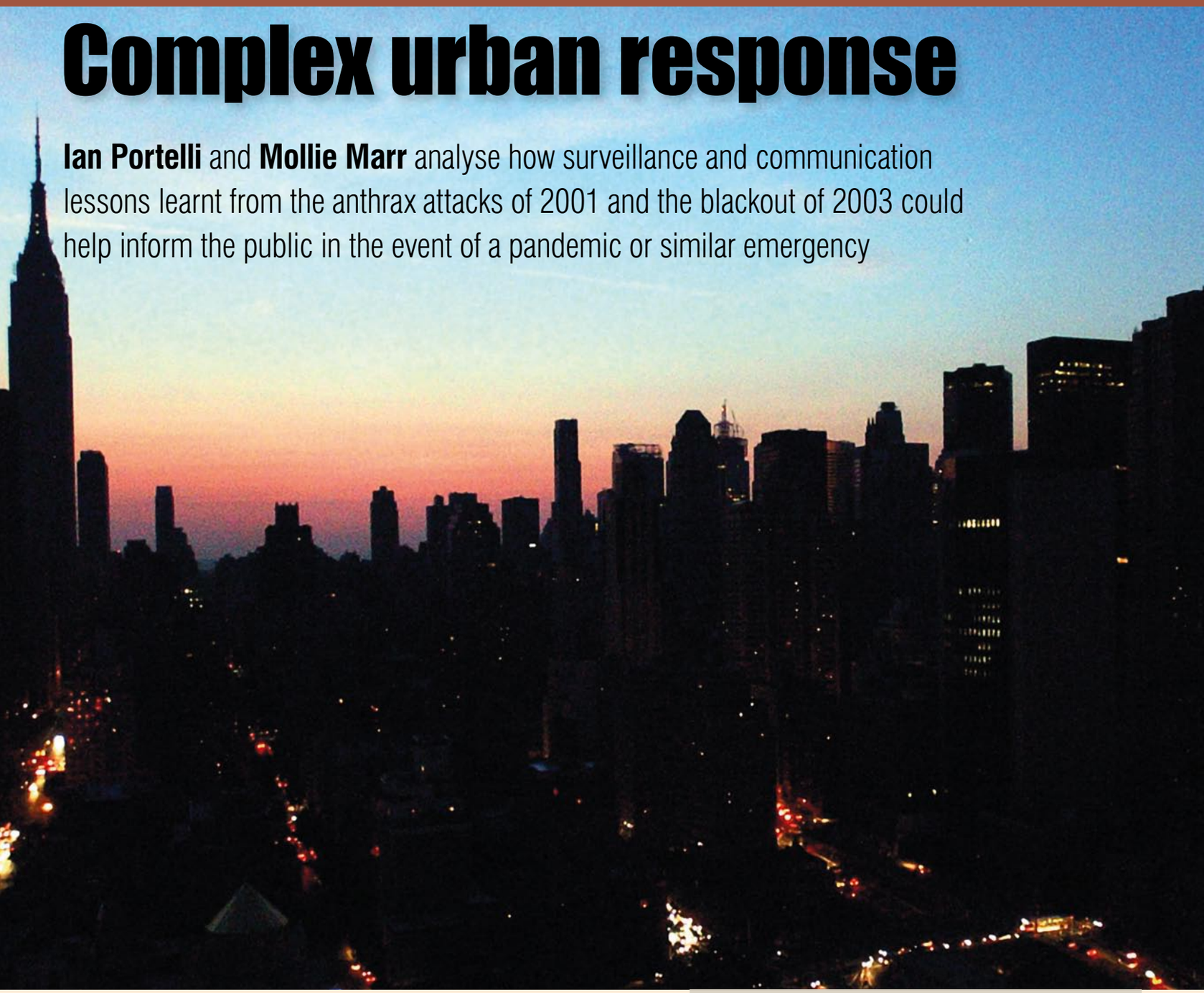
Complex urban response

Ian Portelli and **Mollie Marr** analyse how surveillance and communication lessons learnt from the anthrax attacks of 2001 and the blackout of 2003 could help inform the public in the event of a pandemic or similar emergency



Cars trying to navigate their way through New York City during a blackout that hit US and Canadian cities in August 2003, stranding people in subways, closing nine nuclear power plants from New York to Michigan and choking streets with workers driven from stifling offices

AP Photo / Frank Franklin II

ON SEPTEMBER 18, 2001, TWO letters containing weapons grade anthrax were mailed to *NBC* and the *New York Post*. In the following days, additional anthrax-tainted packages were identified, leading to a snowball effect as individuals presented to hospitals nationwide, concerned about possible anthrax-related symptoms.

Confirmed anthrax cases were reported in New Jersey, Florida, Delaware, Washington DC, and eventually Connecticut. By the time Florida's index case was announced on October 4, 2001, individuals in three states already showed symptoms of cutaneous and inhalational anthrax.

In response to both Florida and New York City's October 9 index cases, the New York Department of Health and Mental Hygiene (DOHMH) immediately increased and expanded its surveillance activities. It established a provider triage/surveillance hotline, a public service hotline, and disseminated protocols on the treatment and diagnosis of anthrax.

In 1999, the Mayor's Office of Emergency Management (OEM), along with the DOHMH, had developed protocols for antibiotic prophylaxis in the case of bioterrorist activity involving anthrax, including plans for providing treatment to eight million New Yorkers within 48 hours of a possible exposure. On October 10, 2001, the incident command structure outlined in that protocol was initiated; and planning for provider training, antibiotic distribution, and case charting began. The DOHMH set up point of distribution (POD) sites at possible anthrax exposure locations. Individuals were interviewed, examined, and debriefed at these PODs as part of ongoing medical and criminal investigations. Six PODs operated between October and November, treating more than 11,000 people, and although heightened surveillance remained in place, no additional anthrax cases were identified after November 2001.

The media storm that followed these anthrax cases communicated both accurate and inaccurate information to an already worried public. In New York City (NYC), the then Mayor Rudy Giuliani developed a

structured approach to risk communication and interactions with the press. This included press conferences led by a united front of officials from relevant agencies, clearly and confidently communicating accurate information and allowing the experts to speak and modelling assertive leadership with empathy.

Giuliani recognised that good communication is the best approach to keeping the public aware and safe during high-risk events. Former Assistant Commissioner from DOHMH Dr Marcelle Layton explained that past experiences led the DOHMH: "To go public quickly," because: "It's hard to keep things quiet in a city like New York."

The DOHMH regularly faxed hospitals up-to-date information, established a hotline for the public, created a website, and provided fact sheets and expert communication to government officials and the community.

The public also relied on local and regional poison control centres for information and advice, with the NYC poison centre experiencing a sharp increase in calls related to anthrax. The efforts of the DOHMH, local poison control centres, and the Mayor's Office meant that accurate information was rapidly available to the public, but despite these efforts, communication failures plagued and complicated the anthrax scare.

The most significant breakdown in communication occurred between federal, state, and city agencies; and partner core institutions. This breakdown occurred between agencies working with different objectives, such as law enforcement performing criminal investigations at anthrax sites, while public health officials attempted to determine the identity of an unknown white powder; and between agencies working toward the same objectives, such as local, state, and federal health authorities.

This meant that local public health agencies were often advising concerned individuals about possible exposure without knowing the results of confirmatory tests. Further, because a federal emergency response plan was implemented during the anthrax attacks, communication from the government was centralised at cabinet level, thus removing communication from the Centres for Disease Control and Prevention (CDC). The impact of this shift of communication from the CDC to the Secretary of Health and Human Services (HHS) cannot be understated. Historically, the CDC provides leadership and trusted information during public health crises. Both media and the public traditionally turn to the CDC with bioterrorism-related questions, and its responses and recommendations are respected and trusted. Once the shift was made to HHS, all communications originally sent to the CDC were forwarded; but HHS lacked the manpower and the expertise to answer many of the health-related questions, so accurate, timely, and articulate information was not communicated.

A survey following the anthrax attacks found that the public preferred to get information about anthrax from someone with medical credentials, and that citizens trusted and wanted to hear from the CDC. Ultimately, it was the exposed individuals who suffered the most because of this lack of communication and collaboration.

The experience of postal workers, the largest group with potential exposure to anthrax, is a case in point. Most postal workers relied on the news media for information, but the media fluctuated between frightening reports and advising people not to worry. This contradictory information was exacerbated by the CDC protecting its employees with full protective gear when collecting environmental samples from the post offices, while postal workers were told simply to wear masks and gloves and wash their hands.

Lack of concern

Postal workers were angered by the apparent lack of concern for their health by local and federal agencies, and were also aware of their potential exposure. They mistrusted public health officials who could not answer questions about this novel 'weapons grade' anthrax. They felt that health officials treated them in a hurried manner without empathy, seeming to collect data without regard for their individual health concerns. Finally, postal workers were angered by obvious discrepancies in support and treatment received when compared to Capitol Hill employees.

The DOHMH closely monitored reports of anthrax through syndromic surveillance at NYC hospitals throughout Autumn 2001. But the next major spike in syndromic surveillance occurred in 2003, following the electrical blackout, which affected most of the north-eastern US. Hospital emergency departments reported to the DOHMH an increase in patients with gastrointestinal complaints. The NYC poison centre also saw a spike in calls during this time and identified several causes, including consumption of contaminated food and water, and exposure to gasoline after attempts to siphon it.

Although the poison control centres observed a sharp increase in calls, Dr Layton stated in an interview that no one had called the DOHMH. This is testimony to the unique role of poison control centres in toxico-surveillance.

These centres in many cases, represent the first point of contact for symptomatic or concerned individuals seeking information; and therefore have a real-time awareness of syndromic changes within a particular area.

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They are available 24/7 and are staffed by certified providers with extensive training in triage, risk assessment and communication. All employees undergo rigorous drills and scenario training with local, state and federal agencies.

The reference materials at a poison control centre comprise basic drug information to symptoms and treatments for chemical, biological and nuclear weapons exposure. These centres also contribute the largest real-time poisoning database in the US, the Toxic Exposure Surveillance System (TESS), which compiles and reports information to the CDC every four to ten minutes.

Poison control centres are an invaluable contributor to the public health infrastructure and disaster preparedness and mitigation.

The current public health concern is H1N1 and NYC is approaching this influenza season in the same way it approaches a disaster. Officials from DOHMH, physicians, and the Mayor's Office are planning to address the expected surge of patients presenting to hospital emergency departments, as well as resource distribution for inpatient care and patient transport across NYC hospitals.

The DOHMH created and released a website dedicated to influenza, providing information for schools, health care providers, employers and the media. It gives online real-time surveillance data collected and compiled from hospitals, laboratories, and the Office of the Medical Examiner, with daily and weekly updates; and summarises the current findings in a coherent and focused way.

Direct link

Extensive information on prevention, vaccination, and treatment is provided through posters, brochures, and handouts available for download. Through podcasts, widgets, and RSS feeds, anyone can have a direct link to the most up-to-the-minute influenza information and can easily incorporate these features on websites and home computers. The CDC is also providing extensive information to the public on its website. This includes: Guidance for vulnerable populations; press updates; downloadable social media, including buttons and badges, eCards, Twitter, mobile access, videos, podcasts, RSS feeds, text messaging, widgets, and social networking profiles on sites such as Facebook and Myspace; and nationwide surveillance information on reported and confirmed morbidity and mortality.

The DOHMH and the CDC are currently incorporating novel and modern approaches to communication with the public as part of their planning for this influenza season and the threat of H1N1. They are actively addressing concerns raised by the public and updating their strategies to reflect lessons learnt worldwide from numerous disasters and crises, including the anthrax attacks. The key test, however, is always in the midst of a crisis or disaster, when the most robust communication system and detailed planning faces the disruption and chaos that accompany any unexpected event.

FBI agents at the America Media building after a third employee had been exposed to Anthrax in 2001. Hospitals began to experience a snowball effect, with people turning up, concerned about possible anthrax-related symptoms

Jennifer Podis / Rex Features

The lessons learned during the anthrax attacks and the 2003 blackout should guide future public health initiatives and risk communication strategies. Specifically, federal and local departments, whether health or law enforcement, should form collaborative partnerships based on mutual respect, open communication and transparency. Messages to the public should be presented by both local and federal members of this partnership and should be drafted jointly. In this way, the information presented to the public is consistent and the public senses a united effort. This reduces confusion and helps instill trust during the crisis. And although it may seem counter-intuitive, the 'command-control' approach to disaster management can prevent creative solutions and inhibit communication.

The key aspects of communication repeatedly mentioned in the interviews with postal workers were: "Credibility; openness; honesty; empathy; caring; and trust." This group said they preferred a public health representative tell them that they did not know the answer to something and that they would get back to them, instead of an uncertain or simplified answer. They emphasised the importance of agencies following up as new information becomes available, argued that knowing all of the facts actually reduced their anxiety and helped them to act more rationally, and stated they would like more information so as to make informed decisions.

During the anthrax attacks especially, the public looked to the media because citizens felt that they did not have a complete understanding of the situation from the government, and the official messages they did hear sometimes only served to increase public panic.

Government needs to address public fears quickly with accurate and coherent information, and needs to correct and explain publicly contradictions or changes to procedures during a crisis. The most important lesson to be learned in disaster planning, mitigation, and management CRJ

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