

CRISIS▶RESPONSE

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PROTECTION | PREVENTION | PREPAREDNESS | RESPONSE | RESILIENCE | RECOVERY



WATER & RESILIENCE

CAN TECHNOLOGY DELAY A GLOBAL WATER CRISIS?

NOVICHOK POISONING | CBRN & MEDICAL STOCKPILES | DIGITAL SECURITY | MANAGING
SPORTING VENUE RISK MANAGEMENT | CAR CYBERSECURITY | DATA PROTECTION |
PLANE CRASH IN AUSTRALIA | REPUTATION CRISIS MANAGEMENT | CHINA EARTHQUAKE
PREPAREDNESS | HUMANITARIAN SEXUAL ABUSE | ROLLERCOASTER RESCUE IN UK

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Our water feature this issue highlights how this most precious resource, which is the most vital element to any aspect of human survival, is treated casually by so many people around the world. Most people and businesses in developed countries take it for granted that if we need water, it will be there – clean, abundant and in the quantities we need. And let's not forget that almost one billion people have no access to clean water at all.

Water supplies are under threat – population growth, climate change, over-abstraction, agriculture and infrastructure all play their role. Even worse, plastic in oceans and its effects on marine life and the dangers of plastics entering human food chains, along with toxic elements and poisons being discovered in water, are all occurring today. Worse still, water can be used as a political or military tool by state and non state actors, as well presenting an attractive target to terrorists.

Given the above, it is clear to see why water is classified as such a vital element of critical national infrastructure – it is not only essential to our survival, but also to our security, wellbeing, health, businesses and livelihoods.

One only has to turn to recent events in Cape Town to gain an understanding of just how cataclysmic it would be if a city simply runs out of water. All aspects of life would be affected, raising the spectres of disease and threats to security.

Thankfully, Cape Town's Day Zero has been postponed to 2019, thanks to extreme water conservation and other measures, but other cities around the world face similar threats. See p34 for an article on how the Brazilian city of São Paulo coped with its own water crisis, and what measures need to be undertaken to conserve its future supplies and the viability of the city itself.

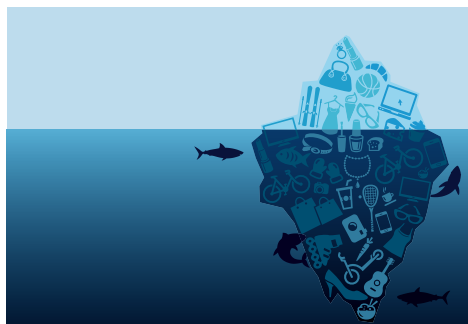
There are always solutions, but they can be extreme. Communities, businesses and individuals – including all those involved in emergency management, preparedness and response – must all recognise the contribution they can make towards ensuring water supplies are sustainable, and remain so.

Technology can also play its part. Both Laurie Reynolds (p38) and Matt Minshall (42) discuss how artificial intelligence, machine learning, sophisticated digital technology and geospatial information – among others – can help secure, protect, monitor and conserve supplies.

It is time to afford this vital resource the respect and attention it needs.

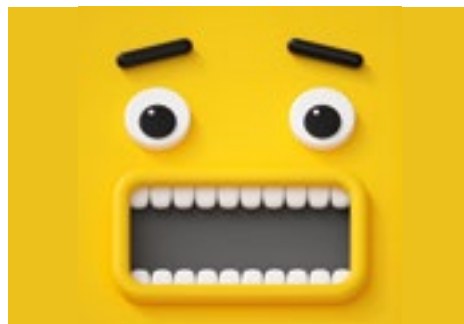


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Chris Pettican

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Katisa | 123rf

However much planning and training goes into preparing for a major incident, there are likely to be procedural failures that lead to a significant degradation of service delivery, either because of the impact of the external event or failures in internal management controls, according to **David Rubens**



On May 22, 2017, a suicide bomber detonated a device just outside the Manchester Arena, killing 22 people, many of them children attending an Ariana Grande concert. This was a high-impact incident that placed all of

the emergency management networks, including emergency services, hospitals, transport managers, city managers and civic leaders among others, under immense pressure.

However, it is also exactly the sort of attack that must be considered as a core strategic capability for any organisation operating in today's threat environment. The *Kerslake Arena Review* into the response of the emergency services to the incident makes it clear that much of what was achieved across all aspects of the emergency response was effective and appropriate. Indeed, many members of the emergency services went over and above the call of duty. They responded to the incident, cared for the casualties and ensured the safety and wellbeing of all those caught up in the immediate event, and those affected in secondary ways, either through their relationships with actual and potential victims, or by being caught up in the natural disruption that followed.

Real-world test

As the Lord Kerslake points out, despite the fact that the Greater Manchester Resilience Forum had carried out many multi-agency planning and emergency response exercises, none of those involved had ever encountered anything like the events of May 22; this was a real-world test of the plans and assumptions in a way that can never be replicated in training exercises, however realistic they might be.



Multiple multi-agency exercises had been organised previously – in fact, one had been carried out only a few months before the attack. This meant that most of the emergency response agencies at the scene were able to work together with the confidence that repeated joint exercising brings. This was clear in the way that decisions were made at a time when they did not fit into 'accepted procedures', but were felt to be the most appropriate action in the specific, and often chaotic, circumstances. One example was the decision to establish the Casualty Clearing Station on the station concourse and to allow

Multi-agency response review of Manchester bombing



The scene outside the Manchester Arena after the bombing on May 22, 2017

MCPIX | Rex

emergency staff and members of the public to remain in the foyer, notwithstanding its designation at the time as a 'hot' zone. These were vitally important judgements that significantly influenced the course of events.

However, the root causes of major critical failures in the response operation were not unexpected and could have been predicted and prepared for as part of the basic principles of multi-agency major event response. They are the same issues that are highlighted in the executive summaries of every post-event review and report, whatever the specific details of the incidents involved.

In the simplest terms, these are the challenges associated with communication and integration – information exchange, joint decision-making and the ability to create a common operating picture between all of the responding agencies, both horizontally on a multi-agency framework, and hierarchically through the various command levels of Gold, Silver, Bronze.

As an example, here follow excerpts from a number of different reports, which could probably be cut and pasted in their entirety and dropped into any emergency response post-action review and be equally relevant. I have excluded

the names of the incident or countries involved (see sources).

"I heard this refrain again and again from (...) emergency planners: excellent work within individual agencies, but still a lack of government-wide disaster response planning. Interagency co-ordination is still weak, and in most cases the government's disaster response plans are woefully short of detail. Most agencies are unfamiliar with the disaster response plans and capabilities of other agencies, impeding efforts to develop well-coordinated plans. Underlying all of this is the (...) government system, which does not appear to encourage rapid decision-making or interagency co-ordination."

"In essence, there is concern that the regional disaster prevention plans that have been created to satisfy those involved in local government will be useless when put into action. (Specific programmes) are just that, overproduced systems that cannot be easily operated or revised. Ironically, these deficiencies are obvious to the governments that paid for them."

And: "The preparation and response to (...) shows that we are still an analogue government in a digital age. We must recognise that we are woefully incapable of storing, moving and accessing information, especially in times of crisis. Many of the problems we have identified can be categorised as 'information gaps' – or at least problems with information-related implications, or failure to act decisively because information was sketchy at best. ... One would think that we could share information by now. But (...) again proved that we can't."

The two major failures in the Manchester bombing response both involved communications. In the words of the report: "The Greater Manchester Fire and Rescue Service (GMFRS) did not arrive at the scene and therefore played no meaningful role in the response to the attack for nearly two hours."

Information gaps

The other communication failure involved the Casualty Bureau, which should have been set up as a point of contact and centralised information-sharing for people seeking information on the missing, injured or dead. This had been outsourced to a private company – Vodafone – under the National Mutual Aid Telephony system. In the words of the review, it was: "A complete failure." This affected both the ability of local families to contact the helpline, and integration of the Manchester system into the wider national framework, which was supposed to give the option of increased capacity in this sort of situation.

One additional point highlighted in the *Kerslake Review* involved the fundamental issue of multi-agency response and collaboration. Given the increase in locally radicalised home-grown terrorists creating high-impact attacks, using either weapons or vehicles, it is to be expected that the response planning would be at the heart of modern policing and major city management. This was the case in Manchester, which had a well-practised framework in place – Operation Plato – the multi-agency response to a marauding firearm attack.

However, as the report states: "There was not a shared communication across the agencies of the declaration of Operation Plato ... nor was there a shared understanding of its implications."

Although the circumstances were different, the use of Operation Kratos that underpinned the killing of Charles

de Menezes in London in 2005 shows remarkably similar issues in terms of confusion at the highest level of leadership, a lack of understanding about the implications of the operation and, as always, breakdown in communication. The report on that incident by the Independent Police Complaints Commission stated: "The main and central issue in this tragedy is whether the level of identification was properly communicated from the surveillance team ..." The significance of taking decisions under the extreme pressure of command is also underlined in that particular report.

Responding to what is perceived to be a credible threat, whether in terms of a suicide bomber approaching a target in London during a period of highest national alert, or to a terrorist attack in a concert venue, puts every aspect of the system under pressure. However, this cannot be used as an excuse for failure, especially when the causes are already recognised as those points that are most likely to fail, and which would have the greatest impact on the ability of all responding agencies to act quickly and effectively. While there is no desire to apportion blame, there is the need to recognise responsibility, as I am sure responders at every level of those agencies would acknowledge.

Communications and information transfer are at the heart of any multi-agency response, and it is the failure to manage those issues, under the intense stress of an actual response environment, that is almost always the root cause of operational failures. It is not enough to expect that things will go well, or as planned. In fact, the significant points at the heart of the responses to both the Manchester bombing and the Charles de Menezes shooting were how well the relevant agencies were able to adapt and respond to highly unstable situations, which were evolving and mutating on a minute-by-minute basis, for which they often had only partial, unclear or unverified information.

The ability to manage the transfer of complex information, under pressure, between multiple stakeholders, within the confusion of an actual crisis, is the foundation of effective response. Without this, it is impossible to deliver a cohesive, integrated multi-agency response.

The tragedy is that the lessons that need to be learned are written in blood. Minutes after the south tower collapsed at the World Trade Center in 2001, police helicopters hovered near the remaining tower to check its condition. "About 15 floors down from the top, it looks like it's glowing red," the pilot of one helicopter radioed at 10:07 hrs."

Seconds later, another pilot reported: "I don't think this has too much longer to go. I would evacuate all people within the area of that second building."

Those clear warnings were transmitted 21 minutes before the building fell; officials say they were relayed to police officers, most of whom managed to escape. Yet most firefighters never heard those warnings, or earlier orders to get out. Their radio system failed frequently that morning and was not linked to the police system. Police and fire commanders guiding the rescue efforts did not talk to one another during the crisis.

Three-hundred-and-forty-three firefighters died in the twin towers. Thanks to the warning given over the police radio system, 'only' 60 police officers died.

Responders cannot affect the incident itself, but they can take responsibility for preparing to manage the response in the best manner available.

As Rittel and Webber say, in their *Tenth Law of Wicked Problems*: "The planner has no right to be wrong."

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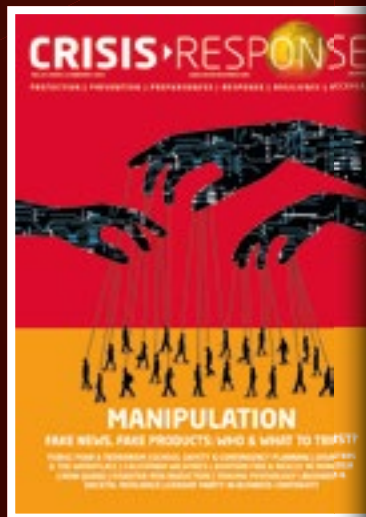


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