The Christchurch earthquake and its effect on the New Zealand Blood Service processing laboratory

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Abstract
On February 22nd 2011 a 6.3 magnitude earthquake struck the Canterbury region. The earthquake caused widespread damage and multiple fatalities in Christchurch City. The purpose of this article is to describe the impact of the earthquake on the New Zealand Blood Service (NZBS) in Canterbury and to examine the response of the NZBS to the disaster. It deals with the events on the day and also in the days of recovery which followed, with the emphasis being on the processing laboratory in the Donor Centre in Riccarton Road. It also looks at the knock on effects for other NZBS centres around the country, which had to take on extra work while the donor centre was closed. The disaster has also highlighted the need for laboratory emergency protocol to be updated and the need to have ongoing training and drills for staff. New Zealand is a very seismically active country, and earthquakes can strike any time and in any place. All NZBS centres in New Zealand should, therefore, be up to date with the latest emergency plans. Hopefully, Christchurch’s experiences can be used as a model for future disaster management planning.

Key words: earthquake, Christchurch, New Zealand Blood Service, emergency protocol, disaster management

At 12:51pm on February 22nd 2011 Christchurch was struck by a 6.3 magnitude earthquake. Work was going as normal in the Riccarton Road Donor Centre. Many were out at lunch. Machines were half way through their runs. Donors were on the bleeding chairs. The mobile blood collection unit was out at the Millennium Hotel. When the earthquake began, many assumed it was just another aftershock. However, within seconds the ground was shaking so violently that it was not possible to leave the building. After the earthquake most of the staff left the building and gathered in the car park. The ones who remained were tending to machines and donors.

Most of the staff went home or left to pick up children. The mobile phone network was overloaded and the landlines were down, making it difficult to check up on loved ones. Within minutes the streets were gridlocked. Contact could not be made with either the Blood Bank or the mobile unit. Water was off. However power was not lost and news from the television set in the donor rooms gave staff an idea of what was happening in the rest of the city.

Meantime management staff held a meeting to discuss a plan of action. The Coordinated Incident Management System (CIMS) was called into effect and its guidelines followed in the management of the disaster. The NZBS uses the CIMS in the management of disasters. CIMS is used in New Zealand in the management of disasters when several different organisations have to work together to manage the incident. It uses a generic framework that can be adapted for each situation that arises and can be expanded or contracted depending on the scale of the incident.

Over the next few days, much planning and reshuffling took place to ensure the smooth running of operations in Christchurch. The Donor Centre was closed after the quake from 22nd February until the 7th March. During this time all Christchurch donors had to be deferred. Before it could reopen, certain procedures had to be followed. All equipment had to be tested and calibrated. The building itself had to be assessed for safety and repairs made to ensure the building was suitable to work in for staff and donors. The staff themselves had to be assessed for suitability to work and emotional support provided. Meanwhile, contingency plans had to
be in place to ensure product could be supplied to the Blood Bank. The Wellington Donor Centre was to supply South Island Blood Banks. Auckland donor accreditation, took over from Christchurch donor accreditation. The day after the earthquake, Auckland donor accreditation were up until three in the morning getting all the work done, with a new shift starting at six in the morning. With Christchurch out of action, a revised collection plan was published to meet demand for stock. All workshops and courses due to be held in Christchurch were cancelled.

An unexpected problem occurred. The media persistently ran stories about the urgent need for blood donors in Christchurch after the earthquake. Many people phoned in offering to donate. There were so many that the call centre became overloaded and the NZBS website crashed. People were also turning up to donate at the Donor Centre only to find it closed. With facilities unavailable and a sufficient blood supply a media statement was issued that the NZBS had sufficient blood stocks in Christchurch and there was no need for urgent donors. There was relatively little demand for blood in the aftermath of the earthquake.

The week before the laboratory reopened, structural engineers declared the building safe. Later, the building was given a green sticker. Repairs were done and building safety and maintenance checks were signed off. Portaloos were used for about four days until the water came back on and the plumbing was checked. Drinking water had to be boiled.

Staff members were shuffled around the country to help with the demand in new areas. Blood Bank staff arrived from Auckland, donor accreditation and processing people were sent from Christchurch to Auckland and Wellington. On call staff were available to keep the Christchurch laboratory running. Laboratory staff and contracted cleaning staff came in to clean up. External resources and services such as couriers, testers, Canterbury Health Laboratories, Security Company, Datacom, laundry and cleaners were all declared operational. Also Christchurch Airport reopened. This means that blood could easily be transported around the country. Equipment was tested and passed. The mobile equipment was retrieved from the Millennium Hotel with the help of Urban Maintenance in the laboratory was done and the staff went home early. Collections were reduced as all mobiles had been cancelled and plasma collections were cancelled. Staff members were tired and the workload was kept light.

Over the next few weeks collections slowly returned to normal. There were challenges getting the collections up to previous levels. Mobiles started running again, but venues were damaged or being used for other purposes. There were limited beds in the donor rooms. Schools hours had changed and this presented problems for staff availability. Aftershocks were on-going, which had an impact on staff and donors.

The earthquake was very traumatic for Cantabrians. Staff at the NZBS had all been feeling the strain. Problems included lack of sleep due to stress and late night/early morning aftershocks. Roads were damaged and this had affected transport times to and from work. There were also childcare issues, with schools being closed and traumatised children requiring more parental attention. There were problems for staff with damaged houses. Some had no toilets or running water. Insurance claims were taking time. Cantabrians were in a state of constant alert, jumping whenever a truck drove by or a door slammed. There was always the fear of another "Big One".

Pastoral care and access to EAP had been arranged for staff by the NZBS. Staff were been very good at supporting one another during this difficult time. Other centres have also been very supportive, taking on Christchurch's work while the Donor Centre was closed and sending messages of support (and chocolate). All of this was greatly appreciated. Normality is slowly returning in Christchurch as services resumed and the rebuild got underway. In the meantime support for staff is on-going.

The earthquake has highlighted the strengths and weaknesses of our disaster management system. Currently only management is trained in CIMS. When the earthquake struck, many staff members were unsure of what to do. Future plans include giving all staff CIMS training to prevent this happening again. Staff have already been sent information on personal safety during an earthquake by e-mail and an earthquake drill has taken place. Land lines and mobile phone services were also non-functioning or intermittently functioning after the earthquake. To counter this a satellite phone has been issued. Overall, however, the response to the earthquake by NZBS was very speedy and efficient. The main point that has been gained is that in the event of a disaster, flexibility is the key. It is impossible to predict exactly what will happen in a disaster and how to prepare for it. Many of the NZBS staff had to make spur of the moment decisions without referring to management. Examples of this include mobile nurses triaging in town directly after the quake, and dispatch staff sending product when no contact could be established.

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