The United States is building a national emergency response system to handle large-scale emergencies, write Arnold M Howitt and Herman B ‘Dutch’ Leonard. But there are shortcomings that need to be addressed if failure or incomplete adoption are to be avoided.

**Command system for all agencies?**

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**National system**

It is to face such situations that the United States, spurred by the terrorist attacks of September 2001 and the anthrax letter attacks that followed shortly thereafter, is seeking to build a national emergency response system capable of handling large-scale emergencies. The National Incident Management System (NIMS), mandated by the US Congress in the Homeland Security Act of 2002, seeks to diffuse and extend an innovative system of operational co-ordination for emergency responders. President Bush has now directed all federal emergency response agencies to adopt NIMS. States and localities, too, must adopt NIMS as a condition of receiving federal emergency preparedness grants. NIMS has enormous promise for improving crisis response. Yet successful implementation, which requires collaborative action across the boundaries of professional disciplines, jurisdictions, and levels of government, is by no means assured. Notwithstanding the Congressional mandate, presidential directives to federal agencies, and regulatory requirements and financial incentives for state and local governments, obstacles abound along the path to NIMS implementation. It will take agreed-on commitment, energy, and skill – by senior emergency response officials at all government levels, probably over a decade or more – to make NIMS fully functional. Moreover, there is a major issue of political legitimacy and authority in complex emergency situations that has not yet been adequately addressed.

**Requirements**

In part, NIMS is a national requirement that emergency response organisations adopt a form of the Incident Command System (ICS) or Incident Management System (IMS). This system provides a manageable span of control for each function, and establishes a resource allocation decision-making structure – critically important to avoid dispute about “whom’s in charge” and to enable rapid deployment and direction of personnel and equipment. It systematically promotes information flows up, down, and across the organisation – and to the public.

As a result, NIMS is highly flexible in response to incident type, scale, and location. It has been applied to wildland and urban fires, industrial explosions, earthquake response, hospital emergency room operations, and hostage scenarios – even to the recovery of debris from the damaged space shuttle Columbia, management of mass decontamination, and response to space debris.

It facilitates co-operation between different response organisations and makes sure that their focus on major matters of substantive and managerial concern does not waver as a result of the disorder and stress of disaster situations.

**Challenge of Diffusion**

These features help explain why NIMS has proven versatile and effective in diverse settings. Looking across professions and jurisdictions in the United States, however, one sees considerable variation in IMS "market penetration." IMS has taken deep root in wildland and urban/structural firefighting, as well as among emergency medical services and disaster management co-ordinators. By contrast, although IMS has been formally adopted for hospital-based emergency trauma striking has not been widely adopted in this setting. Law enforcement agencies often have been sceptical or hostile. Moreover, some professional groups likely to be key responders in certain future crises – eg public health infectious disease specialists coping with a bioterror attack or a new emerging flu strain – have had IMS (or no experience with IMS. Several states and a few large urban areas) do not have an emergency response agencies to utilise IMS or closely related systems. California has been most successful, but after more than a decade, the roots of IMS are still shallow in some professions. Other states have pressed their IMS mandates less urgently and therefore have had less impact. Making large-scale public health and legal change based on emergency management medicine, may, for varying reasons, find it difficult to identify the key operational questions which IMS must answer.

As implementation of NIMS unfolds, therefore, it is important, first, to make a compelling case for need. Professional leaders in fields like policing and public health must become convinced and persuasively argue to their peers the importance of an integrated, capable emergency response systems that cut across professional disciplines and jurisdictions are essential. Even if their agencies’ daily work does not involve such challenges, in the future they may have to cope with novel, large-scale crises that arrive with the speed and randomness of the tsunami. Other future crises – such as a pandemic flu – may begin more gradually but spread rapidly and widely and affect our lives over a sustained period.

Recognising the need for NIMS is a necessary but not likely sufficient condition to drive change in those professions that have not already bought into the concept. Many forms of organisational innovation are relatively simple compared to the sort that implementing NIMS involves. Often change can be effectuated mainly by altering management policies, shifting budget or personnel resources from one unit to another, or creating an independent unit to undertake new functions – strategies that require commitment and action only in some parts of an organisation.

But NIMS requires pervasive systems development. Success demands new learning and adaptation not only by rank and file personnel, so it must be established through a comprehensive training and exercise programme. This type of change is time intensive, hence costly in personnel terms; and it may compete with other operational priorities.

Establishing NIMS, moreover, requires more than internal organisational change. Fully realised, NIMS co-ordinates networks of organisations. Some are within a single jurisdiction, but others must be linked across jurisdictions and government levels. Because common executive authority does not hierarchically connect these agencies, organisational co-ordination requires bargaining and mutual adjustment. It will not be created easily nor is it a necessary condition of a national statutory mandate.

**Driving Change**

It is quite possible that the energy the NIMS initiative will disipate, leaving failure or incomplete adoption if the NIMS diffusion process is to be successful, proponents will have to devise a multi-layered strategy to make the vision a reality. At the federal level, the impetus for creating NIMS originated, officials cannot depend merely because of a national statutory mandate. It will not be created through merely legislative mandate and mutual adjustment. It will not be created easily nor is it a necessary condition of a national statutory mandate.

Support must be mobilised within these areas and professions, resources secured to cover the non-trivial costs of training and exercising at all levels and principles and practices must be drilled down through response agencies to rank- and file responders.

Genuine professional commitment, not just formal adherence, must be earned. It is too easy to attribute reluctance to adopt or use IMS as mere professional conservatism, turf protection, or not-invented-here-pique (although elements of each may be marked in some circumstances). Deeper causes are at work.

What is the question?

One way to think about this problem is to ask, "What is the question in which IMS is the answer?" For wildland and urban/structural firefighters, the answer is clear. Their work regularly requires clarity of command and co-ordination of responding. Collaboration among responders and mutual aid providers who may never have worked together before, scalable organisational practices for fires of varying types and sizes, and in-the-moment-allocation of scarce personnel and equipment resources. Overall flexibility is critical, but so is a high degree of standardisation. Systems must fit together when the scale of action changes or, as is often true for wildland fires, the emergency lasts for weeks, requiring depth of relief and substitution of key personnel.

For firefighters, IMS was a creative – even necessary - managerial mechanism that addressed core professional problems. It made good sense to train and exercise all personnel in the system and use it regularly even to respond to small events. IMS became an actual, not merely potential, emergency system.

For law enforcement in the US, by contrast, the answer is less certain. Comparing policing to firefighting, one notes that active field co-ordination involving significant numbers of officers occurs much less regularly (though it does occur, for example, in security for large events, hostage takings, and drug busts.)

Collaboration with mutual aid providers from other jurisdictions is quite rare. Hence, the need for NIMS may seem less compelling, and the costs of preparing personnel and the organisation as a whole may seem more burdensome, perhaps unjustified. Similarly, other response professionals, particularly public health practitioners who are faced with emergency management medicine, may, for varying reasons, find it difficult to identify the key operational questions which IMS must answer.

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difficult to impose given likely Congressional pressure. Both the federal government and the states could encourage local jurisdictional commitment by providing financial incentives to defray at least some of the training and exercising costs involved, though current federal budget politics make this problematic; and high quality technical assistance will be essential for localities with limited experience.

Adaptation
Leadership from professional associations and prominent members of emergency management disciplines will also be important. Part of that effort must be devoted to the constructive redesign and adaptation of IMS principles and practices to fit the operating circumstances of professions that have not been among the original participants in the spread of IMS. While constrained by the need for NIMS to operate across agencies and professional disciplines, each professional group must also thoughtfully customise the elements of IMS to fit its own needs. If that does not happen, NIMS will be regarded as an alien intrusion unsuited to the profession's operating environment and tolerated only to the extent that federal pressure requires.

Even if such adaptation is accomplished, NIMS must become embedded in the professional culture of each discipline. That will result only when respected professional leaders see that their profession's operating environment and tolerated only to the extent that federal pressure requires.

So, as NIMS develops as an emergency response system, we must create parallel structures for making critical decisions that the public will regard as legitimate and compelling.

Missing Element
Making the NIMS vision operational, however, involves more than a massive implementation campaign. As effective as IMS has been in handling many types of large-scale crisis responses, it is not a complete tool kit for organising all types of emergency interventions. Even in the field where it was born, IMS exhibits shortcomings under some circumstances; and these problems are likely to loom larger in some kinds of future crises for which NIMS advocates are preparing. These shortcomings need to be diagnosed more carefully, and complementary systems of emergency decision-making must be put in place and co-ordinated with NIMS.

IMS functions best when it is directed at a well defined, reasonably consistent, or clearly prioritised set of purposes. By contrast, where goals are unclear or in conflict – when difficult, controversial trade-offs must be made – IMS lacks the political and moral authority to make the hard choices that present themselves.

Criticism and discord
When a dozen major forest fires menaced southern California in Autumn 2003, the strategy developed by firefighting organisations was subjected to criticism by local, state, and federal elected officials who disagreed with both the professionals and each other about the objectives and technical means of fighting the fires. There was no adequate institutional forum in which the issues could be credibly engaged and resolved. The emergency response nearly faltered because of discord.

But it is precisely for such complex situations that NIMS is designed. If a pandemic flu, bio-terrorist attack, or nuclear plant disaster occurred, do the responders in command of NIMS – police commanders, fire chiefs, or public health directors – have legitimate authority to decide which areas should get resources and which not, perhaps even to make choices that in effect determine who will live and who will die?

Do they have the community standing and ability to mobilise public sentiment behind a difficult decision or rally supportive action?

We elect leaders to make such decisions for society and to rally their communities, much as President Bush and New York’s Mayor Giuliani did in the 9/11 crisis. But in a future emergency that cuts across organisational, jurisdictional, and level of government boundaries – particularly if government has been partially disabled by the crisis – it may be unclear who has this authority and difficult to assemble them.

So, as NIMS develops as an emergency response system, we must create parallel structures for making critical decisions that the public will regard as legitimate and compelling. The temporary emergency operations structure of NIMS must be paired with institutions that do have ready connections to key stakeholders and legitimate decision-making authority. The United States has not yet confronted this need, let alone fully thought it through and invented the emergency policy making institutions it requires. That is a step that must still be taken.

Conclusion
The National Incident Management System that the US Congress has mandated for federal, as well as state and local, emergency response has great promise for improving societal capacity to deal with large-scale, acute crises. But this mandate is not sufficient to assure that such benefits will indeed be achieved. Implementing NIMS requires solving problems of cross-professional and inter-jurisdictional diffusion of IMS practices. That requires committed action by the federal government, by the leaders and professional associations of emergency response disciplines, and by elected and professional leaders in specific communities.

As important as NIMS is to prepare more effectively for major natural and technology disasters or terrorist attacks, another critical element of emergency response has not been given sufficient attention. NIMS is a technical system that can make decisions effectively mainly when its goals in a particular situation are consistent and coherent.

When situations present complex value conflicts or trade-offs, NIMS lacks capacity to make politically legitimate decisions and to mobilise public support for subsequent action. As a result, we need to develop parallel and interconnected emergency decision-making systems that can make publicly acceptable value trade-offs and set policies that will command support. It may be critical but too late to establish such structures in the heat of the moment.

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