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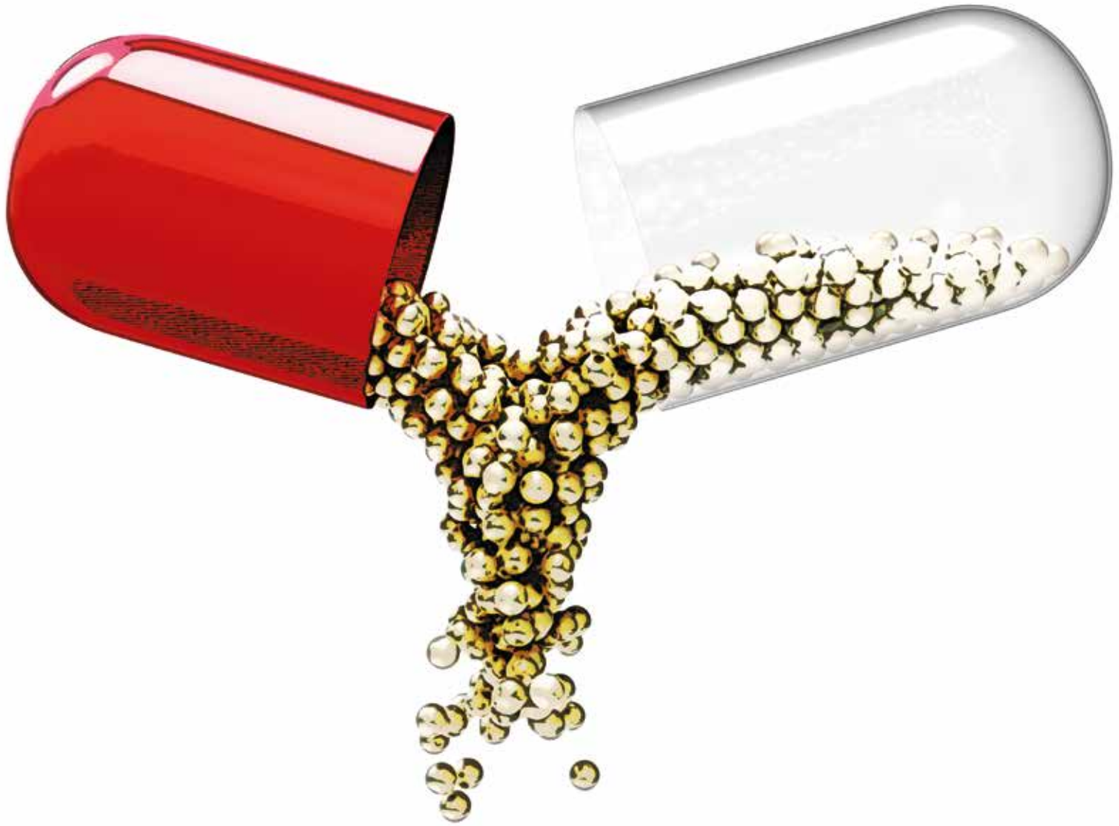

ANTIBIOTIC RESISTANCE
CONFRONTING THE GLOBAL CRISIS

PLUS: Brexit; Flooding in France; Nanoparticles & First Responders; Agriculture & terrorism; Search & Rescue in Antarctica; Crisis leadership; Stability policing; Public information & social media; Conflict de-escalation; Robotic developments; Command & Control in the 21st Century

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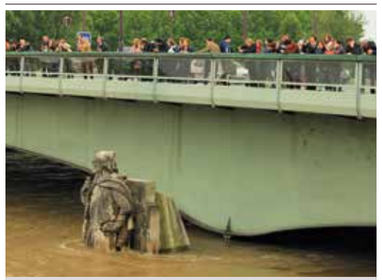

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As usual, this edition spans emergency and disaster analysis, prevention, protection, preparedness, response and resilience.

Admittedly, it is equally morbidly fascinating and disturbing to see how crises intersect, conflating and exacerbating one another, spawning greater emergencies that appear simply beyond the scope of prevention or mitigation, sometimes leaving agencies seemingly powerless to respond effectively to their sheer scale and complexity. But how bad is the global situation?

After all, it is not beyond experts' capabilities to predict, identify and categorise tomorrow's most devastating disasters. Terrorism, natural catastrophes, conflict: This edition addresses and provides insight into all of the above.

At this time, we don't have definitive statistics for 2016. But, despite the widely-held perception that terrorist attacks are increasing, the US State Department's annual terrorism report notes a 13 per cent decrease in attacks in 2015, with 14 per cent fewer deaths. This year's figures might be higher (page 52), and modus operandi may be shifting, but the line between criminality and terrorism has become blurred, and we must be wary of classifying all violent criminal acts as terrorism, as Christine Jessup warns (page 54).

Again, we know that natural disasters are on the rise. But Munich Re says last year saw a fall in losses from such catastrophes in terms of incidents, fatalities and in financial losses.

Granted, these figures are in no way cause for complacency; we are certain to face larger and more complex emergencies in the future. But there is an even greater lurking disaster, which *CRJ* has touched upon in past editions (Prof Steiner, *CRJ* 10:1); one that we can no longer afford to ignore. Deaths in a world without antibiotics could dwarf all other catastrophes, killing up to ten million people a year (page 26).

How sobering it is to reflect that, despite all our technological advances, prevention, co-operation and hard work in crises and disasters, an absence of antibiotics would not only claim more lives than climate, conflict and terrorism combined, but augment their effects immeasurably. Let's hope that the high level UN meeting on this subject in September produces the unequivocal commitment that this smouldering global health emergency demands.

Emily Hough

Instruction to innovation: Incident Command

This new series by **David Rubens** will identify some of the major issues involved in developing a multi-agency Incident Command System appropriate to today's hyper-complex crisis and disaster management events

The nature of crises has changed radically in recent years. Rather than being 'major incidents ' or 'routine emergencies', they are now characterised by hyper-complexity and the catastrophic impact of their consequences. The centralised command systems that have traditionally been considered the bedrock of crisis response programmes are repeatedly failing to stand up to these challenges and it has become clear, after incidents such as 9/11 and Hurricane Katrina, that new forms of non-hierarchical, decentralised decision-making and strategy-setting frameworks are needed.

This series looks at some of the issues that traditional hierarchical command systems need to address, suggesting areas for investigation into the benefits of non-traditional command systems.

A series of recent global events has significantly tested the fundamental assumptions underlying current methodologies. These include the power blackouts that affected 600 million in northern India; the consequences of the Fukushima tsunami and earthquake which, within a few days, left Tokyo on the edge of being a city without food; volcanic activity in Iceland that disrupted international travel, and increasingly frequent banking IT failures that have affected tens of thousands of people.

In the scale of their impact and complexity, these situations transcend any traditional concept of crisis management frameworks or organisational jurisdictions. The failure to deal with these primary issues and their secondary consequences effectively, can no longer be seen as management failures, but as a challenge to the legitimacy of governments tasked with ensuring public safety, and with potential implications as to the social, political and economic continuity of a country.

Traditional crisis management is based on the concept of 'managing the gap', whether it is the period between crisis cognition and actual triggering – which gives time to develop and deliver preventative measures – or the time lapse between triggering and full-scale escalation – which allows time for the introduction of mitigating measures. In a world of apparently spontaneous triggering of potentially catastrophic events, and instantaneous cascading of complex consequences across transboundary and often global geographical spreads, the luxury of that time gap no longer exists.

The emergence of 'unthinkable' and 'inconceivable' crises characterised by catastrophic impacts and hyper-complex consequences means that modern crisis management has become less concerned with the prevention of catastrophe than in managing its aftermath.

Despite the traditional understanding of crises as existing in the corner of the risk matrix marked by high impact/low likelihood, situations such as those listed above can no longer be seen as improbable or rare. The number, magnitude and impact of natural disasters are showing an upward trend, and the scale, impact and complexity of their consequences on state and regional stability have increased beyond the scope of the original conceptualisation of managed crisis response.

The increasing interconnectedness and interdependency of the global community, which has led to a growing inability to control, or even understand, the governing mechanisms by which our basic social networks are managed, means that crises today, more than ever, are becoming unknown unknowns, to paraphrase Donald Rumsfeld. To put it even more starkly, rather than approaching these problems from a position of *tabula rasa*, confronting them may be considered as entering complete terrae incognitae, as Patrick Lagadec has put it.

With a triggering and escalation period of seconds, rather than hours, days or weeks as in the past, the world is now permanently on the edge of a potentially total systems breakdown. The increasing complexity and cascading nature of present day crises means that we can longer rationalise them in terms of control or management, but only in terms of recovery and, in many cases, survival.

While the nature of crisis has changed, it is questionable as to whether our understanding of the requirements of effective crisis management models and methodologies has evolved to the same degree. The 9/11 attacks called into question many of the issues involving effective management of, and response to, 'unthinkable' scenarios, but it was the widespread failure to respond effectively to Hurricane Katrina and the damage and suffering in New Orleans that called into question the viability of extant CM methodologies and capabilities. The failure of the traditional, centralised, hierarchically-based command and control system accepted as the default foundational system for theoretical and administrative approaches to crisis management, led to a call for a: "Redefinition of organisational framework and standard terms of emergency management... that fit the reality of practice in extreme events."

Rather than adapting existing methodologies, this process of 'double loop learning' would call for a concerted attempt to change the paradigm within which crisis management is conceptualised, based on a fundamental questioning of underlying policies and basic practices.

This series offers a reappraisal of crisis management models, taking cognisance of the reality of the failures of traditional CM management methodologies in the face of 21st century challenges, and theoretical research and empirical evidence concerning non-traditional decentralised command systems. It follows on from the work of other authorities concerning the need to develop alternative CM and decision-making processes appropriate to the realities of modern crisis scenarios.

The 9/11 attacks, Hurricane Katrina, Fukushima, Haiti and similar incidents, have dramatically shown that any model of CM that claims to offer solutions to the threats that the world is facing in the 21st century, will need to demonstrate an ability to react and respond in an environment defined by catastrophic crises and hyper-complexity. CM command systems across the world, but most notably in the US, are firmly grounded in a centralised, hierarchical model of command and control. These are often accepted as the de facto default setting for CM, especially following the development of the formal Incident Command System (ICS), in response to what was seen as failures in multi-agency capabilities during Californian wildfires in the 1970s.

The US Department of Homeland Security-mandated Federal Emergency Management Agency (FEMA) ICS follows this model, irrespective of the nature or scale of incident, a requirement that was maintained even after the policy changes following Hurricane Katrina. Such centralised command systems are based on a military model of command and control, in which a strictly pyramidal command structure has unity of command as the guiding principle. However, there is also an increasingly sophisticated understanding of how the ICS framework can support the development of enhanced capabilities able to respond to the chaos and confusion of what might be called 'normal crises'.

As such, it can adapt its role to the needs of a co-ordinated multi-agency network management approach, rather than being stuck in a systems-led hierarchical command system. However, its hierarchical structure is precisely the weakness that makes it incapable of adapting and responding to the rapidly escalating levels of infrastructural breakdown that is a feature of a true crisis situation. It is this attempt to extend the domain of rationality and bureaucratic organising to the uncertainty, and often chaotic, disaster environment that has led to repeated and systemic failures of crisis response programmes, precisely when they are most needed.

Although the centralised command system is considered a rationalistic response to the pressures of a crisis, in that it allows decision-makers to make fast decisions, decide on response strategies and bypass normal bureaucratic channels, the concentration of power within a small group of homogeneous senior managers can create an environment where personal power and influence override the need to create immediate and innovative responses.

Although it would be nice to presume that the pressures and potential catastrophic damage in crisis situations would create an environment where all actors co-operate for the best interests of the wider community, unfortunately that is not the case. The choice of who is in and who is out is in itself a political decision, and often results in a decision-making cabal comprised of self-selecting experts, who set up exclusionary barriers based on their own bias.

While such small-group thinking creates pressure on its members to compromise on hard decisions in order to maintain group cohesion, overly prioritising group cohesion can also lead to faulty decision-making. Even in the heat of crisis management, the overriding law of the organisational jungle may mean that the self-serving and identity-defining competition for power and influence will often trump the need to support others within that circle.

Although the unique nature of each crisis underpins the failure to respond and manage it appropriately or effectively, the operational reasons for failures are often simple and predictable. Once an incident goes beyond normal operational status and escalates into unfamiliar challenges, the subsequent breakdown in response capability is almost inevitably identified as being down not to the nature or scale of the event, but to a breakdown in what should be fundamental incident management functionality. Official reviews into major CM failures like Hurricane Katrina, Fukushima and the Anders Breivik massacre (Norway, 2012) repeatedly identify the same five fundamental organisational weaknesses: Lack of understanding of the nature of the crisis; lack of realistic modelling of required responses; lack of leadership; lack of effective communication; and lack of interagency capability.

These are in line with one of the most comprehensive reviews of crisis disaster management that there were likely to be critical problems concerning communication and information flow, authority and decision-making, and failures to manage increased co-ordination and a loosening of the command structure. The 9/11 report stated, aside from specific operational issues, that underlying fault lines in the government's failure to develop an effective crisis management capability were founded on its: "Broader inability to adapt how it manages problems to the challenges of the 21st century." CRJ

■ *Part II in our next issue will examine the topology of crises; a full list of references will be available at the end of this series*

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