Race against time

Emergency response - preventing escalating chaos in a disaster.

White Paper

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Are you prepared for a major disaster? Emergency teams must consider all areas that can go wrong in a major disaster and plan their strategy accordingly. Lives depend on it.

After a major national disaster the first 72 hours are the most critical period for emergency teams to respond to those in need and prevent further damage. Using first-hand accounts, this paper provides practical information for emergency teams and critical emergency services yet to experience a significant disaster or catastrophe. It also highlights the many important roles in an emergency and looks at what needs to be communicated, and what are the real priorities.

Source: New Zealand Fire Service

INTRODUCTION

Whether you've helped extinguish raging fires, rescued flood stranded victims, or you've been on a half dozen emergency training courses, they say little can prepare you for when the big one strikes. Nine times out of ten, most emergency crews will be relying on their training and the lessons that others have learned to help get them by when it comes to their turn to experience their once in a lifetime major disaster.

The mangled bodies, the surrounding annihilation of buildings and infrastructure, the uncertainty of whether your own friends and family are alright, the challenge of communications, the pandemonium, and the sheer size and duration of the task ahead can be utterly overwhelming and deeply stressful.

Blame it on global warming or a natural change in the earth's cycle, the fact is there has been a spate of major disasters in the world recently, from earthquakes in Chile, Haiti, New Zealand, Japan and Turkey, to tsunamis in Indonesia and Japan, fires in Australia, floods in the Philippines, the volcano in Iceland, droughts, hurricanes and tornados in the US, and the list goes on. Hundreds upon thousands of people continue to die or suffer. And with increasing urban sprawl and world population, the scale of disaster in terms of loss of infrastructure and human life will only continue to astound and break records.

So how do emergency teams make sense of it all and work together as one to contain the emergency and prevent escalating chaos? And even if the likelihood of a major event affecting your region for reasons of geography or strategic location is low, is it still wise to be prepared?

This paper identifies and makes recommendations regarding five top priorities when preparing for or managing a significant event:

1. Know your priorities and who is in charge
2. Know what it is you are dealing with
3. Find the silent demand
4. Ensure you can manage the demand for information
5. Update your strategy often, calculate the risks and be ready for the unexpected.

> *"It is important to identify those cases where caregivers need care too. Two of the original 19 staff members died in the disaster. Some others are still missing. The limited capacity of those who remain is further reduced by the high level of stress, as they work at an unsustainable rate and some of them no longer have a home to go back to, or have to go outside after the shift and look for their missing relatives. Our team and the ones which will follow – each deployed for a one-week shift, for a total of one month – will take care not only of the elderly, but also of caregivers themselves, before they experience burnout symptoms."*[1]
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> **Japan Red Cross caregiver – Koji Ichigawa**, coordinator of the first Red Cross team deployed in Rikuzentakata, Japan on 15 April, 2011.

NO TWO DISASTERS ARE EQUAL

No two disasters are equal; they are difficult to manage and require a coordinated approach between the emergency agencies. Slow-onset emergencies such as droughts can take months to reach a critical phase and, over time, lessen the ability of people to support themselves and sustain their livelihoods. Ecological, social, economic or political conditions can aggravate the situation.

Sudden-onset emergencies are either caused by natural events such as earthquakes, floods, storms, fires and volcanic eruptions, or unnatural events such as a plane crash, terrorist bombing, or a shooting spree. And the impact of these can be heightened by the location and density of the population, the quality of the infrastructure, or the lack of community preparedness.

The disaster location, degree of severity, duration, and the likelihood of a second or a repeat disaster during the recovery phase all need to be taken into consideration in the emergency plan.

For example, on 4 September, 2010 a 7.1 earthquake hit Canterbury, New Zealand; the epicenter was in Darfield – 40 km west of Christchurch city. Unlike other similar strength quakes around the world, no-one died. Power and utilities were restored quickly, and the recovery was managed by emergency crews and the local council.

But less than six months later on 22 February, 2011 a 6.3 magnitude earthquake struck just 10 kilometers south-east of the heart of Christchurch – New Zealand's second-most populous city – with deadly ferocity, killing 185 people and injuring 6,500 more. Roads and bridges were impassable and all utilities were either down or severely disrupted. Power and water were out for weeks, sewerage was out for months, and all telecommunications lines and cell sites were overloaded.

The difference between these two disasters was not just the magnitude and the destruction that resulted, but the time and location they happened. Unlike the September event at 4:35am, the February quake struck at 12:51pm lunchtime when people were out and about or working in offices, and children were at school.

All communications networks were overloaded as people tried to reach their loved ones, and escape from the city created bumper to bumper traffic on all arterial routes. Many found it quicker to walk or get on their bike than go by car. Emergency teams were overwhelmed and struggled to get coordinated in the first few hours of the February quake. It was an entirely different disaster to the September quake and the first time ever that New Zealand had declared a state of national emergency.

Catastrophic disasters such as earthquakes, hurricanes, fires and floods are large-scale emergencies that can affect substantial portions of the public and have significant impact on critical national infrastructure, including communications networks and services.

The cost to human life and property is a growing concern as urban development in disaster prone areas increase and older buildings and infrastructure, which may no longer meet modern building standards, become more vulnerable.

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RECOMMENDATION 1 – KNOW YOUR PRIORITIES AND WHO IS IN CHARGE

It is a race against time for emergency agencies after a major disaster. Depending on injuries sustained by the victim, the outside temperature, and the victim's access to air and water, the majority of those affected will die within 72 hours after impact.[2]

As our survival instincts kick in, our priority is to save our lives and those of our family, friends and neighbors. The priorities of the emergency response teams, once their own safety is assured, are to respond to and help save the lives of disaster victims, to limit further damage, and fulfill the basic humanitarian needs of the affected population.

How effective they are at doing this depends on a multitude of factors: from the extent of the communications and infrastructure damage, to the robustness of the emergency strategy and practice, the availability and traceability of the required skill and knowledge resource, and the speed in setting up the rescue operation.

MANAGING YOUR RESPONSE

Emergency managers in major disasters may have to coordinate and communicate with national and external agencies, so it is particularly important that formal emergency planning between emergency management stakeholders across regions and areas are aligned to a standard template.

For continuity and interoperability between these stakeholders the emergency management process should be supported by an Emergency Management Information System (EMIS) that integrates emergency plans at all levels of government and non-government involvement, and coordinates all related resources for all four phases of emergencies (risk reduction, readiness, response and recovery).

Also called an 'incident command system' or 'incident management system' the EMIS manages the response to an emergency or incident involving multiple emergency services. It enables emergency service responders to formulate and implement response plans that can be adapted for each emergency situation that arises.

As every disaster scenario is unique, each will require its own emergency response strategy; though there are many rudimentary processes that will apply to and can be adapted for all incidents. Key to these strategies is the four core areas that enable emergency crews to identify the processes, namely:

1. **Risk reduction:** reducing or eliminating risk to human life and property from natural or non-natural hazards
2. **Readiness:** preparing resources to respond to the hazard
3. **Response:** responding to the emergency, saving lives and property, and helping communities to recover
4. **Recovery:** coordinating efforts and processes to bring about a return to a pre-disaster state.

Critical for the success of the rescue and recovery operation is having experienced personnel available and supporting the operation where needed with emergency training, knowledge and skill.

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BUILDING AN EFFECTIVE LEADERSHIP TEAM

In the initial search and rescue period after a disaster, the first priorities for first responders and other emergency response crews is to establish lines of communication, assess and report on the severity of the situation, and enable the identification and coordination of the appropriate emergency management strategy. This cannot be over-estimated. Many post-event review and analysis documents repeatedly point to the importance of communication, and the complications and confusion caused by communication breakdowns. Only when the immediate threat to human life has subsided will the recovery phase begin.

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After the February 2011 earthquake in Canterbury New Zealand a NZ Fire Service report on the Incident Management Team response stated: "Although the demands for action plans, multi-agency operational briefings, situation reports, conference calls with National Coordination Centre (NCC) and external agencies and media briefings at all levels had never been identified or practiced before on a scale as large as this, our staff responded to the challenge. We are aware that MCDEM [the Ministry of Civil Defence and Emergency Management] manage regular exercises and all regions participate in these, however, none of these exercises has been as challenging and as enduring as this emergency. It is, however, apparent that they gave our staff the core skills they needed to respond effectively."[3]

PRIORITIZING TASKS IN AN EMERGENCY SITUATION

In all emergencies the initial response is done at the local emergency service level and usually supplemented by able-bodied citizens in the vicinity of the disaster. However, should local resources get overwhelmed by the scale of the disaster then national and/or international assistance may be called to bring in extra police, fire services, search and rescue teams, and the defense force to assist with the rescue operation – including evacuations as necessary.

A national controller – usually someone with emergency management and/or a defense background – would be given the authority to run the whole operation. While this person would be highly trained for the role, for most it will be their first experience of coordinating the response efforts for a major national disaster.

"I had never done anything like this before," said John Hamilton, Director of Civil Defence and Emergency Management, who was appointed National Controller after the February 2011 earthquake in Christchurch New Zealand. "But I was less worried about the responsibility of my new role than I was about the sequencing and the management of the activities through which we were attempting to make things better for the people of Christchurch. Establishing the operational priorities was self-evident. People who were trapped in buildings and injured were high priority, as well as making sure people whose homes were badly damaged were able to have shelter, food and water. As time progressed and the situation changed we then placed community wellbeing and the progression of services at the top of the priorities."

One of the biggest challenges in any disaster situation is random instinctual and uncoordinated actions which can exacerbate chaos, even if first responders react in line with their training. To work around this expediently the emergency leader and team must allow initial coordinated responses that are vaguely right, and then bridging the gaps by adapting to new information and changes in circumstances as they arise.[4]

"We were always aware that there were people working with us whose position was hugely different than our own. While we were conscious of the risk that they would be distracted, I never saw anybody who was distracted to point that they needed to go home. In many respects it showed remarkable personal resilience in being able to cope with both situations," said Mr Hamilton.

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COORDINATING INTERNATIONAL ASSISTANCE

For significant natural disasters (meteorological, geological, biological, extra-terrestrial) and non-natural disasters (human and technological), the emergency management agencies in charge of the rescue operation differ from country to country, for example:

- US – Federal Emergency Management Agency (FEMA)
- Australia – Emergency Management Australia (EMA)
- Canada – Public Safety Canada
- Germany – Katastrophenschutz and Zivilschutz programs controlled by the Federal Government
- India – National Disaster Management Authority of India
- The Netherlands – Ministry of Interior and Kingdom Relations
- New Zealand – Ministry of Civil Defence and Emergency Management (MCDEM)
- Russia – Ministry of Emergency Situations (EMERCOM)
- South Africa – Department of Constitutional Development

But not all countries have a central authority for integrated disaster management or coordination within and between disaster-related organizations.

While emergency management jurisdictions are usually tailored to meet a country's individual emergency risk profile, there is assistance available for coordinating the disaster rescue process in the first phase of a sudden-onset emergency from the United Nations Disaster Assessment and Coordination (UNDAC)[5], and the International Urban Search and Rescue Group (INSARAG)[6].

Whether it's the national government representative or a UN coordinator, part of the emergency manager's role is to advise the administering government what has happened and to begin the coordination process of bringing in the available national and international resources.

"Coordinating international assistance is a to and fro process," explained Mr Hamilton. "We outline what our requirements are to our partners in the international community, they then put up what they have available and how long it might take to get here, and we choose out of that what we want."

"It is about being able to assimilate a mass of information coming in about what has happened, determining what the response priorities are, and requesting and coordinating the extra resources we might need from existing connections," he said.

"Also, as it was the first time a national declaration had been made in New Zealand, immediate action was required to get people in place, and to think about structures and the way we would go about operating at that level. While there is no prescriptive disaster process form to complete as such, in the event of the Christchurch earthquake in February 2011, the emergency arrangements, planning and practice that we did were pretty much spot on."

Source: New Zealand Fire Service

CASE STUDY: EARTHQUAKE, HAITI. 12 JANUARY 2010

Haiti's 7.0 magnitude earthquake that lasted less than a minute killed 220,000 people, destroyed quarter of the homes in Port-au-Prince, Leogane and Jacmel, and made more than a million people homeless. Coordination efforts were disrupted by frequent power cuts and communications outages. The airport was crippled first by the quake then overloaded by the influx of humanitarian assistance and cargo. The main port in Port-au-Prince was closed due to serious damage and many roads were blocked by rubble and crushed vehicles.[7]

Haiti's disaster was remarkable in the fact that the earthquake created prolonged stays in temporary shelters which contributed to poor living conditions, resulting in the region's first cholera outbreak in 100 years – nine months after the earthquake. Access to fresh, clean drinking water – in the first 72 hours and well beyond – is a critical need after a disaster of this nature.

A Pan-American Health Organization's report titled *Health response to the earthquake in Haiti*[8] states: "Information and coordination management was a challenge that was not met adequately. One of the key lessons to be re-learned from the Haiti earthquake is that coordination can only be effective if the national authorities (civil protection, health, and other line ministries) are equipped and truly assume the ultimate leadership and authority for coordination. External coordination mechanisms are most valuable when they can offer a modicum of order in the first days or weeks until the authorities recover from the impact. But only the government of an affected country has the legitimacy to establish and implement relief and recovery priorities."

RECOMMENDATION 2 – KNOW WHAT IT IS THAT YOU ARE DEALING WITH

Determining the scale of the emergency quickly is the number one priority immediately after the disaster has occurred. If there are multiple fatalities and damaged infrastructure across a wide area, knowing where help is needed most and what support they desperately need is vital to all involved in the disaster relief operation.

Before anything can be arranged, the operation team must have a clear understanding of what resources are available. But finding out what you're dealing with requires a working communications infrastructure. However, in major disasters like earthquakes and hurricanes, telecommunications and power are often the first of the critical services to go down or be severely disrupted. This is a common challenge for rescue teams in disaster situations around the world.

The February 2011 earthquake in Christchurch New Zealand created an unexpected challenge for operations personnel. Not only was the new City Council building compromised – where the rescue operations would normally have taken place, but the back-up regional operations center at the ECAN building was also damaged.

"We had no choice but to get ourselves into new alternative facilities," said Mr Hamilton. "The Regional Council ended up at the School of Engineering at the University and the City Council operated from the Art Gallery. This happened swiftly. We made it work, and the facilities were pretty good, but they hadn't been tested at

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this scale and we hadn't trained to use them in that way. The lesson we learned from this experience is to always have in mind an alternative 'warm' location that we could march into with a laptop, plug into power and data points, and get straight into it."

The next challenge was the communications, or lack of. Landlines went down after the quake, and mobile coverage was severely disrupted and restricted to text messaging only. "We haven't instigated call priority yet," said Mr Hamilton. "But we're working with the other emergency services and the telecoms providers to look at how we might activate that."

Whilst the NZ Police CAD (Computer Assisted Dispatcher) system remained fully operational, Police had no connectivity with Civil Defence. As a result of this and the fact that Civil Defence had to relocate, for the first two weeks, as aftershocks continued and communications networks remained at risk, NZ Police relied heavily on pen and paper communications, and engaged runners to take messages to and from the Civil Defence headquarters. Thankfully the NZ Police digital radio system didn't fail and they were able to communicate effectively with the officers in the field.

"Situational awareness is absolutely critical," said Mr Hamilton. "The flow of information by whatever means – whether it is through the man on a bike or a high technology device – is vital. We need to know everything from the status of the hospital, airport and roads, right down to the acute trauma capacity locally and in other national hospitals. Once the information starts coming in, we then set about thinking of the what-if's and understanding what resources we have available to put in place a plan. For example, getting a plane configured for the trauma patients and informing the hospitals of what's coming.

"Looking back, if the airport, hospital and major access roads had been closed it would have been extremely difficult. Or if there were more deaths and casualties it would have created more problems for all sorts of reasons."

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Director of New Zealand Civil Defence and Emergency Management

CASE STUDY: LABOUR YOUTH CAMP SHOOTING, UTOEYA ISLAND, NORWAY. 23 JULY 2011

Norwegian Anders Behring Breivik shot and killed 68 people at point blank range at a Labour youth camp in Utoeya Island, Norway, after previously setting off a bomb that killed eight people in Oslo.

The lesson from Norway is to plan that 'everything that can go wrong will go wrong'. Response by the police to the massacre at the youth camp was criticized for being too slow. Media helicopters were filming the killings from the air, long before the arrival of armed anti-terror police officers, more than an hour after the shooting started. And boat owners were rescuing young people from drowning in the lake well before any emergency services came to their assistance. Engine failure delayed the arrival of one commando police boat by 10 minutes. Police surveillance was unavailable because of holidays, and armed response units were tied up in Oslo, where government buildings had been blown up in an unprecedented attack. The slow response to the Utoeya massacre raised questions about whether the police were prepared well enough for a dual attack.[9]

RECOMMENDATION 3 – FIND THE SILENT DEMAND

As information comes in about the victims and damage, it's easy to assume that all have been accounted for and be satisfied in the knowledge that you have arranged for their needs to be met.

In most disaster situations, there will be silent victims stranded without any means of finding out what's going on, or telling emergency services what their needs are.

John Hamilton emphasized the importance of clear communication paths. "It's important to be able to send tasking messages via radio or other forms of communications to responders in the field to make sure that they are doing what they should be doing, that the priorities are being applied, and that the task is coordinated across the activities. But if that's not possible, then you have to find whichever way is possible to get the information quickly".

After Hurricane Katrina hit the US in August 2005, the Federal Emergency Management Agency (FEMA) was criticized for its slow and ineffective response. The entire communications infrastructure – phone lines, cell phone towers, and radio and satellite antennae – was destroyed in many areas, and it took many days before emergency responders could establish an accurate picture of the disaster's magnitude and devastation and get situational and operational information to state or federal personnel outside the affected areas.

People with disabilities, the elderly and their families were severely disadvantaged due to the 'inadequate mechanisms, plans and coordination with regards to identifying concentrated populations, entities and other individuals who would need assistance with evacuating, transporting and sheltering'.[10]

Nicky Wagner, National Party Member of Parliament for Christchurch Central, said: "Despite news updates broadcasted on television, radio, internet and newspaper, it took a while for us to compute that there were people who weren't getting any of the vital information they needed. This is one thing we'll never forget to ask in emergency management – everyone was doing their very best to answer demand, but there was a 'silent demand' that we weren't aware of. We drove out to the worst affected areas and met people who desperately wanted help and information but couldn't get it. They had no phone, power, or batteries and therefore couldn't ring up to request a portable toilet on their street. But when they found out and asked why other suburbs had portaloos and they didn't, they were angry. Civil Defence remedied the situation and at the same time they placed battery chargers on street corners for people to recharge their mobile phones."

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CASE STUDY: HURRICANE KATRINA, UNITED STATES. 29 AUGUST, 2005

Category three Hurricane Katrina created catastrophic damage as it crossed Louisiana, Mississippi and Alabama. The hardest hit communities lost all infrastructure: electricity, water, sewers, roads and bridges, as well as all communications including landline, cell phone towers, radio capabilities and many satellite antennae. Even law enforcement was lost in some cases.

The hurricane and the subsequent floods killed 1,836 people, destroyed more than 300,000 homes, and displaced more than 700,000 people. The lack of communications severely impacted the ability of emergency responders to get situational and operational information to state or federal personnel outside the affected areas, to the point that it took many days for FEMA (Federal Emergency Management Agency) personnel to establish an accurate picture of the disaster's magnitude and devastation. Preparations for the hurricane were woefully inadequate resulting in congested emergency evacuation routes, limited commodities became quickly depleted, people with special needs were not looked after, and various stages of civil unrest followed.[11]

RECOMMENDATION 4 – ENSURE YOU CAN MANAGE THE DEMAND FOR INFORMATION

AIM FOR AN INTEROPERABLE AND FLEXIBLE COMMUNICATIONS SYSTEM

In disasters where essential communications systems fail or are overloaded and disrupted, emergency responders and management teams are seriously disadvantaged. This is why around the world emergency management teams are working towards achieving a survivable, sustainable and interoperable communications solution.

For instance, in the event of natural disasters, acts of terrorism, and other man-made disasters, the vision of Homeland Security in the US is for emergency responders to be able to communicate as needed, on demand and as authorized at all levels of government and across all disciplines; and to ensure, accelerate, and to attain interoperable emergency communications nationwide.[12]

But to date they concede that disasters 'have shown that there is no simple solution – or "silver bullet" – to solve the communications problems that still challenge law enforcement, fire fighting, rescue, and emergency medical personnel'.

The best that emergency departments can do at present is to implement an integrated communications and information system for disaster management with a 'multi-level wireless voice and data communications infrastructure, as well as integrated applications that reflect the currently selected organizational structure adequate to the rescue effort'.[13]

This might include land mobile trunked radio networks, satellite technology for wide area communications, wireless LAN networks for disaster hot spots, and body area networks for frontline personnel – allowing them to collect data using robust mobile terminals and sensors. As well as flexible information workflow applications that can be quickly adapted to modifications to the organizational structure due to disaster situation changes.

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Access to modern technology for disaster management is a common constraint for emergency services around the world. The equipment ages quickly, and maintenance of the many essential support resources for years (possibly decades) is costly.

"What we need are solutions that provide capacity, reliability, redundancy and resilience, and to have assurance that they will work in an emergency. Everything we use currently has a plus and a minus: cell phones are very handy but have vulnerabilities, a satellite system has limitations depending on which version you get, and you can't carry a C-band antennae everywhere you go. And while our HF radios work well they are limited to voice only, whereas Internet is easier to do file transfer." said Mr Hamilton.

TRACKING YOUR RESOURCES AND RELAYING INFORMATION

Having a modern and reliable communications system is essential for efficient tracking and dispatch of emergency personnel.

The Canterbury District Commander of New Zealand Police Dave Cliff said, "Not knowing exactly where personnel and vehicles were at any one time in the initial aftermath was difficult. Having available an automated system for identifying the location of personnel and vehicles would definitely assist. Also important is having a professional roster tool to be able to manage a large influx of staff more efficiently and optimize resources was one of the lessons we learnt. An important reflection is that the Emergency Services – Police, Fire and Ambulance in particular are the agencies that bring order from the immediate chaos. Their response provides a platform that enables other agencies, which arrive some time later, to pick up the welfare needs of communities and other issues that arise after a disaster. Excellence in the immediate response depends on having great resilient and committed emergency services people and resilient communication. Fortunately, in Christchurch we had both."

He said that 'interoperability is key' to allow all agencies to speak to each other in a crisis. "Emergency agencies must find a way to ensure power for mobile networks to facilitate communications for first responders and residents. They should also enable private business and government collaboration at all levels; provide free temporary public landline phones; and use, charge and test satellite phones monthly."

IMPLEMENT AN INTEGRATED DISASTER MANAGEMENT COMMUNICATION AND INFORMATION SYSTEM

In a disaster the ability to provide an expedient and coordinated emergency service and to share situational awareness data within and between Police, Fire, Ambulance, Civil Defence and other organizations is vital, yet maintaining communications remains the 'primary challenge'. Particularly in the areas of: optimization, decision support, visualization, geographic information systems (GIS), and simulation and training.[14]

Encouragingly, many organizations around the world are now investing in integrated communication and information systems for disaster management to enable reliable and secure exchange and processing of critical information in real-time within and between organizations; though usually only after a major incident has happened, or if the risk analysis and available budget warrants the expense.

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New Zealand Fire Service Chief Information Officer, Alma Hong said, “One of the big challenges immediately after the earthquake was to pull together all the data from different agencies to build a common operating picture. This included information on road closures, building risk assessments, failed cell phone sites, power outages, water supply, seismic information, police, ambulance and fire incidents, and so on. The New Zealand Fire Service geospatial team played a major role in gathering and assembling this information so it could be shared and used by everyone involved in the response. Drawing from the Christchurch experience, NZFS is reviewing its technology support for emergency responses and further championing the use of common data standards.”

Tony Howard Technical Advisor for St John’s Ambulance said, “Whilst our Vehicle Mobile Data network remained operational to show vehicle location and Incidents assigned, our radio system operates on a single conventional channel for voice. From this, we found it very hard to cope in the first hour with the high volume of voice traffic and the level of information being received from ambulances in the field. The lessons from this event have assisted in our planning for greater resilience in terms of additional radio capacity and operational practice.”

Kieren Kortegast who manages the southern communication center of the NZ Police added, “Eight hours after the quake we had a back log of 1,200 events/jobs that had originated from both emergency and general telephone calls from the public. We had to put all available staff on to triaging and re-prioritize these jobs, which included calling back some callers to ascertain the situation. Despite challenges around some of our service provider's generator capability, fuel sources and fuel delivery planning, and mis-communication of resources, the action plan we had practiced was holding up and providing us the information and tools we needed. Even the three days’ supply of ration packs for all Communications and 111 staff in the Comms Center were being utilized. Before some people considered the ration packs as over the top; now they were seeing it differently and understand the real benefit of having them.”

PREPARE TO COMMUNICATE IN A CRISIS

According to the Disaster Resource Guide[15], when incidents occur, organizations are judged not only by what is done, but by how those actions and initiatives are communicated to diverse stakeholders.

However, typically, the nature of post-disaster intervention leads to overlaps and doubling of messages and silence promotes rumors that can be exploited for political or economic reasons and lower community participation levels. Since lessons learned show that too much communication is better than too little, and that retracting or correcting information can be difficult, it pays to have an emergency communications plan prepared and rehearsed well in advance.

Within the first hour of the February earthquake Communications Manager of NZ Police, Stephen Hill, was formulating public information for the media who were already ringing him directly with questions.

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"Initially, with only runners between us and Civil Defence HQ, it was hard to keep tabs on what was going on. I also hadn't appreciated the vast volume of the communications required. Two additional communication managers came to Christchurch within 12 hours of the quake to help us provide and maintain 24 hour coverage of communications," he said.

When communicating with the media in a disaster, organizations are effectively communicating directly to the victims who may have lost their homes or have injured or dead family members and friends. Their livelihoods may be destroyed, they may have little food or shelter, and are possibly suffering from mental and physical health problems. These experiences can affect people's needs, opinions, and perceptions, and therefore their ability to participate in the programs aimed at helping them to recover. Emergency agencies must therefore understand victims' perceptions prior to designing the communications strategy, since these perceptions can dominate their behavior and response.

To bring a crisis under swift control emergency agencies need to collect and manage the information flow both internally and externally. The communications plan must be simple, easy to understand and shared with line managers across the organization. It is important to establish in advance databases of those who need to be communicated to. The communications media must also be determined – i.e. website, 0800 line, calls, text, letters, social media, etcetera, and who will be responsible for actioning the plan.

The key communications considerations all organizations must deal with in a crisis are:

1. How will you reduce potential levels of concern/anxiety among your stakeholders?
2. How will you help stakeholders understand their options if your organization is in a crisis where normal operations will not resume for some time?
3. How much assurance can you really and legally give about your organization's ability to regain control and continue operations in the near term?
4. How will your organization know what to do and when?
5. How will related side issues be managed and explained to stakeholders?
6. How will you select and use the most appropriate communications tools/modes?

"Pre-planning definitely helped with our response and the CIMS (Coordinated Incident Management System) meant that we could move straight into disaster mode, knowing what was required, how and when," said Mr Hill.

"Initially, with only runners between us and Civil Defence HQ, it was hard to keep tabs on what was going on. I also hadn't appreciated the vast volume of the communications required. Two additional communication managers came to Christchurch within 12 hours of the quake to help us provide and maintain 24 hour coverage of communications"

Mr Stephen Hill
Communications Manager of NZ Police

REMEMBER WE ARE ONLY HUMAN

Disaster management plans are usually more focused on the logistics and the practicalities than on our personal experiences of the disaster. But they should also consider the human element.

We all react differently in high stress emergency situations than we would do normally, and under pressure our decisions can be emotional and rash. Hindsight is a wonderful thing when it comes to post-disaster analysis. So it is important that measures are implemented to ensure the needs of the helpers are met, that they are in reasonable shape to do their jobs, and can continue to do so for several days or weeks.

"You need to plan for the worst case scenario," said Mr Hill. "Imagine what it might be like, and then plan for something worse – plan for zero technology being available. We were lucky in that the cell phone network continued for the most part. Make sure you are prepared with what you need to become operational. Talk regularly with counterparts in other agencies to ensure alignment of approach. And don't forget internal communications. Your staff are dealing with their own personal issues whilst continuing to assist and support the community."

When major disasters overwhelm local emergency services and call for national and international assistance, the rescue operation must also consider the different practices and cultural sensitivities when placing teams together.

CONSIDER HOW TO LEVERAGE SOCIAL MEDIA IN A DISASTER

With the rise of social media and the expectation for immediate news updates, emergency agencies already struggling with disrupted communications in a disaster, are finding themselves under pressure from the public wanting to know why social media is not utilized more in either their emergency response or disaster communications plan. Citizens expect frontline personnel to be alerted to desperate texts, tweets and Facebook messages from the public, as well from victims themselves trapped beneath rubble of nearby buildings.

"One of the biggest challenges we face is the combination of public expectations around communications – not the physical, but the messaging," said John Hamilton of New Zealand Civil Defence. "I don't think we were particularly well placed to deal with social media after the earthquake, and no-one in emergency management around the world has quite tackled this. Though it is something we should be looking at."

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Mr John Hamilton
Director of New Zealand Civil Defence and Emergency Management

In a study of the 2007 Southern California Wildfires, a research team found that social media is an additional valuable tool-set for information management in disasters: "The ability of people to improvise in a disaster with flexible technology increasingly at their disposal creates conditions for change in the social structures and, subsequently, the institutional arrangements of disaster response."[16]

In recent years social media has played a valuable role in rallying volunteers to help with the clean-up after a disaster, and to inform the public of news and progress. After the Haiti earthquake, many of the official lines of communication were down and news agencies were unable to send word out about the devastation. Social media was credited for partly making up for the lack of information from the affected area on what had happened and what was most needed by the victims.[17]

Gissli Olfassan, an active member of the United Nations Disaster Assessment and Coordination (UNDAC) team, blogged on the use of social media in disasters. He says that the key uses of social media are for advocacy and fundraising (using social media to interact more closely with people donating and influencing public opinion), information sharing (reaching out during disasters to the affected community with information about services, threats, etc.), and information management (using social media platforms to collect, analyze and process information required for organizations to do their work).

He wrote, “One thing to realize for those that push for detailed collection of reports is that during a large scale disaster you cannot process timely every single request that comes in. Those that have worked in an [emergency call] center during a large scale disaster can confirm this. You try to prioritize the reports and a great deal of them end up in a queue that gets serviced a long time later, at which time citizens may have handled the issue themselves. This may cause the fact that up to 90% of these reports may not be accurate when a first responder finally gets to the area. Given that high of a rate of inaccuracy shouldn’t we just ignore this social media reporting stuff all together?

“The tools we develop must therefore in my mind have two ways of tracking information. One is for the high priority reports – e.g. “person stuck under a rubble” or “ambulance needed for injured person” – and for those it is important to be able to prioritize them and then mark when they have been taken care of. The second one is taking all the other situational reports and aggregating them into logical administrative boundaries (neighborhoods, villages, etc.) and tracking them through time. We need to be able to identify these based on sectors/clusters so we can see where the need is for each sector. At the same time we must be able to ‘slide’ a timeline to see the trends in the reports for each area.”[18]

CASE STUDY: BLACK SATURDAY BUSHFIRES, AUSTRALIA. 7 FEBRUARY 2009

Australia's worst natural disaster struck Victoria on 7 February 2009, when the Black Saturday bushfires killed 173 people, injured at least 400 and affected countless thousands more. The fires affected 78 townships destroyed 2,056 houses and 239,637 hectares and displaced an estimated 7,562 people.

Australians, particularly those living in bush fire prone areas, are encouraged not to be solely dependent upon fire services and to exercise a measure of self-reliance, including taking responsibility for preparing their homes. The "stay or go” policy recommended that residents whose properties were properly prepared and defendable, and who were physically capable, to stay and defend their property in times of fire.

After the Black Saturday fires, this policy came under criticism as 113 of the people who died in these fires were in or around their homes. Forty-four per cent of those people killed on Black Saturday were classed as “vulnerable” – aged less than 12 years old or more than 70 years old, or because they were suffering from acute or chronic illness or disability.

The report issued by Victoria's Bushfires Royal Commission criticized the former Victorian Police chief commissioner, the former Country Fire Authority chief, and the head of the Department of Sustainability and Environment for failing “to demonstrate effective leadership in crucial areas” by ensuring that “prompt and accurate warnings were issued to communities in the path of the fires”.

The Commission handed down 67 recommendations, including a call for the existing stay-or-go policy to be tweaked to allow for a “comprehensive approach to evacuation”.

NOTES

The New South Wales Rural Fire Service (NSW RFS) which deployed nearly 4,000 volunteer members to fight the fires stated that there were many areas where valuable lessons could be learned from Black Saturday, including:

- The need for greater public awareness before major fire events and community liaison during these events
- Taking a comprehensive approach to community shelter options
- Identifying vulnerable communities and having measures in place to provide necessary assistance and protection.

Stephen Horton, Chief Executive Officer of St John Ambulance Australia (VIC) Inc. wrote, "The tragic Victorian bushfires around Black Saturday in February 2009 and other fronts across March and April tested our volunteers, staff and resources to the very limit. Our response involving 49 continuous days of deployment in support of front-line fire fighters at fire staging areas, as well as members of the public at community refuges across the State, supported by communications and logistics resources at our emergency operations center in Mt Waverley, was nothing short of remarkable."

RECOMMENDATION 5 – UPDATE YOUR STRATEGY OFTEN, CALCULATE THE RISKS, READY FOR THE UNEXPECTED

TO BE PREPARED IS HALF THE VICTORY

Emergency agencies that have had the misfortune to test their emergency plan in a real disaster situation will support the quote by *Don Quixote* author Miguel De Cervantes: 'Forewarned, forearmed; to be prepared is half the victory'.

A well prepared strategy in advance of a disaster will save lives and help emergency agencies through all four phases of risk reduction, readiness, response and recovery. It demands a constant cycle of preparedness involving planning, organizing, staffing, resourcing, training, exercising, evaluation and improvement.

Few will argue that advanced planning and preparation along these lines together with lots of practice can lead to less fatalities and minimize loss of property and damage to critical infrastructure. Where we come unstuck is when disasters strike that we least expect, where we are ill-prepared, or our resourcing is inadequate. Emergency response plans must not only be created for each of the calculated the risks within a region and with a series of appropriate response strategies, but also for the unexpected and/or a worst case scenario.

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For instance, if your area is prone to drought, your emergency plan would likely detail the processes involved for responding to a fire. If your city is a possible terrorist target, then counter terrorism measures are needed. Likewise if your region rests on a known seismic fault, then earthquake preparedness is essential. But what would you do if your disaster was not one of your calculated risks, or was much more damaging than anticipated?

In 2007, after severe criticism of the response after the devastating Hurricane Katrina disaster, the US Department of Homeland Security published the National

Preparedness Guidelines – a risk-based approach to preparedness. Its vision: a nation prepared with coordinated capabilities to prevent, protect again, respond to, and recover from all hazards (threatened or actual terrorist attacks, major disasters and other emergencies) in a way that balances risk with resources and need.

Risk, it says, is a function of three variables: threat, vulnerability and consequence. With a set of National Planning Scenarios representing a range of threats, Homeland Security encourages emergency agencies to analyze the range of potential impacts in their area and determine the capabilities both in terms of capacity and proficiency. They then supplement the approach with a risk assessment on specific threats, vulnerabilities and consequences, and tailor it according to the differences in risk across the nation.

"When preparing your emergency strategy you must plan well beforehand to avoid having to make it up on the day. You need to think about the structures, the connections, and your priorities. Think about what's the worst that can happen and have plans and the critical linkages in the communications networks in place. Make sure they are robust enough to survive an emergency situation so that you can communicate. It seems obvious, but it's not always carried out. You are completely blind without situational awareness, and you won't get situational awareness without receiving information," said Mr Hamilton.

Emergency managers must also reassess the resilience of their organization. "If your prime operating site was compromised in one way, shape or form in a disaster, where is your alternative? Whether it is the building that is compromised, or you run out of electricity, or you don't have communications, you need an alternative and warm location for emergency operations. The Christchurch experience revealed how important it is to have these plans in place so you can continue to operate," he added.

BUILD COMMUNITY RESILIENCE

Prevention is better than cure, and preparing the community to survive by themselves for at least three days after a disaster should be a major focus of every emergency strategy. It is the most cost-efficient method for reducing the effects of a disaster. A major component of the strategy will involve communicating the risks to the public, advising them how to be prepared, and building community resilience.

"Having resilience in the communities reduces risk by ensuring a high state of readiness for the sorts of disasters and impacts that they could experience in their area. In our 'Get ready, get through' campaign we encourage people to think about how they will survive on their own for at least three days," said Mr Hamilton.

Prior to the earthquake we had a 75% surveyed-level of awareness that we live in a risky environment and that we should be prepared. Unfortunately that has tended to be translated to a low 21-25% uptake. After the earthquake the 21% uptake jumped to about 40%. How long it will stay there we don't know. It will erode quite quickly I suspect. It takes a jolt to get people to say 'that was close, or that could have been me. Perhaps I'd better do something.' I guess the answer is we're on the right track in terms of getting the public prepared, but we have to keep hammering the message in."

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CONCLUSION

Planning for a disaster is not a straightforward matter; we hope that this paper will provide insight into what can go wrong and the importance of being prepared for the worst case scenario. We encourage you to ask yourself these 12 questions:

1. Do we have an emergency strategy or Business Continuity Plan (BCP)?
2. When was the last time we updated and tested our emergency strategy?
3. Have we considered every contingency?
4. Are our service providers or partner agencies BCP's robust and well-practiced?
5. Will we know where all emergency personnel and vehicles are at any one time if the power is down, or the roads are closed?
6. Do we have an 'incident management system' and suitable technology resources?
7. Do we have established and effective lines of communication with our service providers and other emergency agencies?
8. Are we prepared for a disaster? Do our emergency personnel train and practice for major national disasters every year?
9. How do we make ourselves aware of everyone's needs, and find, communicate with and help those in the community who can't reach us?
10. Do we have established relations with our stakeholders, local businesses (i.e. hardware suppliers, concrete cutters), and community groups who we can correspond and work with in an emergency?
11. Do we have a communications plan and team able to communicate appropriately with both the media and public via a range of mediums, including social media?
12. Is our community aware of the risks, and ready and able to survive by themselves for up to three days after a disaster?

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