



New Zealand

Exercise Makgill and Exercise Cruickshank

1. Background

The whole-of-government *New Zealand Influenza Pandemic Action Plan*, published in 2006, summarizes the key preparations being made for pandemic influenza, and outlines the actions to be taken at different phases of a pandemic.

Many government departments have also developed their own sector-specific plans and guidelines.

Details are captured on the Ministry of Health's web site.¹⁵

In order to practise and assess the implementation of response plans and to inform future work priorities, the Ministry of Health co-coordinated a national whole-of-government pandemic exercise programme in 2006–2007. This consisted of two exercises, *Exercise Makgill* and *Exercise Cruickshank*.



Community-based assessment centres were established for assessment of possible influenza cases, *Exercise Cruickshank*.

2. Objectives

The exercises took place over six days in 2006–2007 with the aim of practising the plans set out in the *New Zealand Influenza Pandemic Action Plan* and testing the intersectoral response at all four stages laid out in the plan. The exercise days incorporated intersectoral responses at the national, regional and local levels.

The overall objective of the exercises was to strengthen intersectoral readiness to keep out, stamp out, manage and recover from pandemic influenza in

accordance with the *New Zealand Influenza Pandemic Action Plan*.

In addition, there were specific objectives for each response phase:

- 'Keep it out': strengthen intersectoral action to keep pandemic influenza out of New Zealand by practising the implementation of Scenario 5.1 of the *New Zealand Influenza Pandemic Action Plan* focusing on border management;
- 'Stamp it out': strengthen intersectoral action to control initial clusters of pandemic influenza in New Zealand by practising the implementation of Scenario 5.2 of the *New Zealand Influenza Pandemic Action Plan*;
- 'Manage it': strengthen intersectoral action to manage pandemic influenza with a 40% incidence rate and a 2% case fatality rate by practising the implementation of Scenario 6.3 of the *New Zealand Influenza Pandemic Action Plan*;
- 'Recover from it': identify and document issues, roles and functions that will need to be addressed when recovering from pandemic influenza with a 40% incidence rate and a 2% case fatality rate.

Additional subobjectives were set under the above groupings.

3. Participating agencies and organizations

Exercise Makgill focused on action within the health sector, and involved national and district health sector agencies.

Exercise Cruickshank involved participation of and input from a large number of agencies over the exercise days (see Table 11).

¹⁵ New Zealand Ministry of Health web site: Pandemic Influenza (<http://www.moh.govt.nz/pandemicinfluenza>, accessed 23 May 2008).

Table 11
Exercise Cruickshank participants

Health sector
Ministry of Health
District Health Boards
Institute of Environmental Science and Research
District Health Board public health services
ambulance services
Central and local government agencies
Aviation Security Services of New Zealand
Te Puni Kōkiri
Civil Aviation Authority
civil defence groups of local authorities
Department of Corrections
Department of Internal Affairs
Department of Prime Minister and Cabinet
Inland Revenue Department
Ministry of Agriculture and Forestry
Ministry of Civil Defence and Emergency Management
New Zealand Defence Force
Ministry of Economic Development
Ministry of Education
Ministry of Foreign Affairs and Trade
Ministry of Justice
Ministry of Social Development
Ministry of Transport
New Zealand Customs Services
New Zealand Fire Service
New Zealand Police
Reserve Bank of New Zealand
State Services Commission
The Treasury

4. Type of exercise

This was a full-scale exercise, including discussion, table-top, functional, and drill components at national and local levels.

5. Preparation of the exercise

The Ministry of Health developed the exercise programme over a nine-month period with input from

intersectoral and health sector advisory groups, and the Intersectoral Pandemic Planning Group.

Exercise documentation included:

- instructions for exercise facilitators and evaluators at different sites
- national coordinating and general instructions for exercise participants
- production of exercise national evaluation reports.

Each participating agency was tasked with developing its own general instructions for its own organization or sector, based on the national resources noted above.

6. Conduct of the exercise

6.1 Exercise Makgill

Exercise Makgill was carried out on 9 November 2006 over a 12-hour period. The exercise assessed the health sector's ability around the cluster control ('stamp it out') stage of response to a pandemic. This exercise used a table-top approach to simulate the events that could arise during a real pandemic event.

The report from *Exercise Makgill* is available from the Ministry of Health web site.¹⁶ The report contains the lessons from *Exercise Makgill*, and these were used to advance planning and preparedness for response to a pandemic and to facilitate the more efficient and effective delivery of *Exercise Cruickshank*.

6.2 Exercise Cruickshank

Exercise Cruickshank was a whole-of-government influenza pandemic exercise led by the Ministry of Health. The exercise was held over 5 days in May 2007.

6.2.1 Exercise Cruickshank Day One

The scenario for Day One of *Exercise Cruickshank* was that the avian influenza virus (H5N1) was infecting and killing people in many countries and had developed into a form that could be transmitted easily between humans. The new virus had developed overseas in a part of the world where disease surveillance was poorly developed. Fatalities from influenza were initially lost against the background of deaths from other infectious and respiratory diseases so it was not immediately apparent that people were dying from influenza.

By the time the disease was recognized and confirmed, it had spread to other countries in that continent. Early cases were also found in countries in another

¹⁶ *Report on Exercise Magill*. Ministry of Health, New Zealand, November 2006, ([http://www.moh.govt.nz/moh.nsf/pagesmh/5217/\\$File/report-exercise-makgill-nov2006.pdf](http://www.moh.govt.nz/moh.nsf/pagesmh/5217/$File/report-exercise-makgill-nov2006.pdf), accessed 26 May 2008).

region, and among foreign aid workers returning from these areas to their European home countries.

Within days of the announcement of this outbreak confirming human-to-human transmission, and with no previous warning, an Asian country with which New Zealand has significant trading and tourism links announced that influenza cases had been identified in several of its cities over a short time.

The virus did not appear to have a particularly high reproductive rate, and the scenario stated that transmission was principally between family members and non-familial close contacts. However, between 5% and 10% of cases died relatively quickly despite receiving treatment.

New Zealand took prompt action. The government directed that active border management operations should be established at all international points of entry. Day One of the exercise practised real-time decision-making concerning the controls to be put in place, and the implementation of such relevant actions at the border.

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6.2.2 Exercise Cruickshank Day Two

The scenario for Day Two of *Exercise Cruickshank* was that the influenza pandemic was spreading overseas.

New Zealand was maintaining border management operations.

Four clusters of cases appeared more or less simultaneously in widely spread places across New Zealand. The cases appeared to be recent arrivals from an unaffected country. The affected District Health Boards and Public Health Units started cluster control operations. The government announced that every effort would be made to eliminate the clusters before the disease spread into the general population.

The virus overseas appeared to have a slightly lower case fatality rate of between 3% and 7% but a slightly higher reproductive rate than was previously the case. The nature of the virus in New Zealand was not known at this time.

The exercise practised the implementation of public health controls to control and eliminate clusters, includ-

ing the tracing, treatment and quarantine of contacts and closure of schools in affected areas.

6.2.3 Exercise Cruickshank Day Three

The scenario for Day Three of *Exercise Cruickshank* was that pandemic influenza had escaped control and started to spread to the general population.

District Health Boards established community-based assessment centres. National reserve supplies of antivirals were mobilized, and the community-based assessment centres were established for the assessment of possible cases and for dispensing antivirals and antibiotics.

Other agencies were focused on maintaining critical services, and directing or co-coordinating responses in their sectors or organizations. This included the education, civil defence, welfare, corrections, fast-moving consumer goods and critical infrastructure sectors.

6.2.4 Exercise Cruickshank Days Four and Five: the initial recovery phase

The scenario for Days Four and Five of *Exercise Cruickshank* was that the pandemic was on the wane.

Crèches, kindergartens, schools, colleges, universities, public libraries and video stores were reopened. More planes were flying, although international passenger traffic was at 20% of its normal level, and was expected to recover to normal levels only slowly. This has a continuing impact on trade, particularly imported supplies for industry, and tourism.

Power, water and sewerage services were maintained during much of this period, although outages were becoming more common because maintenance had been deferred.

Telephone, text and e-mail communication was heavy as people tried to keep in touch with each other.

The epidemiology of the disease in New Zealand was much the same as in other countries. All health services were badly affected. More and more health workers were returning to work, but normal health work continued to be hampered by shortages in critical supplies.

Given the uncertainties around the recovery phase, Day Four of the exercise consisted of 22 workshops exploring recovery issues, interdependencies and actions. Feedback from the workshops was pulled together and presented for further discussion at a national workshop.

6.3 WebEOC

As part of the *Exercise Cruickshank* planning and preparation phase, the Ministry of Health piloted the web-based emergency management software system WebEOC for testing communications and reporting within the health sector.

7. Evaluation

The Ministry of Health, in consultation with the Health Sector Advisory Group and the Intersectoral Advisory Group, developed exercise-specific objectives and performance indicators to measure the performance of exercise play during the exercise days. A suite of tools was developed to assist with the evaluation of exercise play against the objectives and performance indicators.

Results are based on feedback and comments received from participants, evaluators and facilitators through:

- participant and observer evaluation templates
- evaluator assessment reports
- debriefings.

The information collected during *Exercise Cruickshank* was evaluated and analysed using quantitative and qualitative processes. Judgement was used to draw conclusions and identify the cause of problems identified in the comments. The national *Report on Exercise Cruickshank* is available online.¹⁷

While *Exercise Cruickshank* was undertaken by a large number of agencies throughout the health and non-health sectors, the analysis in this section focuses on national trends or findings common to all exercise participants. Individual agencies had the responsibility to develop reports specific to their agency or organization and sector.

8. Lessons learnt

8.1 Preparation for and conduct of the exercise

Overall, the feedback on the role of exercise control (that is, the staff responsible for developing, managing, evaluating and documenting the exercise) before and during the exercise was positive. Figure 2 summarizes the feedback ratings from participants, and shows that more than 85% of participants agreed this was a well-planned and well-executed exercise that benefited the participating organizations.

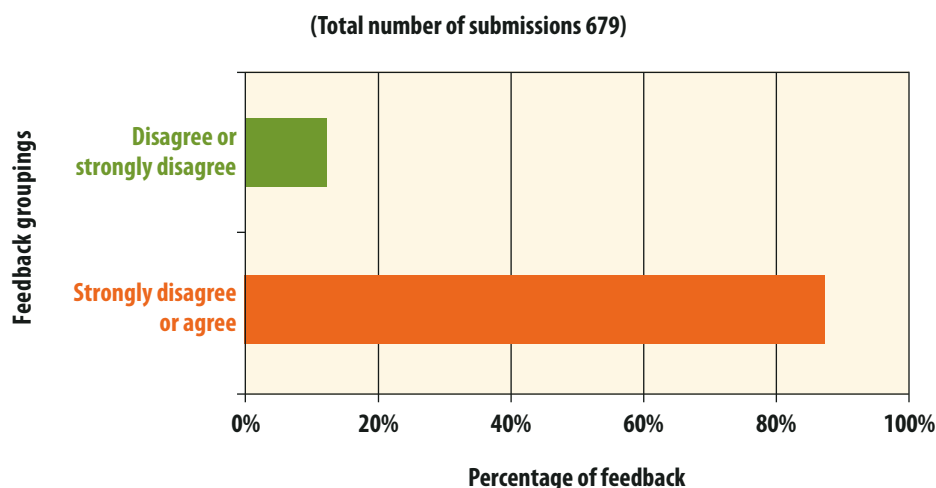
8.2 Pandemic preparedness

Exercise Cruickshank was the largest exercise of its kind to be conducted in New Zealand. It successfully practised the four stages of a pandemic response across more than 40 government agencies at local, regional and national levels in New Zealand. It allowed many sectors to practise their roles in the response to this kind of event, and created improved emergency communication and network links between organizations.

8.2.1 Areas of strength

- Day One: Border management: The border management deployment exercise was successfully carried out.

Figure 2 Summary of exercise participant feedback



¹⁷ *Report on Exercise Cruickshank*. Ministry of Health, New Zealand, October 2007, (<http://www.moh.govt.nz/moh.nsf/indexmh/exercise-cruickshank-report-oct07?Open>, accessed 9 June 2008).

- Day Two: Cluster control: The table-top deployment exercises carried out on Day Two demonstrated that cluster control operations could be initiated effectively across the health sector. Procedures in prisons and schools were successfully tested.
- Day Three: Pandemic management: The setting up of community-based assessment centres was successfully practised in several District Health Boards. The exercise demonstrated that the health sector can establish and resource these facilities in a timely manner when required. Key critical infrastructure companies were engaged in order to test communication processes. Excellent liaison occurred between District Health Boards and civil defence groups in many areas.
- Days Four and Five: Recovery: Representatives from many agencies attended workshops across the country to discuss the issues likely to arise during the recovery phase of a pandemic. The discussion workshops were well attended and there was an enthusiastic level of engagement from all participants. Issues were identified and suggestions were made about how to address the issues in the recovery plans for a pandemic situation. These are discussed in more detail in Section 5 of the report.

8.2.2 Key areas for improvement

Improve information collection and dissemination

Key issues that need to be addressed include:

- additional training for staff on how to complete a situation report and other reports;
- further development of WebEOC (web-based emergency management software) as a tool for collecting and disseminating information;
- stress testing of public information systems to deal with a large volume of requests (e.g. the Ministry of Health web site and telephone helplines);
- the development of integrated procedures for disseminating information to specific communities.

Improve agency emergency response procedures

Key issues that need to be addressed include:

- ongoing training on the coordinated incident management system for relevant staff, and fast-track orientation programmes for staff in emergency operation centres;

- clearer definition of the roles and responsibilities of different advisory or decision-making groups in a pandemic response;
- identification of generic single points of contact in each agency for emergencies in general.

Advance the progression of emergency-related legislation

Relevant agencies should prepare Orders in Council, as provided in section 11(1) of the *Epidemic Preparedness Act 2006* and requested by Cabinet in October 2006, to modify existing legislation to enable greater flexibility during a pandemic emergency.

Advance planning for public health controls

The implementation of border and cluster control operations lies at the heart of the 'keep it out' and 'stamp it out' phases. Agencies successfully mounted such operations during the exercise, but this placed great pressure on resources, raising issues about the sustainability of operations over a longer period. However, public health services noted great improvements since *Exercise Makgill*, which tested the 'stamp it out' phase of a pandemic response.

Key issues that need to be addressed include:

- sharing lessons learnt to enhance local planning
- advancing the intersectoral border management work programme.

Advance planning for community-based assessment centres

Maintain the national working group in order to advance planning.

Advance planning within sectors

Many other agencies were actively engaged during the exercise. In general, the sectors most affected by a pandemic event would be those concerned with social, critical infrastructure and economic matters. These are the agencies that need to ensure they have effective and appropriate pandemic plans. Many agencies with an interest in social, economic, foreign affairs and trade issues took part in the exercise, in particular the policy discussion exercises, and now need to advance their pandemic planning within the context of emergency and business continuity planning as a whole.