

# Chapter 9

## Interoperability and Multiagency Cooperation

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### Introduction

The ambulance service in the UK started its operations as a service provided through local government similar to the police and the fire service. As such, it was classed as a blue-light emergency service, there to respond to emergency calls from the public via the 999 emergency telephone system. The three blue-light services have developed separately as three different government departments, which have different agendas and priorities, govern them. The ambulance services are governed by the Department of Health, the Home Office governs the police forces and the fire and rescue services fall under the Department of Communities and Local Government (DCLG), therefore they have developed in different ways, with different goals for the future. On top of this, during government reorganisation during the 1970s, the ambulance service moved from the local government control to become a part of the National Health Service (NHS), and as the role of the ambulance service moved from a blue-light service to a patient transport service to a clinical care providing service, the ethos and the attitudes and behaviours of the ambulance service changed.

This historical progress has resulted in a problem with the three services that no longer naturally understand each other, and there is now a need to re-engage at both a national and local level. In the current state of financial austerity, there are financial advantages in working more closely as there can be areas where we currently duplicate activity, there are also areas where it makes more sense for a different service to take the lead.

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© Springer International Publishing Switzerland 2015  
P. Wankhade, K. Mackway-Jones (eds.), *Ambulance Services*,  
DOI 10.1007/978-3-319-18642-9\_9

The three main blue-light services have separate identities and cultures that are described below:

- The fire and rescue services are very regimented, with a national rank structure and strong command and control. They work as a team. At a major incident, the fire service will have a very robust structured and practiced command and control structure in place as they manage all incidents in the same way; it is just the scale that varies.
- The police forces are mobilised as smaller units of staff that work very well within their team. They tend to have a command structure that manages these smaller teams from a central command facility that is not always at the scene of the incident. Different specialist teams tend to be under different intermediate control structures (e.g. firearms, traffic and forensics) so the middle tier of management of an incident with the police can be quite complicated for other organisations to understand. Working with the police on a single incident could have several scene management teams, often working in silos without oversight of each other's activities.
- The ambulance services over the past 30 years has moved away from the regimented militaristic command structure still present within the fire and police services that is best described as a command and control system as it has become more integrated within the NHS. Within the NHS, teams of staff work under the supervision and guidance of a team leader as opposed to the command of a senior officer. Ambulance staff have the added complication that they largely work as a solo responder or in teams of two clinicians (a paramedic and a supporting clinician working such as an emergency medical technician or emergency care support worker), they are not used to working as part of teams within a command structure. There is also the different nature of work whereby the clinicians have an ultimate responsibility for the care of patients and that can lead to conflict when, in larger incidents, the scene management structure is trying to bring order to the incident and the ambulance staff are focused more on the care of an individual patient rather than the "greater good" of the whole affected population. The NHS is also working in a system of leadership for patient care or incident management where the leadership follows function and not role, so for example, a trauma team consisting of several medical consultants may be led by a more junior member of staff who takes the overall coordination role and leaves the experts to manage their own areas of expertise.

So when trying to develop interoperability between the three blue-light services in the UK, we have different structures, different cultures as well as different organisational boundaries. For example, within the UK, we have 13 ambulance trusts, 45 police forces and 54 fire and rescue services that do not have contiguous boundaries so that, for example, the average ambulance service has to liaise with 5 police and fire services. London, Scotland and Northern Ireland are the only areas which have a single geographical area with the same boundaries for the three emergency services which in theory should provide easier interoperability.

## The Need to Change

Following several major incidents, there has been a recurrent theme in the debriefing and public enquiries that the emergency services need to work together more closely limiting duplication and improving outcomes for the public. There has been a need for better interoperability for years, and when this works well it has usually been because of the people on duty on that day, who may have previous contacts or may be more collaborative in their management styles.

In a report commissioned by the Cabinet Office Civil Contingencies Secretariat by the Emergency Planning College, the common causes of failures identified within 38 public enquiry reports (see Appendix 1 for list) that are relevant to interoperability include:

- Poor working practices and organisational planning
- Inadequate training
- Ineffective communication
- Lack of leadership
- Failure to learn lessons

It was decided that interoperability should not be left to chance and so Theresa May, Home Secretary in 2012, started the Joint Emergency Services Interoperability Programme (JESIP) so that interoperability would become the norm and not be the historical exception. The aim of the programme was to achieve better cooperation and coordination between the three emergency services at the scene of a major incident, however, the side effect would be better for day-to-day working between the three services.

## Joint Emergency Services Interoperability Programme

Initially, JESIP concentrated on the three major blue-light services of police, fire and ambulance. To change the mind-set and ways of working of thousands of on-scene commanders was a big task for the small tri-service team created and hosted by the Home Office. A particular requirement was not just to solve this problem in England but an acceptance that cross-border mutual aid should also include Scotland, Wales, Northern Ireland and the Channel Islands. By August 2014, all of the devolved administrations apart from Scotland were fully signed up to the JESIP process. The initial stages of the programme were to develop a joint doctrine that the three services could agree upon and that was in accordance with the Civil Contingencies Act 2004 guidance set out in emergency response and recovery. JESIP have adopted the definition of interoperability to be “the extent to which organisations can work together coherently as a matter of routine”.

JESIP has been given the task to train commanders, at the operational and tactical levels, however, strategic commanders receive an input through the Multia-

gency Gold Interoperability Course (MAGIC), which is aligned to JESIP and is delivered through the College of Policing. Following completion, they should be able to demonstrate that they have received appropriate interoperability training in their both preparation and response arrangements to ensure the highest possible levels of joint working. Initially, the training was limited to the three blue-light services, but this also extends to cover those agencies that also respond to emergency situations such as HM Coastguards, other police forces (such as military police, British Transport Police) and also to involve some of the voluntary rescue agencies such as the Royal National Lifeboat Institute (RNLI) and search and rescue organisations such as mountain and cave rescue groups.

## **Principles for Joint Working**

Responders from all agencies involved in decision-making at the incident must apply the principles. This process is to be used when they are determining an appropriate course of action to respond to the threats and hazards associated with the incident and come to a shared understanding of how their different agencies' policies, procedures and relevant legislation are applied to produce a coherent response. They should be reflected in standard operating procedures for joint working in the response to and coordination of an emergency. Some of these principles have developed from other areas of successful joint working on a smaller scale such as the emergency service response to a terrorist firearms incident within the UK.

The principals that have been agreed upon by the JESIP team based within the Home Office are now the backbone of the JESIP doctrine:

1. Co-location
2. Communication
3. Coordination
4. Joint understanding of risk
5. Shared situational awareness

The public expects that the emergency services will work together, particularly in the initial response, to preserve life and reduce harm at any emergency. The purpose of clear, simple principles is to help commanders to take action under pressure that will enable the achievement of successful outcomes. This simplicity is of paramount importance in the early stages of an incident or emergency, when clear, robust decisions and actions need to be taken with minimum delay in an often rapidly changing environment. At the scene, the expected sequence of actions would comprise the first meeting of police, fire and ambulance commanders (co-location); a joint assessment of the situation and prevailing risks (communication, joint risk assessment and shared situational awareness); and a coordinated plan for action.

Below are the agreed definitions and expectations for each of the JESIP principles:

## ***Co-location***

Co-location of commanders is essential and allows those commanders to perform the functions of command, control and coordination and face to face, at a single and easily identified location. This is known as the forward command post (FCP), which is a location near to the scene, where the response by the emergency services is managed.

## ***Communication***

Communication is the passage of clear, unambiguous and timely information relevant to an emergency situation. Meaningful and effective communication underpins effective joint working. The sharing of information, free of acronyms, across service boundaries is essential to operational success. This starts through pre-planning and between control rooms prior to deployment of resources.

Communication is the capability to exchange reliable and accurate information, that is, critical information about hazards, risks and threats, as well as understanding each organisation's responsibilities and capabilities. The understanding of any information shared ensures the achievement of shared situational awareness that underpins the best possible outcomes of an incident.

The JESIP programme aims to enable emergency responders to use common symbols and terminology and there is an aim that over time there should be convergence of the systems currently in use.

Following judicial review of previous major incidents, a recurrent theme has been the lack of interoperability and communication systems between the three blue-light emergency services and they now share a common communications platform called Airwave that is based on the terrestrial trunked radio (TETRA) digital radio network. It is now possible for all commanders to communicate using a single, secure digital device, sharing talk groups at incidents and still being accessible to their own organisations.

## ***Coordination***

Coordination involves the integration of the priorities, resources, decision-making and response activities of each emergency service to avoid potential conflicts, prevent duplication of effort, minimise risk and promote successful outcomes. Effective coordination generally requires one service to act in a "lead" capacity, such as chairing coordination meetings and ensuring an effective response. The lead service will usually be the police service, partly because they can manage access and egress to the incident, but also because often their role at the start of the incident is separate to the roles of patient treatment and hazard management (such as fire) and the police

role intensifies once the incident scene is handed over as a crime scene, once all patients are removed and the hazards have been managed. However, in certain circumstances, other services/agencies may be a more appropriate choice, depending upon the nature of the emergency, the phase of the response and the capabilities required.

### ***Joint Understanding of Risk***

Risk arises from threats and/or hazards which will be seen, understood and treated differently by different emergency services. This difference in assessing and managing risks is related to the policies, procedures and risk appetite of the organization that is applied in their standard daily activities, which are often very different than when the staff are placed in the centre of a major incident involving multiple casualties and potential ongoing hazards such as the risk of further explosion or secondary devices hidden at an incident designed to harm responders.

In the context of a joint response, sharing information and understanding about the likelihood and potential impact of risks and the availability and implications of potential control measures will ensure, as far as is reasonably practicable, that the agreed aim and objectives are not compromised. This will include ensuring the safety of responders and mitigating the impact of risks on members of the public, infrastructure and the environment. The JESIP doctrine has developed a shared risk management system which follows later in this chapter called the joint decision model (JDM).

### ***Shared Situational Awareness***

This is a common understanding of the circumstances and immediate consequences of the emergency, together with an appreciation of the available capabilities and emergency services' priorities. Achieving shared situational awareness is essential for effective interoperability in the emergency response and can be achieved by using METHANE as the standard incident description method and the JDM to come to shared decisions. Both of these are explored more fully later in this chapter. Shared situational awareness relates not only to a common understanding between incident commanders, but also between control rooms and all tiers of the command structure.

### **The Joint Decision Model**

A wide range of decision-making models exist, including specific models used by the individual emergency services. Such models have been developed over several years and have existed to support decision-makers working under difficult circum-

stances and a guiding principle is that they should not be over complicated. One of the difficulties commanders facing from different organisations in a joint emergency response is how to bring together the available information, reconcile objectives and then make effective decisions together. Prior to the JESIP programme, the fire and rescue service and the police had well-practiced and developed models to support decision-making, but they were different and caused issues around shared decision-making. This led to the development of the JDM, (See Fig. 9.1 for model) taking the best from the decision models currently in use.

In common with most decision-making models, the JDM is organised around three primary considerations, the descriptions are taken from the JESIP doctrine:

*Situation:* What is happening, what are the impacts, what are the risks, what might happen and what is being done about it? Situational awareness is having an appropriate knowledge of these factors.

*Direction:* What end state is desired, what are the aims and objectives of the emergency response and what overarching values and priorities will inform and guide this?

*Action:* what needs to be decided and what needs to be done to resolve the situation and achieve the desired end state?

The JDM develops these considerations and sets out the various stages of how joint decisions should be reached. One of the guiding principles of the JDM is that decision-makers will use their judgement and experience in deciding what additional questions to ask and considerations to take into account, to reach a jointly agreed decision. They must therefore be free to interpret the JDM for themselves, reasonably and according to the circumstances facing them at any given time. Strict adherence to the stepped process outlined in the JDM should always be secondary to achieving desired outcomes, particularly in time-sensitive situations. A detailed and well-practiced understanding of the JDM will facilitate clear and ordered thinking under stress. The following sections summarise the questions and considerations that commanders should think about in following the model.

The JDM can be used for any type of incident from a rapid onset to a rising tide emergency to enable the establishment of shared situational awareness. The advantage of this is that the decision makers are then used to applying a single decision-making model in their day-to-day operational duties and will therefore find it easy to apply in stressful situation of a major incident.

After many years of major incident review identifying the lack of interoperability and cooperation, the UK, emergency services have been undergoing a major change with the intention of interoperability being the expected norm. The JESIP identified that over 10,000 operational and tactical commanders would require training in the new way of working and this is being achieved by each commander attending a day's training, which is delivered by a multiagency team from each of the blue-light services. This has not only significantly increased the understanding of the issues and pressures being experienced by the different services but also forged some of the relationships that over time had started to diminish due to the different organisational pressures that had removed the capacity for commanders to participate in exercises.



**Fig. 9.1** The joint decision model for achieving interoperability in the UK. (JESIP 2014, Joint Doctrine)

An early success was the adoption of METHANE as the single message to be used by each service for declaration of a major incident and communicating the relevant information to the service-specific control room that would then be understood when shared with other services. This has been a big change for the fire and police services but less so for the ambulance services who have been using METHANE for several years.

The METHANE acronym is a standard message:

- M major incident declared (or standby)
- E exact location of incident
- T type of incident
- H hazards (present or potential)
- A access and egress to the scene
- N number of casualties (broken down to severity if possible)
- E emergency services required, and those already in attendance

The success of the training is being verified by a series of exercises where particularly the way the command team interacts is being observed. The challenge will be maintaining the interoperability and not allowing the emergency service to slip back into their silos as staff changes occur over time in those command posts. The success of the JESIP programme will ultimately be measured by how well it becomes



a standard practice within the emergency services and no longer needs to be a special strand within command training. The JESIP message has been disseminated through all tiers of the blue-light services with a well organised media strategy and professionally developed supporting training products including an e-learning package that enables the whole response team (from paramedics to chief executives, from volunteer special constables to chief constables and from firefighter to chief fire officers) to be exposed to JESIP ways of working.

## **Interoperability Outside the UK**

The issue of interoperability is very dependent on the organisational structure within each country. In the UK, the police, fire and ambulance services are very separate and the armed forces are rarely called upon to support homeland activities except when a specific issue requiring their skills or manpower is identified.

Looking beyond the UK, it is common for ambulance services to be co-located within the fire services. This is largely a small cadre of staff that responds to the significant traumatic incidents and very sick collapsed patients, and the broader ambulance work is often provided by private organisations rather than as an emergency service. What this means is that there is a much smaller pool of ambulance staff (paramedics) available for a major incident, but they will often already be working as part of the fire service response to that major incident. This then largely leaves two organisations at the major incident in terms of police and fire and these can also sometimes be part of other organisations. For example, in France and Italy, part of the police services (Gendarmerie and Carabinieri) is part of the armed forces. To make the issue more complicated in Italy, there are also local civilian police services so the interoperability may be between the different police units rather than the other emergency services. Therefore, we can assume that interoperability could be an issue with each country depending how they organise their emergency services, how they manage the incident and whether they have preplanned and exercised ways to manage an incident.

## **Role and Contribution of the National Ambulance Resilience Unit**

Prior to the establishment of the JESIP programme, there was sporadic good practice of interoperability. An area that helped demonstrate that interoperability could develop as a result of training, exercising and joint working that was not dependant on individuals was the development of Hazardous Area Response Teams (HART) within the ambulance service. Starting in 2006, HART has rolled out to provide 15 teams across England and Wales with similar teams in Scotland (called Special Operational Response Teams; SORT) and similar capability in Northern Ireland but

delivered in a different way where the specialist skills are spread over the response car paramedics rather than concentrated in a specialist unit. The specialist skills include specialist skills and equipment to respond to a Chemical, Biological, Radiological or Nuclear (CBRN) incident, search and rescue skills for a collapsed building, and water rescue skills most likely to be used in flooding incidents. These skills were identified as those required for ambulance staff to work in areas where they had previously not been able to take clinical care due to the extra protective equipment or training required, and it was only by working closely with police and fire colleagues that a training programme developed which allowed patients to be able to benefit from appropriate clinical care and interventions in a more timely manner than previously when they would have needed to be extricated from the incident by fire or police colleagues.

The initial training is coordinated and delivered through the National Ambulance Resilience Unit (NARU) and ongoing skill maintenance and knowledge sharing continues to be an important role in maintaining the UK-wide response to major incidents. A particular example of how NARU were able to develop an interoperable response to a new type of threat was seen following the attack in Mumbai involving several gunmen. It was seen that multiple casualties could be injured in a short time period and that the ambulance response at that stage would struggle to cope with the number of patients. After close working with representatives from the Association of Chief Police Officers (ACPO) and Chief Fire Officers Association (CFOA), a joint approach to risk assessment and clinical treatment proven by joint exercising and training was developed and was seen as the model for what success should look like for the JESIP programme.

## Conclusions

The UK has recently tried to bring about significant cultural change within its emergency services with initially promising results. Time will tell if this is maintained, but the benefits in terms of incident management and survivor outcomes are potentially huge. Even at its most basic, the joint organisational learning will be a measure of the legacy of JESIP.

## Appendix 1

Year of event	Event
1986	Crowd Safety at Football Grounds
1987	King's Cross Underground Fire
1987	Herald of Free Enterprise
1987	Hungerford Shooting
1988	Piper Alpha Explosion

Year of event	Event
1988	Clapham Rail Crash
1988	Lockerbie Bombing
1989	Hillsborough Stadium Disaster
1989	Kegworth Air Crash
1989/2000	Marchioness–Bowbelle Sinking
1994	Texaco Refinery Explosion
1996	Dunblane Shooting
1996	BSE Outbreak Inquiry
1997	Southall Rail Crash
1997	Stephen Lawrence Murder Inquiry
1999	Ladbroke Grove Rail Inquiry
2000	UK Fuel Disputes
2000	Harold Shipman and ‘the 3 Inquiries’
2001/2007	Foot & Mouth Disease
2001	Victoria Climbié Murder
2003	Failures in NHS Report
2003	Bichard Inquiry (Soham Murders)
2004	ICL Factory Explosion
2004	Boscastle Floods
2005	Buncefield Oil Depot Explosion
2005	London Terrorist Attacks
2005	Stockwell Shooting
2005	Carlisle Floods
2007	Hull Floods
2007	Pitt Review (UK Floods)
2009	Influenza Pandemic
2010	Derrick Bird Shootings

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