Inform'ACTION no 33
ISSN 1029-3396
Information for action / Information pour action

H1N1 influenza vaccination campaign in American Samoa, January 2010

Background

Mass vaccination using a vaccine specifically produced against the pandemic strain is considered to be the best public health tool during an influenza pandemic. The Public Health Emergency Preparedness (PHEP) Division of the American Samoa Public Health Department, along with the Immunization Division, had completed an extensive and detailed planning document for large scale H1N1 vaccination prior to September 2009, when American Samoa was hit by a tsunami. All plans concerning mass H1N1 vaccination were put on hold in order to deal with the destruction and mayhem caused by the tsunami. While some vaccination occurred during 2009, limited resources did not allow a mass vaccination to be conducted until assistance was received from the US Department of Health and Human Services (HHS). This article describes the mass H1N1 vaccination programmes that were conducted in schools and in the community.

Mass vaccination programme

American Samoa is located in the Southern Hemisphere, and there is frequent travel between the territory and other Pacific Islands and New Zealand. With rapid laboratory confirmation of the novel A H1N1 influenza virus unavailable, the true degree of the spread of the disease could not be detected within the community. As the lead agency addressing the pandemic in American Samoa, the Emergency Preparedness Division felt it was vital to provide vaccine coverage to the priority population groups during the early stages of the flu season in the South Pacific.

Therefore, in December 2009 the American Samoa Department of Health made a request to HHS for assistance in implementing H1N1 vaccination activities. The requested assistance consisted mainly of help administering vaccines at each school within the territory, both public and private, as the combined medical personnel from LBJ Hospital and the Department of Health were not enough to take on a vaccination campaign of this magnitude.

A total of 32,000 vaccine doses in different forms – pre-filled syringes, nasal sprays and multidose vials – were allocated to American Samoa from the Centers for Disease Control and Prevention (CDC) and were received early in December 2009. One week prior to our planned school-wide vaccination programme, two disaster medical assistance teams (DMATs) consisting of 13 people were deployed via HHS to assist.

In assessing the availability of quantities of the vaccine for American Samoa, we followed the recommendations of the Advisory Committee on Immunization Practices (ACIP), which advise

targeting a large group of people, under the assumption that a large number of doses of vaccine will be available initially.

The five major target groups are:

1. pregnant women;
2. household and caregiver contacts of children younger than six months of age;
3. health care and emergency medical services personnel;
4. children and young adults ages six months through 24 years; and
5. persons aged 25 through 64 years who have medical conditions that put them at higher risk for complications or death from influenza.

In the event that immediate demand exceeded initial availability of the vaccine, a smaller top priority group was identified, consisting of:

1. pregnant women;
2. household and caregiver contacts of children younger than six months of age;
3. health care and emergency medical service personnel with direct medical contact with patients or infectious materials;
4. children six months through four years; and
5. children under 19 years of age with chronic medical conditions.

We kicked off our mass H1N1 campaign with vaccination of all first responders, including Department of Health workers and medical personnel, during the second week of January 2010. It was decided to undertake school-based and community-based mass vaccination programmes to reach other identified priority groups.

Organisation of school-based vaccination and community clinics

We decided that the priority age group for our school vaccination coverage campaign would be children and young adults between six months and 24 years of age. The decision was based on the weekly influenza surveillance report from CDC, which showed that well over two-thirds of influenza-associated paediatric deaths were in children over five years old.

The main goal of our vaccination campaign was to vaccinate more than 50 per cent of the targeted school-age children and young adults on the main island of Tutuila. We aimed to do this during weekdays while the children were in school and also on two Saturdays for the general public and children who missed the vaccination at their school.

Our school-based vaccination activities commenced with assistance from staff of the Department of Health's Emergency Preparedness Division, LBJ nursing staff, the DMAT staff and staff of the Immunization Division. We had two teams consisting of the following people:

- Six DMAT personnel (mainly responsible for vaccinating).
- Four public health personnel responsible for entry screening. This consisted of checking that consent forms had been completed and signed, logging student information and filling out vaccine cards. These staff members also undertook exit screening, which included handing out appointment slips for a second dose (for children under 10 years old) and distributing thank you trinkets.
- Two medical personnel (either doctor or nurse) to answer any medical questions and to assist in the unlikely case of an adverse reaction to the vaccine.

We also had the EMS (ambulance crew) on standby when available to assist with transport to the hospital in the event of an emergency.

We started every day with early morning briefings, where all team members met in the Immunization Division conference room for school assignments, staff assignments, a general question and answer session and an opportunity to address any concerns. We tried to keep these morning briefings quick to allow time for loading of supplies, travel and set up at the designated schools.

All coolers containing vaccines were kept in cold chain storage, which was the responsibility of the Immunization Department Coordinator. Vaccinators were responsible for signing in and out their assigned coolers and keeping track of how many vials of vaccine they used per day. Both teams were usually set up by 0730 at their respective schools while the team leaders (PHEP staff members) were with the principals of the schools, assisting with organisation. Vaccination usually began before 0900 and finished by 1500. This varied according to the size of the school and how well consent forms had been completed. Our teams were well accepted in the schools, and most of our vaccination stations flowed smoothly. We did encounter resistance from parents with regard to using the nasal mist on their children. We wanted to use this form first due to shorter expiration dates. The concern was due to unfamiliarity with this type of vaccine, as only injections had been used previously. After its administration was demonstrated, acceptance of the mist vaccine was high.

Results

The vaccination mission lead estimated that approximately 12,000 vaccinations were administered by the two DMATs during their visit. Of these, approximately 1,500 doses were administered at the two Saturday clinics and 9,700 doses were administered at schools, with the remainder being administered in community health centers.

Vaccination coverage varied by age group, but overall it was estimated that 22 per cent of the population over the age of six months was vaccinated by the teams (Table 1). Vaccination coverage for children aged six months to four years was 18 per cent, while we recorded 52 per cent coverage in children aged 5–18 years. It is thought that our coverage in the six months to four years category was mainly contributed by preschoolers. Preschools are often located within or next to elementary schools in American Samoa, and many parents took advantage of the opportunity to get all their children vaccinated in one location. Our highest percentage of vaccination (72 per cent) was among children aged 5–9 years. Coverage was 42 per cent among children 10–18 years old. Our target goals of 53 per cent at high schools and 64 per cent at elementary schools were met.

Table 1: Number of people vaccinated in DMAT vaccination programmes in American Samoa by age group

Age group (years)	Population	Number of people vaccinated	Percentage
0.5–4	4,500	809	18.0
5–9	5,100	3,689	72.3
10–18	10,200	4,292	42.1
19–24	9,000	876	9.7
Other / unknown		3,115	
Total	58,000	12,781	22.0

Table 2 shows our vaccination numbers for high schools on Tutuila (not including Manu'a High School). Again, family members took advantage of our presence on school campuses to also vaccinate other members of their family. However, our priority was students; vaccination of other family members took place only when time permitted.

Table 2: Number of people vaccinated at five high schools on Tutuila, January 2010

Age group (years)	Tutuila High School				
	Leone	Fagaitua	Tafuna	Polytech	Faasao/Marist
0.5–3	20	0	0	0	0
4–9	21	0	0	0	0
10–18	196	171	591	143	115
19–24	6	1	4	2	6
25–59	43	37	34	22	22
60 and over	1	2	2	0	1

The teams' observations during school-based clinics were that participation was much better organised in the elementary schools than in the high schools. In the elementary schools teachers helped to organise the flow of students from each class and made sure consent forms were in order, while in the high schools problems were encountered with student control, patient flow and forging of parent's signatures, which took time away from the purpose of the exercise.

The number of vaccinations at some schools far exceeded the number of students enrolled. This was due to the vaccination of parents and other family members who could not make it to our Saturday outreach clinics. It was also due to the limited amount of time our vaccinators had on island, which made it impossible for them to visit all preschools and daycare centers.

We found that this approach made it possible to increase coverage for other priority target groups in the overall mass H1N1 vaccination campaign, i.e. pregnant women, the elderly and those with chronic illnesses.

Vaccination of babies and toddlers was the official responsibility of the immunisation programme, as well as baby clinics and the community care clinics. Coverage rates in the community care clinics were not recorded as part of this exercise.

Saturday community outreach clinics

Public response during our Saturday community outreach clinics was high for our two locations each week. During week one, tents were pitched on the eastern side of the island coming into town, and during week two, tents were pitched on the western side. Information and educational material in the form of pamphlets and question and answers sessions were provided by medical personnel on site. This allowed staff to address myths and rumours that had been circulating with regard to the vaccine, especially concerning side effects.

Our teams (DMAT and local) were largely made up of medical personnel and both teams carried an emergency first aid bag with them at all times in case of any emergencies on site. These community outreach clinics had the highest cumulative uptake (Table 3). According to the CDC Morbidity and Mortality Weekly Report, it took communities in the mainland US up to three months to achieve the same level of vaccination that we achieved in 12 days. The highest number of vaccines at the clinics on the western side of the island (at the KFC restaurant in Tafuna and in Faleniu) were for people aged 25–29 years (Table 4). The KFC setup included three large tents on an open space in front of the restaurant. The location was chosen because it provided parking and easy access from the main road.

Table 3. Community vaccination clinics, American Samoa, 23 and 30 January 2010

Location	Goal	Number of people vaccinated	Percentage of goal vaccinated
PagoPago	400	361	90%
Fagaalu	400	186	47%
KFC/Tafuna	400	682	170%
Faleniu	400	404	101%
Total	1600	1633	102%

Table 4: Number of vaccinations undertaken at community vaccination clinics on 30 January 2010 by age group

Age group (years)	Community vaccination clinic	
	KFC/Tafuna	Faleniu
0.5–3	49	23
4–9	58	40
10–18	81	54
19–24	59	103
25–59	362	142
60 and over	73	42
Total	**682**	**404**

Lessons learnt

We learnt that extensive planning is key for large scale operations such as the H1N1 vaccination campaign, and it proved to be very important to the success of our operation. Numerous meetings with members of the American Samoa Public Health Department H1N1 planning committee and the Department of Education H1N1 taskforce prepared us to tackle this large scale event. Appearances by local public health experts on television, radio spots, newspaper ads and updates with regards to the H1N1 situation worldwide and locally were organised during the campaign to provide information to the public.

For any future pandemic situations, we learnt that use of a team such as a DMAT should be a basic part of preparedness planning for American Samoa due to the fact that that local staff will be busy with other tasks during a pandemic response and therefore will not be available for a mass vaccination exercise. Unlike larger countries, like USA, American Samoa does not have human resources that could be activated for these roles.

The use of volunteers was considered, but with staff shortages and lack of commitment from others for the time period required, we had to use whichever staff members were available. This involved team leaders keeping in constant contact via phone and moving between two sites when it became necessary to split teams.

The splitting of teams at some of the smaller schools gave us the opportunity to get an early start on schools with a bigger enrolment. We only split teams when the schools were in the same area. When a team was split, two vaccinators and a public health screener would tackle a school with an enrolment of less than 200 (the size of some of our smaller elementary schools) and the rest of the team would start on a nearby school that had a larger enrolment. Constant communication via two way radio and phones between teams allowed for coordination regarding backup supplies and manpower. Often the two teams would end up helping each other. The team that finished first would normally ring the other one to propose assistance. This allowed for much needed rest and food breaks for the staff involved.

Debriefings between teams and their team leaders were conducted at the Immunization Division conference room, where written data were left with our data entry personnel (who doubled as screeners with the teams). Vaccine usage and amounts left over were accounted for and signed back in by the vaccinators and an overall account of the day was discussed.

To improve the flow of people at a vaccination site, it is helpful to have strong visual aids giving direction to people as to the proper sequence of activities rather than depending on busy staff to give direction. This can help cut down on confusion and chaos.

We learnt that age is a critical variable in vaccine administration planning and after-action evaluation, and without a reliable software database for recording it, accurate and timely age data were sometimes unavailable. Approximately 50 per cent of H1N1 vaccination records were missing the client's age. All of incoming consent forms that were missing this piece of information had to be manually verified by staff after hours. It is possible that some clients did not know their date of birth.

The American Samoa Department of Health will continue a vaccination programme for H1N1 amongst schools on the outer islands of Manu'a and Aunuu.

Sharmain Mageo
EPI POC/ Disease Surveillance
Public Health Emergency Preparedness Division
American Samoa Public Health Department