Health Emergency Management in New Zealand

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Disasters with a double whammy

Perhaps it is just a coincidence, or has nature got into the habit of kicking the afflicted while they are down? First, Katrina roared over the southern United States, did its business and left behind a nasty flood that brought New Orleans to its knees. Then while New Orleans was still being pumped out, Hurricane Rita whistled by, upsetting Texas and beyond and disrupting the resources aimed at Katrina recovery efforts.

Still in the Caribbean, Hurricane Stan dallied in the Gulf of Mexico, slowed to a "gentle" storm and sauntered ashore in Guatemala and southern Mexico. The rain from Stan was survivable; the huge mudslides that followed were not; hundreds of Mayan villagers were buried alive. The official death toll is over 1000 but the numbers are estimated to be far higher. While the death toll in neighbouring countries was not as high , tens of thousands lost their homes across Central America and southern Mexico. Corn fields and homes were ruined, so the survivors of the rains face even deeper poverty in an area where, in the best of times, they have only a tenuous hold on life. Now, Hurricane Wilma, dubbed the fiercest of all, is headed in the same direction and is forecast to dump more rain on an already battered area.

Did you miss Stan? It was not hard to do so. This has been a bumper year for hurricanes. The formation of Wilma meant the hurricane centre has reached the end of its seasonal list of male and female names. Wilma is the 21st tropical cyclone of the Atlantic season, tying the record for most storms set in 1933. It is the 12th hurricane and also ties the record for most hurricanes in a season, set in 1969. The season still has six weeks to run. If more tropical storms form this season, forecasters will begin using the Greek alphabet, starting with Alpha.

Besides, the world media was focussed on the "Kashmir mountain tsunami" of October 8th The epicentre of the earthquake was near Muzaffarabad, the capital of Pakistani-administered Kashmir. But it was also felt across the Indian-held part of the disputed territory, in Afghanistan to the north, and as far south as India's capital, Delhi.

Earthquake survivors are now battling with unseasonable torrential rain and hail which is hampering relief efforts, grounding helicopters and causing fresh landslides. The rain also heralded a marked drop in the temperature and priorities have quickly shifted from rescuing the injured and feeding survivors to providing shelter before the winter snows arrive. The earthquake has been devastating for its victims: most of them poor subsistence farmers, whose economic contribution is small and who have no resources to fall back on. With even flimsy tents in short supply, winter snows will continue to exact their toll, long after our attention has shifted elsewhere.

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Inadequate shelter for a harsh winter

Recent single disasters in developed countries have quickly skipped out of our attention span. Floods in Europe, forest fires in Portugal and the United States, floods this week in New England; and so the list goes on. The difference seems to be that all these events have been in developed countries with the wealth and resource to recover and they have not been knocked over again during their recovery.

The horror of a mud slide is hidden deep under the surface

The current strategy for containing avian influenza is an immediately wide spread culling of flocks, infected or not. That is fine as long as there is an alternate food supply. When the next earthquake or other calamity visits a newly infected area, telling the poor and hungry to kill their domestic poultry will be an exercise in futility. An empty belly is a stronger motivator than the risk of a possible disease some time in the future. Yet we in the richer countries seem quite prepared to let the poor in developed countries endure a second calamity to protect us from our own vulnerabilities.

I'll believe that is not so when you can show me the contingency plans in place to feed such people. Have you noted that "experts" have identified northern Africa—at the end of the migratory bird path—as the next high risk area?

It is an ugly truth that tragedy falls disproportionately on the poor. Diarrhoea kills millions of people every year in developing countries, but few in the rich ones because of clean water and the easy availability of elementary drugs. Floods kill tens of thousands across Asia, Africa and South America every year – but, Katrina aside, seldom more than a few hundred in North America or Europe. And so it is with earthquakes. The recent quake in Kashmir was of magnitude 7.6, yet may have killed 40,000 people or more. The earthquake in Gujarat in India in 2001, which was of similar magnitude, killed some 20,000. Yet a quake in Taiwan in 1999, larger than Kashmir's, killed only 2,300, even though it happened in a heavily populated areas The Kobe earthquake of 1995 happened in one of the most densely populated places on earth, and killed only 6,400.

The reasons are obvious enough: stringent building codes, more rigorously enforced; and more rapid and effective rescue efforts after the event. Such things, of course, cost money. And for poor countries like India and Pakistan, there are a thousand urgently competing priorities for extremely limited government resources. Both countries have rapidly increasing populations, and cheap housing is in huge demand. Literacy, sanitation and electrification might all very well be considered better uses of taxpayers' rupees than guarding against disasters that could strike anywhere, or not at all.

Perhaps earthquakes are simply too mercifully infrequent, and too expensive a problem to be worth poor countries doing very much about? After all, in the last 25 years, earthquakes have killed "only" about 500,000 people worldwide—300,000 of them in the tsunami on December 26th last year. Yet 2m children under the age of five die every year in India alone, mostly through poor nutrition or bad drinking water.

It is an additional tragedy for Kashmir that the earthquake has not called forth a generosity of spirit from the rulers of Pakistan and India. India did immediately offer to send relief supplies but Pakistan was slow to respond and the control line dividing Indian from Pakistani administered Kashmir remained closed.

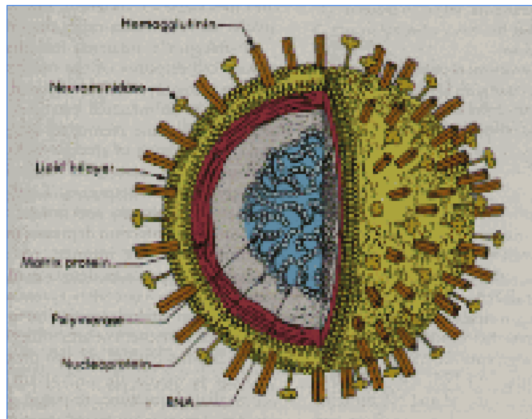
Food is vital for survival, medical help is secondary

India proposed joint search-and-rescue operations across the line, but was rebuffed. Likewise an offer of helicopters, more urgently needed than anything else, was not taken up, apparently for fear of the symbolism that Indian army uniforms on Pakistani soil would represent.

This is contrary to the common experience. Commonly, natural disasters have one redeeming feature—a halting of bitter conflict to respond to a shared crisis. May this yet be the experience in Kashmir. **§**

Secrets of 1918 flu virus revealed

The 1918 had many casualties. One was an Alaskan woman whose body was interred in the frozen ground. Now, using samples taken from her lungs and from autopsies of others among the estimated 50m people killed by influenza that year, the genetic sequence of her slayer has been identified. This sequence has allowed researchers to reconstruct a simulacrum of the 1918 virus. Since this August, the reborn virus has been held in controlled conditions at the Centres for Disease Control and Prevention (CDC) in Atlanta, Georgia.



The influenza virus is a complicated little beast

This month *Nature* published the last part of the virus's genetic sequence, completing a decade-long effort by Jeffery Taubenberger and his team of scientists at the Armed Forces Institute in Maryland. The reconstruction of the live virus, announced simultaneously in *Science*, was done by Terrence Tumpey at the CDC and a group of researchers at the Mount Sinai School of Medicine in New York. The sequenced bits of the virus were spliced together and transferred into bacteria. The bacteria were then inserted into cultured cells and the viral genetic material reorganised itself to form a real virus.

The 1918 virus was very different from the viruses that caused more recent pandemics in 1957 and 1968. In those latter years, normal human influenza viruses became particularly virulent because they acquired two or three extra genes from an avian influenza strain. In 1918, it seems that the virus was entirely avian in origin. In other words, a bird-flu virus crossed to humans and adapted to them.

Dr Tumpey's team have created many genetic variants of the 1918 virus, in which they replaced its genes with their equivalents from more ordinary flu strains. This allowed them to identify which genes were responsible for making the 1918 virus so virulent, as each new variant was tested on mice, chicken embryos and human lung cells. In the 1918 virus, for example, a particular version of the gene that encodes haemagglutinin, which is found in the virus's outer coating, was essential for the development of severe pulmonary disease.

Work on the genetics of influenza is important for many reasons. Studying the links between genetic changes and changes in the way the virus behaves is likely to help in the process of choosing effective countermeasures against emerging strains and in finding ways of designing better vaccines. The research might even lead to the development of antiviral drugs that work by interfering with the genes responsible for producing virulence in pandemic viruses.

Another intriguing possibility raised by Dr Taubenberger's team is that avian viruses may adapt to humans in a predictable sequence. It seems likely that only a small number of genetic changes were required to turn bird flu into the 1918 pandemic. And it turns out that such genetic changes are also found in other human-pathogenic strains of avian viruses, such as H7N7 and H5N1.

If these mutations are what allow the avian virus to replicate more easily in human cells, then it might be possible to generate a genetic "check list" of dangerous-looking mutations that would allow virus surveillance to be far better focused than it is today. Indeed, H5N1 is already picking up the kinds of mutations that made the 1918 virus dangerous. The researchers think it possible that forces similar to those at work in 1918 are driving H5N1 down a similar evolutionary path. Every time the virus infects a human, or even another mammal such as a pig or a dog, viral replication will generate further genetic changes and some of these will make the virus better at breeding in people. The one bit of good news is that it does not appear that H5N1 is very far along this path yet. The relevant mutations are still scattered among different strains. A little comfort for now, but for how long? §

Wild Bird Migratory Patterns

The outbreak of H5N1 in Greece, Turkey and Romania should be no surprise. The wild bird migratory patterns are indicated in an Emerg Infect Dis paper, *Mallards and highly pathogenic avian influenza ancestral viruses, northern Europe* by Munster VJ, Wallensten A, Baas C, Rimmelzwaan GF, Schutten M, Olsen B, et al.

The sample locations Öland (Sweden) and Lekkerkerk and Krimpen a/d Lek (the Netherlands), where the authors did their research, are marked with asterisks.

In a somewhat technical paper, the authors concluded that because HPAI outbreaks in poultry find their origin in LPAI viruses present in waterfowl, influenza A virus surveillance in wild birds could function as an early warning system for HPAI outbreaks. Wild bird surveillance would also be relevant for HPAI viruses that represent pandemic threats. §

The Enigma of Rabaul

Robert Patton

I recently visited Rabaul on the Papua New Guinean island of New Britain. You might recall a massive volcanic eruption there about ten years ago that destroyed the city and caused the evacuation of 30,000 people. I remember reading about the inspiring (at least for an emergency management planner) events that led up to the successful evacuation with the loss of only three lives. Far better than in an earlier 1937 major eruption where 500 people died.

Planning and preparations for a large volcanic event began in about 1983 when the volcano started to show signs of erupting again. The local population were informed of the hazards; the different types of eruptions that could occur, where the highest risk areas were and where there were safe havens. An evacuation plan was developed and communicated; a warning and communication system was established and evacuation routes identified. Once the plan was in place and everyone knew about it, people practised evacuating, including what to bring and how best to mobilize their community resources in an emergency.

Besides the careful planning, preparation and practise that resulted in low loss of life, there was one other factor. Observant elders, survivors of the 1937 eruption, noticed several strange occurrences that had also preceded that long-ago blast. These included the ground shaking vertically rather than horizontally; megapod birds suddenly abandoning their nests at the base of the volcano; dogs barking continuously, scratching and sniffing the earth ; and sea snakes crawling ashore. These signs provided an early warning and the evacuation commenced before an official evacuation notice was given. As the last people were leaving the hazardous areas, volcanoes on both sides of the harbour began erupting.

As I flew into Rabaul I saw a large cone-shaped, charcoal-coloured mountain spewing out large clouds of smoke and ash. A day later I visited the Volcanic Observatory, where a fine layer of volcanic dust covered everything and the air was pungent with sulphur. As I watched, the observatory seismograph sprung into action, measuring movement on the mountain flanks; the fine wire rocketing backwards and forwards across the graph paper. I went outside and watched as a fresh plume of pollutants rose skyward and lazily drifted sideways in the breeze. Directly below me was the old township of Rabaul where movement appeared to be purposeful and productive. I asked about this and was told that the population who had been relocated across the bay at Kokopo were now dismantling their recovery-package homes and moving them to where their old homes had stood.

I have pondered upon what I have read, what I have seen and what I have heard. The wisdom of local elders, based on their previous experience; the forethought and preparation initiated by a local community; the successful implementation of a carefully practised plan; and then the movement of people back into an area of known hazards. How do you explain this? I have no answer, other than the ancestral roots and links with the land are very strong. They have shown that in the past they can beat the volcano; maybe they can do it again in the future. §

Rabaul from Kokopo

Rabaul township under "ash attack" bad day (above) - better day (below)

An example of natural and man-made hazards – volcano in background and sunken Japanese warship in the foreground

Waikato overcomes Blackout

With ever increasing demand and the fragility of our electricity reticulation, the loss of power is a hazard for which we must all be prepared. Hospitals with installed generators have some comfort against these outages and usually essential services can be maintained. But sometimes our back up supply does not perform.

> As the supply failed, hospital generators started, or tried to start, then failed, leaving only those areas served by UPS systems with any electrical supply.

Just before midday on Friday the 11th March 2005 external contractors damaged a WEL Networks cable. This cable is the mains feed to the Waikato Hospital site. As the supply failed, hospital generators started, or tried to start, then failed, leaving only those areas served by UPS systems with any electrical supply. With no electricity, the water pumping system also stopped working.

All lifts stopped working; most with people trapped inside. Water for toilets and hand washing was immediately limited. Other than battery driven emergency lighting, there was no lighting in internal rooms, including operating theatres and Delivery Suite. All critical equipment on UPS or battery back-up continued working with a limited life.

This significant incident had a major impact on hospital services, including:

- The need to move a number of ICU patients into the Operating Theatres;
- The need to limit water use;
- Dialysis patients being taken off their machines for a period of time;
- Cancellation of afternoon theatre lists and some outpatients clinics;
- Patients trapped on level 4 of Waiora Building (Radiology);
- The need to manage the 'front door', including requesting the Accident and Medical Clinics to take all but the most acute patients if possible.
- The kitchen having to move to a cold menu, using disposable plates and cutlery (for a day and a half) and the need to walk meals up to all the wards as the lifts were out of action.
- The laundry had to stop operating.

The hospital activated its major incident plan and WEL Networks appointed a Project Manager to manage remediation of the situation. Final repairs were completed at 23.00 the following night and following a period of 'energising', normal supply to the hospital was restored at 08.30 on the 13th - 45 hours after the supply was cut.

When power was lost the hospital boiler shut down for a short period of time due to low water levels. The remaining functioning generator was utilised to maintain water supplies to the boiler. An alternative generator was ordered from Auckland and connected during the course of Friday evening. From then the hospital remained on limited supply with emergency generator backup until Sunday morning. The protection settings on the alternative 11kV cable were increased to guard against the danger of further loss of electricity supply.

The hospital response included:

- A 'stock-take' of key critical areas to gain an immediate and projected status;
- Regular communications with staff, including asking clinical staff to return to their home areas until further notice;
- Regular checking of key areas;
- Cancellation of afternoon theatre and outpatient lists;
- Clinical planning for management of patients needing acute intervention;
- Informing neighbouring DHBs;
- Media updates;
- Change of menu and move to disposable plates and cutlery;
- Radio messages to the public re what had occurred and asking them to avoid coming to hospital unless absolutely necessary;

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Waikato Hospital—fully reticulated with a demonstrated capacity to overcome electricity failure, overlooks the potential source of a bigger crisis.

(Continued from page 5)

- Liaison with St John and Accident and Medical Centres re management of the 'front door';
- Provision of light sticks and torches for darkened stairwells and internal areas;
- Initial and ongoing risk identification and assessment;
- Development of a plan for gradual loading when supply restored;
- People assigned to buildings/services to make sure the messages were getting through;
- Liaison with the Fire Service as fire alarms were out and there was limited water supply.
- Track costs using the emergency management cost code.

The Waikato site, which has three generators - started at least monthly to ensure their availability - normally copes with electricity outages. What went wrong?

One generator suffered from water in the fuel supply; another generator suffered a faulty voltage control system that prevented it from successful operation; and the third generator tripped when presented with an excessive load.

The clinical and technical staff response to this incident was rapid, professional and effective. Back up support provided by WEL was excellent and remediation took place as quickly as possible. This was put to the test and proved the following Wednesday when another electrical failure blacked out most of Hamilton. On this occasion the operation of two emergency generators, and the changeover, occurred without fault and the Hospital continued its services without interruption.

This incident identified a number of key issues for Waikato. These key issues are relevant for many of our hospital campuses

With the loss of the main 11kV supply the alternative supply does not provide adequate security for full business operation.

The emergency standby generation, although functional, is of an obsolete design and set up as was installed in the 1960s. Thus it is unwise to place much reliance on the correct operation of the emergency generation system.

There is a looming deficit in the ability of the 11kV system to supply the hospital as natural load growth continues based on clinical improvements and the creeping load.

> New technology seems to have one given, a significant increase in electricity demand.
>
> At Waikato one new building may alone increase the campus energy load by 60%

Planned major projects will significantly increase electricity demand. At Waikato one new building may alone increase the campus energy load by 60%.

Electricity is essential for our continued operation. No matter how well we respond on the day we are vulnerable without a robust alternate supply. New generators and multiple mains feeds are expensive yet, as New Orleans has shown us, turning a blind eye to our vulnerabilities can be far more costly. §

Mixed Messages from US on Avian Flu Threat

The U.S. administration is sending mixed signals on the threat from bird flu, with President George W. Bush urging mass production of vaccines while his health secretary played down the risk of a pandemic. President Bush met U.S. manufacturers to urge them to come up with ways to mass produce a vaccine for the H5N1 avian influenza virus. Whether he was aware that vaccines take months to formulate and manufacture, and they must match the flu strain fairly precisely to be of any use, so they cannot be made ahead of an epidemic, is unclear.

The head of the U.S. Centers for Disease Control and Prevention has said an influenza pandemic that could kill millions is certain and may be imminent. However U.S. Health and Human Services Secretary Michael Leavitt, while urging preparations for a possible outbreak, said the risk is relatively low and a pandemic probably would not happen.

"The probability that we'll have a pandemic flu is unknown," Leavitt said at a Washington health technology conference. "I will tell you from all I hear from scientists and physicians it is relatively low, but it is not zero." The risk is high enough that the United States should be prepared, he added. And it is not. "Here's the dilemma: we're not prepared as a country. No one is prepared in the world. We're not alone in this," Leavitt said.

"H5N1 may happen, but it probably won't. If it does we need to be better prepared." At the moment the United States has only enough anti-viral drugs to cover less than 1% of the population, according to some estimates. (Which makes New Zealand's planned stockpile of sufficient for 20% of the population look very good)

Of course where there is a headline, there is a political opportunity. Bush, whose standing was hurt by the slow federal reaction to Hurricane Katrina last month, appeared determined to scotch criticism that he is acting too slowly over the flu threat. Some members of Congress want faster action. The Democrats have introduced legislation to establish a White House "director of pandemic preparedness and response." Politically, that is one bird that is never going to fly.

Confusing? Perhaps not; there is truth in all that has been said and anyone familiar with the issues will put appropriate weightings on what is being said. Unfortunately the general public is not familiar with issues.

Our media operate in a global village. Sub editors looking for a new spin will always focus on differences. An informed public must have access to all points of view. It is our job in health to make sure our spokespeople and the community leaders we brief are able to offer simple consistent messages to our communities. §

"Killer germs" lurk in the ice cap

As we progress through a period of global warming and melting ice caps scientists are uncovering forgotten bacteria lurking in the back of the fridge. Ice sheets are mostly frozen water, but they can incorporate organisms such as fungi, bacteria and viruses and they could be released as ice sheets drip away and bacteria and viruses defrost. Common viruses such as human influenza could have a devastating effect if melting glaciers release a bygone strain to which we have no resistance. Species unknown to science may re-emerge putting humans, animals, plants and marine creatures at risk.

. . . . this common plant pathogen had survived being entombed in ice for 140,000 years.

. . . . his team found the human influenza virus in one-year-old Siberian lake ice.

In 1999, Scott Rogers from Bowling Green State University in Ohio and colleagues reported finding the tomato mosaic tobamovirus (ToMV) in 17 different ice-core sections at two locations deep inside the Greenland ice pack. Gentle defrosting in the lab revealed that this common plant pathogen had survived being entombed in ice for 140,000 years. "ToMV belongs to a family of viruses with a particularly tough protein coat, which helps it to survive in these extreme environments," says Rogers. Since then he has found many other microbes in ice samples from Greenland, Antarctica and Siberia. And this has turned out to be just the tip of the microbial iceberg.

Over the past 10 years biologists have discovered bacteria, fungi, viruses, algae and yeast hibernating under as much as 4km of solid ice, in locations all over the world. Most recently Rogers and his team found the human influenza virus in one-year-old Siberian lake ice. "The influenza virus isn't as hardy as ToMV, but this finding showed it is capable of surviving in ice," says Rogers. This particular strain of influenza had only hibernated for one year, and doesn't present much of a threat to humans, but it shows that there is potential for a human virus to survive the freezing process for much longer.

Not all scientists are convinced by these viral discoveries, and some argue that they are more likely to have arrived in the ice through contamination during the drilling process. However, Rogers is confident this is not the case. "We use a chemical called sodium hypochlorite to decontaminate the outer ice surface, which is then followed by extraction or melting of an interior section of the core."

So if these viruses have been huddled in the ice for thousands of years, how did they get there in the first place? Rogers says one effective way for viruses to travel the world is to hitch a ride in the stomachs of migrating birds. Others could include riding on aquatic mammals such as seals, clinging to grains of dust, or water transport via rivers and ocean currents.

"Humans have been more prevalent in northern areas for a long time and so human viruses are more likely to have been frozen into Northern Hemisphere ice sheets," says Dany Shoham, one of Rogers' colleagues from Bar-Ilan University in Israel.

Humans have lived close to glaciers in the European Alps, to frozen fiords in Scandinavia and frosty Siberian lakes for thousands of years, making it an easy hop for viruses looking for a place to hibernate for a while. But Shoham says this doesn't mean the ice sheets of the Southern Hemisphere don't contain viruses.

Thankfully, not all viruses will remain viable after thawing out from hibernation in an ice sheet. "We routinely keep viruses at minus 80C when we want to store them in the lab, so viruses can certainly survive freezing, but they are often fragile to processes such as freeze-thaw," explains Geoffrey Smith, head of the virology department at Imperial College, London.

In the lab it is possible to defrost viruses gently, but outside they are subject to climatic extremes. Only viruses that contain the tough protein coat, like ToMV, are likely to be able to retain all the information they need while being repeatedly frozen and defrosted. This rules out plenty of human viruses, but still leaves a few nasty options including smallpox, polio, hepatitis A and, of course, influenza.

Shoham believes the influenza virus is the most likely to emerge from the freeze/thaw process in a fit enough state to re-infect humans. An ancient version of human flu could be very potent and more dangerous because the natural herd immunity is reduced over time, "After just one or two generations the natural herd immunity is eliminated," Shoham says.

Waterborne viruses such as hepatitis A and polio are less of a threat because they rely on water currents to reach their victims. One worrying scenario would be the creation of a super-virus by ancient and modern strains recombining. "If only one or two genes from an ancient influenza virus interchange with the modern avian influenza, it could become contagious and generate a new pandemic," says Shoham.

Some scientists are not too concerned; they are more interested in getting on top of the number of dangerous viruses around today. May be they are right, may be not. This is just another strand in the pot pouri of uncertainty on the source of our one certainty - the next pandemic. §

Altered Standards of Care in Mass Casualty (and Pandemic) Events

Much has been accomplished in the past few years to improve our preparedness to mass casualty events. Hospitals now regularly factor in and include an enhanced surge capacity in their response plans. Many of these plans assume that even in large scale emergencies, health care will be delivered according to established standards of care and that health systems will have the resources and facilities needed to support the delivery of medical care at the required level.

However, it is possible that a mass casualty event – or a pandemic – could compromise the ability of the health system to deliver services consistent with established standards of care.

Therefore, it is critically important to identify, plan and prepare for making the necessary adjustments in current health and medical standards of care to ensure that the care provided results in as any lives being saved as possible.

With pandemic planning in full flight the publication of a new document, ***Altered States of Care in Mass Casualty Events***, is very timely. Prepared for the Agency for Healthcare Research and Quality it is freely available for downloading. The document brings together the findings from a meeting last August of experts in the fields of bioethics, emergency medicine, emergency management, health administration, health law and policy, and public health. While the focus was bio terrorism affecting tens of thousands, the findings provide a foundation for our planning to care for many thousands in a pandemic.

The key findings are:

- The goal of an organised and co-ordinated response to a mass casualty event should be to maximise the number of lives saved.
- Changes in the usual standards of health and medical care in the affected locality or region will be required to achieve the goal of saving the most lives in a mass casualty event. Rather than doing everything possible to save every life, it will be necessary to allocate scarce resources in a different manner to save as many lives as possible.
- Many health system preparedness efforts do not provide sufficient planning and guidance concerning the altered standards of care that would be required to respond to a mass casualty event.
- The basis for allocating health and medical resources in a mass casualty event must be fair and clinically sound. The process for making these decisions should be transparent and judged by the public to be fair.
- Protocols for triage need to be flexible enough to change as the size of the mass casualty event grows and will depend on both the nature of the event and the speed with which it occurs.
- An effective plan for delivering health and medical care in a mass casualty event should taken into account factors common to all hazards as well as the factors that are hazard specific (e.g. guidelines for making isolation and quarantine decisions to contain an infectious disease).

Plans should ensure an adequate supply of qualified providers who are trained specifically for a mass casualty event. This includes providing protection to providers and their families (e.g. personal protection equipment, prophylaxis, staff rotation to prevent burnout and stress management programmes).

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Altered Standards of Care in Mass Casualty Events

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- A number of important non medical issues that affect the delivery of health and medical care need to be addressed to ensure an effective response to a mass casualty event. They include:
  * The authority to activate or sanction the use of altered standards of care under certain conditions.
  * Legal issues related to liability, licensing, and regional mutual aid agreements.
  * Financial issues related to reimbursement and other ways of covering medical care costs.
  * Issues related to effective communication with the public.
  * Issues related to populations with special needs.
  * Issues related to transportation of patients.
  * Guidelines and companion tools related to the development of altered standards of care in a mass casualty event are needed by, and would be extremely useful to, preparedness planners at all health levels of the health system

Recommended action

The expert panel suggested that a collaborative approach should be taken when developing next steps. Both government and private organisations have unique roles and important contributions to make in moving forward.

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Waikato's Staying Alive expo a success

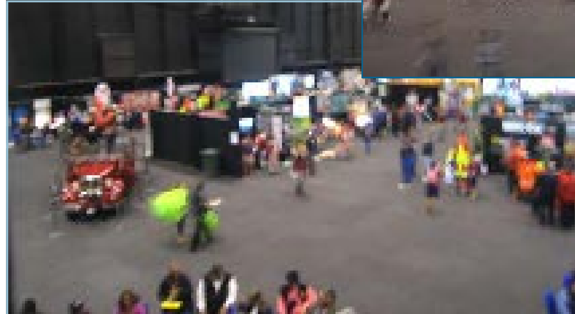
Waikato emergency services, led by Roy Breeze from the NZ Fire Service, capitalized on a an International rescue competition to stage a 'Staying Alive" expo at Hamilton's Mystery Creek events centre earlier this month.

All emergency services in the Waikato, including the DHB and St John displayed their wide range of emergency services and products at booths inside the Centre and display areas outside. Waikato's spring weather offered just enough bite to test the robustness of the outside exhibits.

While the rescue competition will move on to other locations, the expo was so successful those involved are considering making it an annual event to showcase emergency management.

A display of decontamination tents attracted the attention of emergency planners from health organizations. Available either as air shelters or with external ribbing, these tents are presently being supplied throughout the country to the NZ Fire Service.

With their own bunding, waste water containers, and a capacity to heat water, they offer a viable option for hospitals needing to provide a decontamination facility adjacent to their ED entrance. §



Views from inside the Centre

Multi user and one person shower units

Post–Hurricane Katrina Use of Generators Linked to Reports of CO Poisoning

In the period after Hurricane Katrina (Aug. 29 - Sept. 24, 2005), 51 cases of severe carbon monoxide (CO) poisoning were reported in residents of Alabama, Louisiana, and Mississippi who were using portable generators and other petrol-powered appliances for electrical power and clean-up.

Although the extent of generator use in these states is unknown, a previous assessment in Florida after the 2004 hurricane season indicated that 17.5% of residents used portable generators, and 5% reported operating the generators indoors.

The use of petrol powered generators indoors was also a problem in Auckland during its power crisis a number of years ago. The incidence was not as high as reported here. Perhaps because small portable generators were not so common

Because common symptoms of CO poisoning are non-specific (headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion), many affected individuals mistake their symptoms for influenza and may not seek medical care. Healthcare providers are advised to consider CO as part of a differential diagnosis, particularly after power outages. §

HEMNZ Bulletin

The HEMNZ Bulletin is published monthly by the Risk Management Unit of St John Northern Region for all those interested in emergency management in health care settings

Articles and comment on emergency management issues are welcomed

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Up coming Events

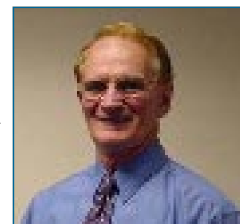
26 28 October 2005
Health Materials Managers Conference 2005
Wellington Conference Centre
Cost: $190
More information from; **www.mianz.co.nz/conference.html**

7 8 November 2005
North Island CDEM Officers Conference
Palmerston North Convention Centre
Cost: $180
More information from;
sue.porter@horizons.govt.nz

27 30 November 2005
RedR Personal Security and Communications Training Course
Waiouru Military Camp
Cost: $600
More information from; **www.redrnz.org.nz**

28 29 November 2005
Risk Management Conference
Copthorne Hotel, Wellington
Cost: $1950 + GST
More information from;
www.brightstar.co.nz

Editor's soapbox



Two gas company servicemen, a senior supervisor and a young trainee, were out checking meters in a suburban neighborhood. Parking their truck the end of the street, they worked their way to the other end. At the last house, a woman looked out her kitchen window as they checked her meter.

Finishing the check, the supervisor challenged his young coworker to a race back down the street to the truck to prove that, despite his age, he was still the fittest.

As they reached the truck, they realized the lady from that last house was huffing and puffing right behind them. They stopped and asked her what was wrong. Gasping for breath, she replied, "When I see two men from the gas company running as hard as you two were, I figured I'd better run too!"

The moral of this story is that in times of uncertainty we will judged on what we say and do. "Watch my lips" takes on a whole new dimension.

Media fuelled speculation on an Avian flu pandemic is spreading a fog of confusion over our population. That conflict may be acceptable to those who understand the uncertainty surrounding the timing, source and severity of the next pandemic. To the general public, it is not.

Recently, health spokespeople, with Mark Jacobs setting the example, have got much better at getting the key information out in accurate digestible sound bites. We all need to do better in this area.

Newspapers are now asking, under the Official Information Act, to see DHB pandemic plans. Does yours clearly and concisely set out what you are going to do and how you are going to do it? Is that information hidden in a 300+ page opus? Montgomery's orders (strategy) for the battle of Alemain was typed on one page and understood by all. Make that your benchmark.

Bruce Parkes

(Continued from page 8)

The panel's recommendations include:

- Develop general and event specific guidance for allocating scarce health and medical care resources during the mass casualty event.
- Develop and implement a process to address non medical issues related to the delivery of health and medical care during the mass casualty event.
- Develop a comprehensive strategy for risk communication with the public before, during and after the mass casualty event.
- Identify, analyse and consider the modification of laws and regulations that affect the delivery of health and medical care during a mass casualty event.
- Develop a practical tool, such as searchable databases, for verifying credentials of medical and other health personnel prior to and on-site during a mass casualty event.
- Create strategies to ensure health and medical leadership and co-ordination for the health and medical aspects of systems response during a mass casualty event
- Develop and support a research agenda specific to health and medical care standards for a mass casualty event.
- Develop a community based planning guide for mass casualty care to assist preparedness planners in their efforts.
- Identify and support those developing mass casualty health and medical response plans to share their results widely.

These recommendations must resonate with anyone preparing a pandemic plan. The issues raised are the some ones we are grappling with. Use the document as a check list to compare against your plan. §