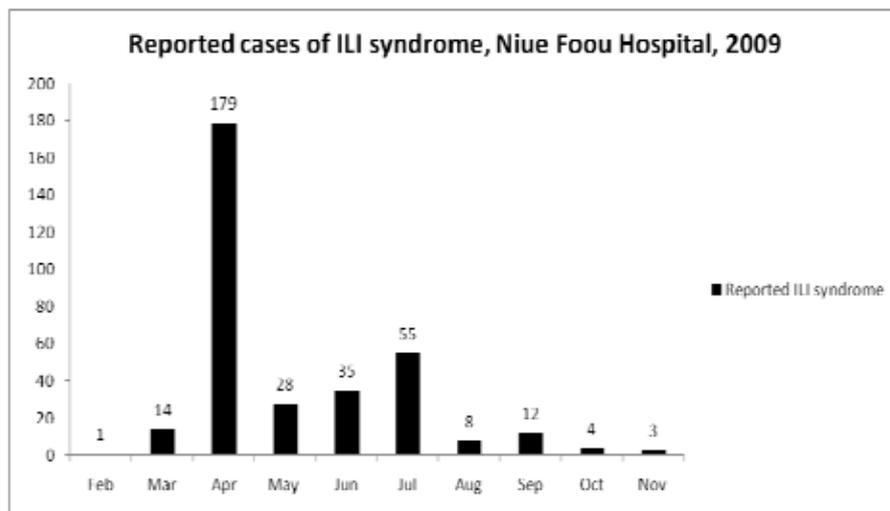
The laboratory tested 20 nasopharyngeal samples using a Rapid Test Kit — 10 were positive for influenza A virus. Niue's Health Department decided that the outbreak was caused by this virus. These positives were not sent overseas for typing there was no viral transport equipment. The outbreak receded towards the end of April and the beginning of May 2009, and the number of ILI cases gradually increased between May and July (see figure).

Background

The H1N1 outbreak was first detected in Mexico City in March 2009. The first case of H1N1 in the USA was confirmed on 14 April 2009 and the first imported cases of the same were confirmed in New Zealand on 25 April 2009. On 11 June, the World Health Organization (WHO) declared H1N1 a pandemic. In New Zealand, widespread community transmission became evident in June. By the first week of July, more than 1,000 confirmed cases had been reported in New Zealand. Notified cases of H1N1 in New Zealand reached a peak in July.¹ There were no travel restrictions to and from Niue during the pandemic.

¹ See *Eurosurveillance*, vol 14, issue 34, 27 August 2009.

Data on ILI outbreak



The graph shows that the peak of the influenza A outbreak in Niue happened in April while cases of confirmed H1N1 started to spread around the world at about the same time. As expected, in the Southern Hemisphere winter, there was an increase in the number of ILI cases on Niue following the outbreak and during the pandemic. Although WHO declared H1N1 a pandemic in June, efforts were made to detect and confirm whether or not the virus entered Niue's borders.

Events that happened on Niue in response to the pandemic

- At the end of March, initial cases of H1N1 were detected in Mexico and then in USA in April. Niue's population learned about it through the media and Internet, and health officials at the hospital were notified of the event by the Acting Director of Health.
- In April, the information exchange started to appear on the Pacific Public Health Surveillance Network (PacNet) email forum, and WHO sent out alerts to Niue. Counties Manukau District Health Board (CMDHB) in Auckland also made contact with Niue health officials, and provided updates of what was happening in New Zealand.
- On Monday, 27 April, the Minister of Health called a meeting with health officials, and afterwards a meeting with the multi-sectoral Pandemic Taskforce to map out a response through the Niue Influenza Pandemic Preparedness and Response Plan (NIPPP). The New Zealand High Commission Office was represented in case there was a need for assistance from New Zealand.
- Following the Pandemic Taskforce meeting, another meeting was held at the hospital with senior staff and section heads to discuss the hospital's response. Afterwards, the Hospital Response Plan for a pandemic was activated. Within the plan there were requirements for the hospital to be resourced with pharmaceutical supplies, staff duty roster, health awareness and promotion activities, and the setting up of the Community Based Assessment Centre (CBAC) near the airport with the corresponding development of a border health questionnaire (see document below). CBAC was activated based on the recommendation from the testing exercise that was funded and facilitated by the Pacific Regional Influenza Pandemic Preparedness Project (PRIPPP) of the Secretariat of the Pacific Community (SPC) in 2007 as part of Niue's pandemic preparedness planning.
- A public health order was issued by the Acting Director of Health, declaring that the activities in response to the pandemic were within the requirements of the Niue Public Health Act 1965.

- On Saturday, 2 May 2009, a border health team, consisting of a medical officer and two public health officers, started screening all passengers on flights from Auckland for ILI symptoms. A health questionnaire was issued in-flight to be completed and then checked by the health team before passengers began immigration clearance. Anyone who had two or more symptoms were asked for further information in order to ascertain how long they had the symptoms for, whether they were treated with Tamiflu, and whether they had their seasonal flu vaccination. A Health Department van was parked near the health team at the airport to transfer any sick person to CBAC should the need arise. The reason for commencing border screening was to show international support, although such activity may not necessarily stop the virus from entering Niue.



- In-coming crew members of sea vessels were also required to complete the border health questionnaire.
- Cabinet declared H1N1 as a notifiable disease.
- Medical officers at Niue Fook Hospital were given a series of documents released by WHO and/or SPC and CMDHB on case definitions, diagnosis, and clinical management of cases. Documents on laboratory issues were also given to Niue's Laboratory Technologist.
- A talkback radio program was aired one Monday evening, where the Minister of Health, Acting Director of Health, and senior health staff participated and talked to the public to allay fears about what the pandemic could do to Niue.
- Public awareness began in May with a TV advertisement on preventive measures to be taken against H1N1. This advertisement was locally made and shown on Niue's local TV station three times a week (although the frequency of showing it increased to almost every night in the months of June to August before the One News feed from TVNZ). Complaints were raised with the Health Department that the advertisement was a nuisance to some viewers, especially before the super 14 live rugby matches.
- Tamiflu tablets were made available and secured at the hospital. The stock inventory was checked each week. This stock was used by medical officers to treat some patients with suspected H1N1 symptoms and severe influenza symptoms. The stock was enough to cover 30% of the population.
- In June, rumours were circulating at an international nurses forum that Niue had '51 confirmed cases of H1N1'. These rumours made WHO seek clarification through a phone call and email to the Principal Public Health Officer, Niue Health Department. The rumour was found to be untrue. It was '51 cases of influenza like illness'. These cases were detected through Niue's hospital-based syndromic surveillance system at a time when there were no swabs or transport equipment. Niue's laboratory also discontinued procuring and using Rapid Test Kits because the Health Department was advised to do so by SPC and WHO because the kits were not reliable for screening or detecting H1N1. SPC organised the supply of transport equipment from an overseas supplier, which was received sometime after June during the pandemic.
- The Health Department also sent several periodic surveillance reports on ILI cases to WHO's South Pacific Office in Suva, Fiji during the pandemic.

- During the peak of the pandemic in New Zealand, a number of local residents continued to have flu-like symptoms and posed a risk of infection to health staff when they came to the hospital for consultation. The public was then informed through the media that people with flu-like symptoms had to wear a mask before seeing a doctor.
- Nurses considered the importance of infection control, and conducted their own internal trainings on the use of a hand sanitiser, putting on and removing personal protective equipment, and maintaining a safe distance of one to two metres between the nurse and a sick person.
- Starting in July, a public health nurse from CMDHB waited at Auckland Airport's check-in area for all Air New Zealand flight passengers bound for Niue to ensure that they did not have symptoms resembling H1N1. In the boarding lounge, the nurse made another round of checks, and managed to stop at least two passengers. She had them isolated at a motel near the airport before they were well enough to travel to Niue. Having a nurse at Auckland Airport was a direct (formal) request from the Niue government to the New Zealand government.
- In August (about two months following community transmission and one month following the peak of notified cases in New Zealand) five local residents were suspected of having the H1N1 infection, one of whom had travelled overseas to an area with known community transmission. One patient was given Tamiflu and asked to stay at home in quarantine and to limit their movement. All five patients had nasopharyngeal swabs taken within 48 hours of the onset of symptoms (some were already on Tamiflu treatment and were not quarantined at home). Specimens were packed according to International Air Transport Association (IATA) regulations and couriered to the Institute of Environmental Science and Research (ESR) laboratory in Wellington for testing. The results showed that none of the patients tested positive for H1N1. (Niue's Health Department did not receive feedback from the ESR laboratory saying that the specimens were of poor quality.) Niue's medical officers decided when to collect or not to collect samples according to WHO case definitions for suspected cases of H1N1, and based their decisions on the circumstances of each patient.
- As the pandemic slowed down towards the end of 2009, Niue decided to down-grade its border activities, with Auckland Airport health checks discontinued and border screenings ending on Christmas Day. By then, the Health Department had screened more than 2,500 travellers to Niue.
- The hospital preparedness and other public health activities in response to the pandemic remained the same. No one was hospitalised with H1N1, and no one was sent to CBAC for assessment or isolation.

Conclusion

The events that happened in Niue in 2009 made Health Department staff confident that they did not have any confirmed cases of H1N1. The Health Department's response was unique in many ways, thanks to the experience gained from a joint effort by SPC, WHO, New Zealand's Ministry of Health, and Niue government's pandemic functional exercise that was conducted in Niue in November 2007.

Fakaaue Lahi (Thank you)

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**Government of Niue
Border Control Health Arrival Form
(Public Health Act 1965)**

All passengers are hereby asked to please provide honest answers to all questions below.

Full Name:.....

Nationality:..... **Sex:** **Age:**.....

Occupation:.....

Date of Arrival:/...../2009 **Number of people traveling with you**.....

Aircraft/Vessel Name: **Flight/Voyage no:**..... **Seat no**.....

Original Place of Embarkation: **Country:**.....

Overseas Address: New Zealand or other Country:.....

Please list all countries visited over the last 14 days.....

Are you a : Visitor Returning Resident

Returning Resident: Name of Village:..... **Phone:**.....

Visitors only: Address in Niue:..... **Phone:**.....

Health Related Questions: [Please tick the appropriate answer]

Do you have or did you have the following flu like illness symptoms in the last 10 days? [If yes to any of the symptoms please state the date of onset]

Fever	Yes <input type="checkbox"/>	No <input type="checkbox"/>/...../.....	Cough	Yes <input type="checkbox"/>	No <input type="checkbox"/>/...../.....
Sore throat	Yes <input type="checkbox"/>	No <input type="checkbox"/>/...../.....	Muscle aches/pain	Yes <input type="checkbox"/>	No <input type="checkbox"/>/...../.....
Nasal Congestion	Yes <input type="checkbox"/>	No <input type="checkbox"/>/...../.....				

If you have or have had other flu like illness symptoms please include them below:
.....
.....

Have you been vaccinated against seasonal flu within the last 12 months? Yes No

Has anyone in your household experience flu like illness during the last 10 days? Yes No If yes, when?
...../...../.....

Did you come into close contact with anyone outside your household who was suffering from the flu like illness in the last 10 days? Yes No If yes, when?/...../.....

In the last 14 days, have you been in close contact with any farm or other animals listed below:
Pigs (swine) Yes No Poultry Yes No Other: Yes No If yes, specify.....

Please Note:

If you become ill while in Niue within the next 14 days, please contact the Medical Officer at Niue Foou Hospital immediately on phone number 4100 or come immediately to the Hospital.

Thank You - Niue Health Department