

**CHEMICAL  
BIOLOGICAL  
RADIOLOGICAL  
NUCLEAR  
INCIDENTS  
(HAZMAT)**



**A GUIDE TO A  
CO-ORDINATED RESPONSE  
FOR ESSEX**

**A GUIDE TO A CO-ORDINATED RESPONSE TO  
HAZARDOUS MATERIALS INCIDENTS  
IN ESSEX**

The report of a multi service working party published by the Essex Emergency Service Co-ordinating Group as a source of information to aid an integrated response between agencies without affecting the policy of any of the responsible services.

## **FOREWORD**

There are effective generic plans for coping with any emergency in Essex. However, hazardous materials pose very specific constraints on normal responses and require early and effective action, sometimes of a very specific nature if the emergency is not to become a disaster.

This guide provides for an effective coordinated response to Hazardous Material Incidents. It brings together, in a single easy reference document, the appropriate elements of the plans of each of the responding agencies. It should provide, for those who only rarely find themselves faced with this scenario, a way of ensuring the right action is taken early enough to be effective, and prevent unnecessary escalation.

This guide does not replace, or take precedence over, its source documents, but simply provides a quick, accurate reference to the relevant information.

## **ACKNOWLEDGEMENTS**

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## How to use this manual

The manual has been divided into the following two sections:

- Section 1.** Provides an overview of the specific problems associated with the management of HAZMAT incidents and gives details of the roles and responsibilities of all the agencies involved.
  
- Section 2.** Provides a quick reference guide with operational diagrams of actions to be considered or taken.

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## SECTION 1

### OVERVIEW AND MANAGEMENT

#### OVERVIEW

Hazardous materials are an integral part of modern industrialised society. As the result of strict guidelines and laws concerning the storage and movement of these materials, the incidences involving serious chemical releases are limited in number. However, this County has to have the capability of effectively dealing with the accidental, or even deliberate, release of a wide range of hazardous substances. The guidance outlined in this manual shows how support agencies may, by employing their own plans and procedures, combine with the Emergency Services to manage a wide range of hazardous situations and their aftermath.

The response to an incident whether accidental or intentional, will not usually vary. The requirements for resolution and remediation remain the same regardless.

#### DEFINITIONS

**Hazardous Materials (HAZMAT):** - chemical, biological, radiological and nuclear (CBRN) substances hazardous to health or the environment.

**Support Agencies:** - are those agencies deemed able to provide the expertise, facilities and support necessary to enable the Emergency Services to deal safely and effectively with a HAZMAT incident.

These include: -

- Local Authorities. (County Council, Unitary Authority, District Council)
- Environment Agency
- Hospital Services
- Health Authority
- NHS Executive Regional Office
- Maritime and Coastguard Agency
- Railtrack
- Airport Authorities

#### Categories of a HAZMAT Incident.

**Minor** A small scale incident that is local in character with no risk of escalation which can be dealt with by normal resources under standard operating procedures.

**Serious** An actual or potentially serious incident that falls short of a major incident, but which requires significant resources by one or more of the



emergency services and the involvement of a number of other agencies to resolve.

**Major** A major incident is any emergency that requires the implementation of special arrangements by one or more of the emergency services, the NHS or the local authority for:

- the initial treatment, rescue and transport of a large number of casualties;
- the involvement either directly or indirectly of large numbers of people;
- the handling of a large number of enquiries likely to be generated both from the public and the news media usually to the police;
- the need for the large scale combined resources of two or more of the emergency services;
- the mobilisation and organisation of the emergency services and supporting organisations, e.g. local authority to cater for the threat of death, serious injury or homelessness to a large number of people.

For specific NHS purposes, a major incident may be defined as:

"Any occurrence which presents a serious threat to the health of the community, disruption to the service, or causes (or is likely to cause) such numbers or types of casualties as to require special arrangements to be implemented by hospitals, ambulance services or health authorities.

Unless circumstances make it immediately apparent, the defining category will normally be assigned by the Fire Service following assessment. This may be revised should there be any escalation or reduction in the threat to life and/or the environment.

**Casualties.** A person who is contaminated should be treated as a "casualty" whether injured or not and this may include emergency services personnel.

## AIM

The aim of this manual is to provide a guide for a co-ordinated response to the management and containment of a HAZMAT incident in order to deal with and minimise:

Injury to the responding services.

Injury to casualties and local population.

Damage to the environment.

## THE MANUAL

This manual:

Covers the generic management of HAZMAT incidents.

Should be considered as a supplement to the incident plan of each of the Emergency Services where HAZMAT is involved.

## AUDIT

Advances in handling infrequent incidents of this type are dependent on sharing information. A key component of this process will be a debrief and report to identify problems and for the solution to be reflected locally in plans and nationally to advance the subject overall.

Updating this manual will be a part of the audit process referred to above and should be undertaken on an annual basis by a Sub-Group of EPLAG. (Emergency Planning Liaison and Action Group).

## COMMUNICATION AND INFORMATION NETWORK

The efficient transfer of accurate technical and operational information between responding organisations during the course of a Hazmat incident is vital.

Lack of information, misinformation, incorrect information or possibly simple conjecture resulting from frustration will lead to compromised and potentially inappropriate decisions regarding response action.

Information transfer between the Emergency Services is a priority and is performed through well-established procedures. Other responding organisations also require information pertinent to the incident to facilitate their response. It is essential that all organisations have access to the information they require.

An essential feature of the communication network is the need for one organisation to retain responsibility for information regarding the identity and the nature of the **Hazmat** involved in the incident. For Essex, this will be the County Fire and Rescue Service. Both Essex Police and Essex Ambulance Service will seek information on the **Hazmat** from the Fire and Rescue Service, via Control Room operations, and will ensure that only information provided by the Fire Control is promulgated. Additionally, both Police and Ambulance will ensure that Fire Control is informed of any "new information" regarding the Hazmat.

To ensure consistency in the supply of information, other organisations involved in the response should obtain information regarding the Hazmat from the respective Emergency Service, as illustrated diagrammatically on page 39.

Key points are:

- Fire and Rescue Service will operate as central source of information regarding the Hazmat. Scientific advisors will assist in this process.
- Police and Ambulance will receive and exchange information on the Hazmat with the Fire and Rescue Service.
- Local Authority will be alerted to the incident by the Police and will receive information regarding the incident from the Police.
- Health Organisations (in particular, Hospital A&E Departments/Consultants and responsible Consultant in Communicable Disease Control - who may in turn contact other sources of expertise to guide their response) will receive information on the chemical involved via the Ambulance Service.
- Environment Agency will obtain information on the incident direct from Fire Control, in line with current procedures.

It is emphasised that:

The above communications network is established only for information exchange on the CHEMICAL(S) involved in the incident. It is not intended to affect existing communication networks established to deal with other operational matters relevant to incident response.

The Fire and Rescue Service retain primacy regarding information relating to the nature of the chemical(s) involved throughout the incident.

## TYPES OF HAZMAT

### INTRODUCTION

There are many thousands of flammable, corrosive, toxic, explosive and radioactive materials in use and transported within the County every day that are potentially hazardous to health should any spillage or leakage occur. Containers are normally, but not always, marked or labelled to identify the contents and associated dangers. Those involved in the manufacture, storage and transportation of such substances should have some understanding of the hazards, and how to deal with them in an emergency. However this is not always the case, and any casualties involved at an incident may be those holding the relevant knowledge.

The possibility of a terrorist attack using the deliberate release of a hazardous material to produce mass casualties must also be considered.

### TYPES OF INCIDENT

#### Unintentional releases

Although stringent safety precautions are in place, contamination may result from accidental releases from:

- Industrial and commercial sites
- Laboratories
- Universities, colleges or schools
- Hospitals
- Materials in transit
- Nuclear sites (at home or abroad)
- Incidents at sea
- Domestic spillages

#### Deliberate releases

Deliberate release incidents will generally fall into one of two categories:

- Intelligence led – device not yet actuated: warning of a terrorist attack has been given, although this may or may not include details of the type of the CBRN material, allowing the opportunity to pre-deploy assets against the device.
- No notice – device actuated: an incident (or suspected incident) has occurred without any prior warning.

Indications that an incident has taken place might be the presence of suspect packages, damage to the environment, or people or animals showing distress.

In the case of unheralded biological, radioactive and some chemical contamination, members of the public are unlikely to show any symptoms for hours or possibly days, depending on the strength or efficacy of the agents.

Contamination may result from:

- ❑ Deliberate release of biological material
- ❑ Deliberate release of chemicals
- ❑ Improvised Radiological Devices ('Dirty Bombs')
- ❑ Deliberate release of radioactivity
- ❑ Deliberate use of nuclear or improvised nuclear devices
- ❑ Other terrorist acts

## CHEMICAL HAZARDS

By far the most likely type of hazardous material incident to occur is an incident involving chemical spillage, leakage or involvement in fire.

Chemicals can cause injury in a number of ways including:

- ❑ Inhalation.
- ❑ Contact with, or absorption through the skin.
- ❑ Ingestion.

It is therefore of paramount importance that any emergency personnel exposed to the effects of a chemical release are appropriately protected against the specific chemicals that are involved.

## BIOLOGICAL HAZARDS

This term is often used to refer to potentially infective agents such as bacteria, viruses, fungi, and protozoa. However, many of these agents are found normally within the environment and humans encounter such agents in their everyday activities.

The emergency services are most likely to encounter an identifiable biological hazard when faced with a sewage spill/leakage or sharps/clinical waste contamination incident. Medical and laboratory materials are governed by rigorous guidelines which require the careful packaging of materials to minimise the likelihood of breakage, spillage or leaking of the material involved, as well as the careful labelling of the package identifying the originating organisation/laboratory.

The major risk from any biological hazard is that of infection by the agents involved by inoculation, ingestion, wound contamination and, very rarely inhalation. This can be prevented by taking common sense precautions.

## RADIOLOGICAL & NUCLEAR HAZARDS

As a result of legislation governing the use and transport of radiological substances, incidents involving radiological release are extremely rare.

Radiation can affect the human body in the following ways:

**ALPHA Particles.** The danger from alpha radiation is if the substance is either ingested, inhaled or enters the body via open wounds, there it can remain for some considerable period continuing to irradiate the surrounding tissue.

**BETA Particles.** Unlike alpha particles, beta particles will penetrate the skin and can cause significant burns. However, the main danger from beta radiation is the possibility of ingestion or inhalation resulting in the irradiation of internal tissue.

**GAMMA Radiation.** This form of radiation is emitted like a radio wave and will pass through the body, possibly affecting the cell structure in doing so. The effects of gamma radiation can be considerably reduced by limiting the time that the person is exposed by increasing the distance between the person and the source of radiation, and by using substantially dense materials as a shield between the source and the body.

The possibility of ingesting or inhalation of radioactive substances can be considerably reduced if all personnel within the contaminated area are suitably protected by protective clothing and respiratory protection such as breathing apparatus or appropriate filtration masks, followed by careful decontamination when disrobing.

## HAZARDOUS SUBSTANCES WASHED UP ON THE U.K. SHORELINE

**Chemicals:** To assist with the response to chemical spills the Maritime and Coastguard Agency (MCA) has established a Chemical Hazards Advisory Group (CHAG) to supplement the advice of its own staff on the appropriate response to a spillage of chemicals from a ship at sea. This group includes representatives of the Fisheries Departments, the Health & Safety Executive, Health Authorities, Chemical Associations and Shipping Companies.

**Explosive/Ordnance and Radioactive Substances:** Essex Police in conjunction with the NRPB (NAIR Scheme) and the Ministry of Defence (MOD) explosive experts, as applicable, will arrange for the identification of substances which are considered to be radioactive or explosive. MOD explosive experts will deal with explosives on

hazmat  
july 2003

beaches and elsewhere. The disposal of armaments falls within the remit of the Police and the Explosive Ordnance Disposal (EOD) of the Armed Services concerned.

The disposal of radioactive materials involved in NAIR incidents will be carried out in accordance with the advice given by NAIR participants and the Environment Agency.

## **SPECIALIST ADVICE AND ASSISTANCE**

Specialist advice and assistance are available from sources such as: -

### **CHEMICAL:**

**NCEC** The National Chemical Emergency Centre, Harwell - 24-hour cover in providing advice on chemical incidents. Maintains a chemical information database, including details of products carried by specific companies. NCEC will invoke the CHEMSAFE scheme on behalf of emergency services.

**CHEMSAFE** Chemical Industry Scheme for Assistance in Freight Emergencies. Will provide technical advice and practical assistance in connection with incidents involving chemicals in transit. Information/activation via specialist telephone number on placards (e.g. Hazchem plate) or other documentation e.g. Tremcards.

**CHEMET** Meteorological Office at Bracknell will supply weather-based information on the likely dissemination of an airborne pollutant.

**CIRS** Chemical Incident Response Service. Accessed via Consultant in Communicable Diseases (Health Protection Agency).

**CHLOROID** Product specific emergency response scheme, operated by Chemical Industries Association.

**HSE** Health and Safety Executive -Chemical Hazards Incident Division will provide guidance in connection with chemical incidents.

**MCA** Maritime and Coastguard Agency through the Chemicals Hazards Advisory Group (CHAG), will provide advice on the appropriate response to a chemical spill at sea

### **BIOLOGICAL:**

**Sewage spillage's** - advice should be sought from a company experienced in the management of sewage effluent i.e. one of the local water companies or the company transporting any sewage waste, and the Environment Agency.

**Sharps/clinical waste incidents** - identify source (hospital name should be on containers or contractor). Contact the relevant hospital/contractor to arrange for the waste contractor to clear the materials.



**Other biohazards** - the originators label should be obtained and specific advice sought from the originator using any reference data provided on the label. The majority of District General Hospitals have a 24-hour on-call microbiology service providing access to a Medical Laboratory Scientific Officer and a Consultant Microbiologist.

**Chelmsford Public Health Laboratory** - if the biohazard is known but no other source of advice can be identified contact Chelmsford Public Health Laboratory and ask for the Duty Medical Laboratory Scientific Officer or the Consultant Microbiologist.

**On call Consultant in Communicable Disease Control (CCDC) - Public Health** may be contacted through the Essex Ambulance Service. Callers should ask for the on-call Public Health Doctor.

## **RADIOLOGICAL & NUCLEAR:**

**RADSAFE** A scheme formulated by the UK Nuclear Industry, to provide advice and practical on-site assistance with incidents involving the transportation of radioactive materials. Vehicles carrying radioactive material will display the RADSAFE sign which will show the telephone contact number to activate the scheme. Arrangements are co-ordinated by the United Kingdom Atomic Energy Authority Constabulary.

**NAIR** A scheme to provide advice and practical assistance in circumstances where no other detailed pre-planning (such as RADSAFE) exists or to act as a 'long stop' to such plans. Contact via Essex Police in first instance.

**NRPB** National Radiological Protection Board, Chilton Oxfordshire. Co-ordinates arrangements under the NAIR scheme and publishes the handbook. Does not offer 24-hour advice and assistance, as this is available under NAIR arrangements, but will do so when alerted.

**REPPPIR** The Radiation (Emergency Preparedness and Public Information) Regulations 2001. Sets out basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation. REPPPIR apply to fixed sites, rail transport and the transfer of radioactive substances across public places (other than by standard transport modes). The Department for Transport, Local Government and the Regions (DTLR) is responsible for implementing the Directive for road, air and sea/inland waterway transport as necessary. For Essex the Head of Community Safety and Emergency Plans will undertake this function.

## ENVIRONMENTAL

The Environment Agency maintains a national telephone number for reporting environmental incidents: 0800 807060.

Calls are routed to the Agencies nearest 24 hour Regional Control Centre, logged and referred to local designated Standby Duty Officers for assessment and action. Emergency Services calls will be acknowledged and informed whether the incident will be attended and the estimated time of arrival as appropriate.

Fire and Rescue Services have guidance as to the nature of incidents EA wishes to be informed of; the Agency will also accept Service requests for guidance or attendance at other times and occasions.

Investigating Officers report to the Incident Commander of incident scenes and operate under their control.

## **GENERAL CODE OF PRACTICE FOR STAFF AT INCIDENTS INVOLVING HAZARDOUS SUBSTANCES**

**"Don't touch it - Keep others away - Try to identify it.**

**Inform control - Get expert advice"**

- ❑ Obtain details of safe approach route if possible and applicable.
- ❑ Position vehicle upwind and uphill and at a safe distance where possible and applicable remembering built up areas may influence wind flow patterns, and materials may spread through drains and watercourses.
- ❑ Personnel with skin conditions or wounds should not be involved.
- ❑ Avoid contamination from spillage or release.
- ❑ Use protective clothing: - overalls, gloves, boots, respiratory and eye protection, etc.
- ❑ Consider inhalation risk - remember limitation of masks.
- ❑ NO smoking, drinking or eating at the scene or until 'clean'.

### **Situation Report - Sitrep**

- ❑ Inform Control of scene location, other services on-site, hazard information, type of vehicle or installation involved, number of persons involved, etc.
- ❑ Confirm any fire, spillage, persons trapped, injured or affected.

### **Share**

- ❑ Share information - liaise with other officers and organisations involved as appropriate.
- ❑ Look for hazard warning signs/symbols (egg. HAZCHEM label, SIN (substance identification number) Tremcard advice sheet, KEMLER code, data sheets or ICSC (international chemical safety cards)).

### **Save Life**

- ❑ Warn bystanders and public and consider evacuation.
- ❑ Treat the rescued. Decontaminate.

- Beware static, radio, hand lamps, mobile phones, starting up vehicles, etc - (dusts and vapours can explode or ignite).
- If explosion occurs remember blast injuries - people may be deaf and even temporarily blind.

## Decontamination

- Decontamination is not an automatic or inevitable response to HAZMAT incidents. Whether or not to initiate decontamination procedures will depend on the assessment of the nature of the incident by first responders.
- Once the decision to decontaminate has been made, the principle is that all casualties, whether injured or not, and suspected of being contaminated will receive decontamination at the scene. Although this will reduce the number of people self-referring to medical centres people will self-present for decontamination off-site. Medical centres and hospitals should prepare for this.
- If decontamination procedures are initiated, the first objective is to remove the contaminated person from the area of greatest contamination. Usually this will be to the open air and upwind of the incident. If the HAZMAT release is still in progress and airborne, a risk assessment should be carried out to determine if removing people to a closed area may be more appropriate.
- Particular consideration should be given to minimise the exposure of pregnant casualties and carers when the incident involves radiological or nuclear material.
- It should be remembered that potential witnesses or suspects might be amongst those being decontaminated.
- The careful removal of contaminated clothing will reduce the level of contamination and should, therefore, be a priority. Wherever possible the removal of clothing should be from head to foot, to limit the risk of inhalation of any contaminant. This is an aspect best dealt with following the appropriate training, which can be cascaded down through the organisation.
- Special care must be taken to ensure there is no spread of contamination from any clothing to exposed skin.
- People who are capable of removing their own clothing and decontaminating themselves should do so, under supervision.
- Special care must be taken to reassure and support people who have personal articles such as spectacles or hearing aids removed from them.

- ❑ All personal clothing and property, whether contaminated or not, must be recorded and linked to an individual. It may contain valuable intelligence or evidence and the continuity of its recording is vital.
- ❑ Where there are a large number of people requiring decontamination, the Fire Service and Ambulance Service are equipped with purpose-built mobile decontamination shower units.

### **Sterility**

- ❑ Consider Biohazards: bacteria, fungi, toxins and viruses.
- ❑ Do not make any contact with or disturb any animals, packages or container involved.
- ❑ Waterproof clothing must be washed down with appropriate disinfectant before removing.

### **Deceased**

- ❑ Remember the principle of not destroying evidence by the unnecessary movement of bodies. Ensure the protection of staff involved in moving or receiving the deceased. See the Police section for details.

## MANAGEMENT AND CONTROL

In the case of a large or major incident the command structure would comprise three levels:

### **Strategic** (Remote from the scene)

The purpose of the Strategic, overall command is to take overall responsibility for incident management and establish a framework of policy:

- within which the Tactical Commander(s) will work
- to give support to the Tactical Commander(s) by the provision of resources
- to give consideration to the prioritisation of demands from the Tactical Commander(s)
- to determine plans for the return to normality once the incident is brought under control.

### **Tactical** (At or nearby the incident site)

A tactical level of command exists to determine priority in allocating resources, to plan and co-ordinate when a task will be undertaken, and to obtain other resources as required.

Most, but not all, of the tactical functions will be discharged at the scene of the incident. Some agencies, particularly local authorities, will prefer to operate from their administrative offices and will normally send a representative to the scene to liaise with the incident officer(s). Planning must also take into account that there may be a number of individual scenes each requiring a Tactical (Silver) Commander, or in fact no actual scene, for example, where the incident is overseas.

When more than one agency is working at the tactical level there must be consultation between the various agency incident officers. The tactical (Silver) commanders should not become involved with the activities at the scene being discharged by operational (Bronze) commanders, but concentrate on the overall general management. In order to effect co-ordination, an inter-agency meeting should be held at regular intervals attended by each tactical commander. Establishment of inter service communication links will support the running of the incident at the scene. The Police will maintain a written record of meetings.

### **Operational** (At the incident site)

On arrival at the scene of an event the emergency services will take appropriate immediate measures and assess the extent of the problem. They will concentrate on their specific tasks within their areas of responsibility, for example, for the police, cordons, security, traffic management, evacuation, etc. Should it be necessary consideration will be given to assigning control for a specific task or area to a

designated officer of the emergency services or particular agency subsequently called to the scene. The command of the resources belonging to any agency and applied within a geographical area, or used for a specific purpose, will be retained by that agency. Each agency must liaise fully and continually with others employed within the same area to ensure a sufficient and combined effort. If appropriate, the police will normally act as the co-ordinator of this response at the scene.

### **Integrated Emergency Management Framework**

<b>Level</b>	<b>Police</b>	<b>Fire</b>	<b>Ambulance</b>	<b>Local Authority</b>
Strategic (Gold)	Gold	Senior Fire Liaison Officer	Chief Executive	Chief Executive
Tactical (Silver)	Silver	Fire Incident Commander	Ambulance Incident Officer	Emergency Planning Officer
Operational (Bronze)	Bronze	Sector Commander	Ambulance Officer	Emergency Planning Officer

## **ROLES and RESPONSIBILITIES.**

### **THE POLICE**

The roles responsibilities and actions outlined below provide the basic framework for the effective management of the emergency response to an incident involving hazardous materials

#### **Management Control & Communications**

- To facilitate, co-ordinate and manage the overall response of the Emergency Services and support agencies in dealing with an incident involving hazardous materials and any subsequent pollution and contamination.

**N.B. Ministry of Defence explosive experts will deal with explosives on beaches and elsewhere.**

- To supply information to authorised enquirers relating to and affecting the incident 'controlled area'.
- To liaise with the Head of Community Safety and Emergency Plans, Unitary Authorities, District Councils, other organisations and specialists.
- To assist Local Authorities with the restoration of normality as soon as possible.
- To make provision for the Media and orchestrate a co-ordinated approach.

#### **Site Control**

- To secure, protect and preserve the scene, and to control access through the use of cordons:
  - Inner cordon - in conjunction with the ECFRS to provide immediate security of the rescue zone and potential crime scene.
  - Outer cordon - to create a "controlled area" surrounding the rescue zone in which the infrastructure of essential services will be located and can operate.
- To establish Rendezvous Point(s), parking and marshalling areas, and essential Emergency Service Routes.
- To divert and direct general traffic and unauthorised persons away from the scene.



### Casualty Management

- ❑ To save life in conjunction with the other Emergency Services.
- ❑ To arrange with the Ambulance Service a Casualty Clearing Station and Ambulance Loading Point.
- ❑ To collate and disseminate casualty information, if necessary by way of a Casualty Information Bureau and Police Hospital Documentation Teams.
- ❑ To make arrangements for the appropriate collection, storage and disposal of property involved.

### Protection of General Public

- ❑ To mitigate adverse effects on the public by orchestrating the issue of advice and warnings following consultation with the Fire Service; and where necessary, implementing evacuation to Local Authority Rest Centres and safeguarding the vacated properties.
- ❑ To arrange in association with Local Authorities, Reception Centres for uninjured survivors or evacuees and their friends and relatives.

### Investigation of Incident

- ❑ To investigate the incident, obtaining and securing evidence in conjunction with other investigative bodies where applicable.
- ❑ To liaise with H.M. Coroner, to cause bodies to be labelled and transferred to a mortuary; to assist with post mortem examinations, and conduct such enquiries as may be necessary for the subsequent inquests.

### Removal of the Deceased / Preservation of Scene

- ❑ To take all possible steps to avoid disturbance of the scene of an incident in order to preserve evidence which may assist in any subsequent investigation.

**Note:** Normally bodies should not be moved until appropriate arrangements have been made and the prior authority of the Coroner obtained. However, the need to safeguard life must take precedence over all other considerations.

In order to maintain continuity of evidence, bodies should be labelled and their position recorded prior to removal from the scene.

The general principle is that a dead body should not be decontaminated prior to removal. However, the nature of the hazardous material involved

will determine whether removal is necessary in order to prevent the destruction of the remains or associated evidence. Expert advice should therefore be sought, and all subsequent handling of the body undertaken by personnel wearing protective clothing and respiratory protection as appropriate. Bodies should be placed in suitable protective containers, clearly labelled to indicate the nature of the hazard involved.

- To consult with the coroner in identifying the most appropriate venue for a post mortem examination to be conducted, avoiding contamination of hospital mortuary facilities. The temporary mortuary facility may be used for this purpose
- To ensure that casualties removed for decontamination, who subsequently die as a result of their injuries and/or exposure are removed from the Casualty Clearing Station, to the Body Holding Area and then handled in accordance with the foregoing principles.

## THE FIRE AND RESCUE SERVICE

The roles, responsibilities and actions outlined below provide the basic framework for the effective control and rescue of casualties and the reduction of the impact upon the environment of a Chemical, Biological, Radiological or Nuclear release.

### Site Management and Control

- To identify, where possible any CBRN release and the protective measures necessary to enable personnel to deal safely with an incident.
- The Fire Service has the responsibility for Public Mass Decontamination and would undertake this role with the Ambulance Service. This system would be activated where more than 10 persons require decontamination.
- To liaise with the Police regarding the provision of a further cordon around the immediate incident to enable the Fire Service to exercise control within that area.
- To safeguard all personnel directly involved in the rescue work or working within the inner cordon.
- To stand by, where required, during non-emergency recovery phase to ensure continued safety at and around the site.
- To assist the Police with the recovery of bodies from the contaminated area.
- To prevent where possible, further escalation of the chemical incident by the provision of basic containment equipment.

### **Casualty Management**

- To provide suitably trained, protected and equipped personnel, to carry out the rescue of casualties from hazardous situations.
- To liaise with the Ambulance Service regarding the nature of the Hazmat release, screening decontaminated casualties for radiation and assisting the Ambulance Service with loading points and priority of evacuation.

### **Protection of the Public and the Environment**

- To gather information and carry out a dynamic risk assessment enabling advice to be given to the Police on the precautions to be taken for the safety of the public
- To liaise with the agencies responsible for clear-up operations and environmental protection in order to assist in mitigating the effects of a HAZMAT incident.
- To participate, as appropriate, in investigations and the preparation of reports and evidence, for enquiries.

### **Documentation**

- To provide documentation to record details of all personnel exposed at HAZMAT incidents.

### **Specialist Advice.**

- To be responsible for:
  - Obtaining advice on "hazardous materials" via Fire Service Control technical library and computerised data base, and, specialist Scientific Advisers available on a 24 hr basis.
  - Obtaining CHEMNET information.
  - Obtaining advice on Biohazards via Ambulance Service (via CCDC,s)

## THE AMBULANCE SERVICE

Definition – A chemical incident is defined as ‘an unforeseen event leading to exposure of two or more individuals to any non-radioactive substances, resulting in illness or potentially toxic threat to health.’

The responsibilities and actions outlined below provide the basic framework for the management treatment and transportation of casualties to medical centres, in the event of an incident involving the release of hazardous materials.

### Command Control and Communication

- ❑ To provide a focal point at the incident, through an Ambulance Control Point, for all NHS/Medical resources.
- ❑ To provide communications facilities for NHS resources at the scene.
- ❑ To liaise with and seek advice from Fire Service, Police, Hospitals, CCDC's, Chemical experts, etc.
- ❑ To collate and relay casualty information to the relevant services involved with the incident.

### Ambulance/A&E Hospital Interface

- ❑ To determine the “Receiving Hospitals” for receipt of casualties.
- ❑ To ensure Hospitals receive scene information on type, severity and number of casualties involved, and nature of hazard.
- ❑ To mobilise a Medical Incident Officer (MIO) and where necessary Hospital based teams to the scene.
- ❑ To relay information to Hospitals regarding any decontamination procedures carried out on scene.

### Casualty Management

- ❑ To establish an effective on scene working environment including: decontamination, triages, treatment and transportation to Hospital.
- ❑ To determine, either directly or in conjunction with medical personnel, the priorities for the evacuation of casualties.
- ❑ To provide to an A&E Hospital an Ambulance Liaison Officer (ALO) and appropriate support.

- To ensure that accurate records and health monitoring procedures are complete and available for all ambulance and emergency service personnel involved within the incident.

## THE LOCAL AUTHORITY.

The responsibilities and actions outlined below provide the basic framework for the mobilisation of local authority departments and voluntary agencies, in support of Emergency Services attending incidents involving the release of hazardous materials.

### Management and Control

- To disseminate information to the relevant support agencies.
- To facilitate the provision of: -
  - Manpower and material resources.
  - Rest centres.
  - Transport to rest centres.
  - Engineering and technical advice on roads and buildings.
  - Services of Voluntary Agencies.
  - Environmental and Public Health advice, including pollution control.
  - Measures necessary to ensure the restoration of normality.

### Responding to Reports of Pollution

- To respond to oil and chemical pollution incidents along the Essex Coastline.
- To provide environmental and public health advice (in liaison with Essex Strategic Health Authority).
- To provide agreed common form public information/public warning notices along the area of coastline affected.
- To act as Waste Collection Authority responsible for the identification and collection of hazardous substances (including hazardous containers) washed ashore along its area of coastline. In practice this may mean calling for information from Essex Fire and Rescue Service and arranging for specialist contractors to remove containers and substances.

**N.B. A County Council acting as Waste Disposal Authority is responsible for arranging storage and final disposal of hazardous materials in liaison with the Environment Agency. (*Environmental Protection Act 1990 part II - section 30*).**

A Unitary Authority will carry out the functions of both a Waste Collection Authority and a Waste Disposal Authority.

## THE ENVIRONMENT AGENCY.

The responsibilities and actions outlined below provide the basic framework for the effective environmental protection of water, land and air.

### Management and Control

- ❑ To protect and regulate controlled waters (watercourse, rivers estuaries and coastal waters and groundwater) and manage water resources, flood defence, freshwater fisheries and environmental conservation and promote navigation and recreation where appropriate.
- ❑ To regulate effluent discharges, major industrial environmental premises, processes and emissions and the management, treatment and disposal of waste.
- ❑ To respond to reports of environmental incidents and emergencies from Emergency Services, members of the public, external bodies and its own staff.

### Responding to Environmental Incidents and Emergencies.

The EA will:

- ❑ assist with the risk assessment, helping to identify where material might disperse to via environmental pathways, who might be at risk and, where practicable, give advice about the location of decontamination facilities;
- ❑ in case where flushed materials and contaminated waters cannot reasonably be contained and stored, identify the watercourses and drainage systems at risk, warn, water abstractors and relevant local authorities, and liaise with Water Service Companies on impacts on sewerage, sewage treatment and waste disposal;
- ❑ help the emergency services and other parties involved to identify storage, transport and disposal facilities and contractors for the management and appropriate containment, treatment, transport and disposal of waste, including decontamination products, and, in National Emergency Incidents, facilitate authorisation of special emergency procedural arrangements for waste transfer,

treatment and storage where relevant, in accordance with agreed statutory requirements and provisions;

- ❑ make staff available at command centres or decontamination sites to liaise and assist in the continuing hazard and risk assessments and appropriate environmental and health protection strategies;
- ❑ where appropriate warranted officers will collect evidence, investigate breaches of environmental regulation, prepare cases (particularly in major incidents) and report these for consideration for prosecution;
- ❑ in incidents where water pollution has or is likely to occur the Agency has statutory powers and will seek to recover all costs incurred in investigating, monitoring, mitigating and remediating pollution and its environmental effects;
- ❑ support the emergency services, local and water authorities and the Food Standards Agency in dealing with all environmental issues; including notifying water abstractors and enabling local authorities to issue public health warnings.

### **Decontamination**

- ❑ The Agency usually seeks containment of contamination and decontamination run-off where possible. However it is recognised this will not always be practical as normal risk assessed Fire Service operations and life saving decontamination procedures must take precedence over other considerations at the scene of the incident.

## **HM COASTGUARD**

The responsibilities and actions outlined below provide the basic framework for the effective protection of the Essex coastline in relation to hazardous substances washed ashore.

### **Management and Control**

- ❑ To initiate and co-ordinate civil maritime search and rescue (SAR) within the UK Search and Rescue Region.
- ❑ To respond to reports of incidents and emergencies along the Essex coastline.

### **Responding to reports of hazardous substances/containers**

In view of the hazards involved in dealing with chemical or other dangerous substances washed ashore on a casual basis or resulting from a major incident, HM Coastguard's responsibility is confined to the following:

- ❑ To receive reports on confirmed hazardous substances washed up on the shoreline and inform the MCA and the appropriate local or port authority

- To ensure public safety (if the hazard has been discovered by HM Coastguard) by keeping the public away from the vicinity until the area can be safeguarded by the appropriate local or port authority

### **MARITIME AND COASTGUARD AGENCY ( MCA)**

The roles and responsibilities outlined below provide the basic framework for a response to the threat of chemical pollution at sea and on the UK shoreline.

#### **Management and Control**

- To act as co-ordinator to all response organisations in incidents when hazardous containers are found to be coming ashore along greater stretches of coastline than that of individual local authorities.
- If necessary activate the appropriate Standing Environment Group for the geographical area of coastline affected.

#### **Responding to the reports of hazardous substances/containers**

- To receive information on confirmed hazardous substances washed up on the shoreline
- To disseminate information as appropriate to local authorities which the MCA consider to be under threat from pollution contamination by hazardous materials.
- To advise the appropriate response in liaison with the Standing Environment Group for the geographical area of coastline affected.
- To mitigate the effects of shoreline pollution by deploying the MCA chemical strike team to respond to a spillage of chemicals at sea.

N.B. To counter the threat of chemical pollution the MCA retain, under contract a Chemical Strike Team. This team is drawn from a pool of mariners currently serving on chemical or light product tankers and is deployed in a number of roles; to inspect a damaged vessel, to advise the appropriate response and ultimately, to respond. MCA's salvage and counter chemical pollution equipment is kept at Milford Haven and includes chemical protection stockpile suites, breathing apparatus, chemical resistant pumps, hoses, booms and inert gas generators.

***(The flow chart on page 42 illustrates the actions to be taken by each organisation in the event of incidents involving hazardous substances/containers on the UK shoreline.)***



## HOSPITAL SERVICES

The responsibilities and actions outlined below provide the basic framework for the effective provision of emergency and ongoing medical care for casualties involved in a hazardous materials incident on site and at the receiving hospital.

### Receiving Hospitals

- To receive and document the health service alert
- To inform designated senior staff
- To liaise with Ambulance Control regarding the: -
  - need for mobile team
  - distribution and ETA of casualties
- To prepare decontamination and treatment areas.
- To liaise with Ambulance Service regarding possible decontamination external to A&E Department where hospital is liable to be put at risk by toxicity or if more than 3 significantly contaminated patients are received.
- To ensure that staff are suitably equipped with protective clothing.
- To resuscitate casualties where necessary as indicated by Triage.
- To follow decontamination protocols:
  - Chemical
  - Special
- To implement Major Incident Plan.

### Liaison and Reference Sources

- Reference material held in department
- Principle Reference with Ambulance Service
  - NHS Direct
  - National Poisons Information Service
  - Pharmacy Department - NHS or University
  - Occupational Health Service
  - Harwell AEA
  - Military Establishments
  - Security
  - HM Coroner

## NATIONAL HEALTH SERVICE EXECUTIVE REGIONAL OFFICE

### Health Emergency Planning Adviser (HEPA).

The responsibilities and actions outlined in this resume provide the basic framework for the effective co-ordination of emergency planning, the monitoring of preparedness throughout the region and liaison with appropriate bodies outside the NHS

#### Operational:

- ❑ Brief the Chief Executive, Regional Medical Officer and Regional Director of Public Health.
- ❑ Liaise with Districts, Hospitals and Ambulance Services and other services, agencies and authorities involved
- ❑ Organise a 'Control Centre' facility if a Regional Incident is declared

## PRIMARY CARE TRUSTS

With support from The Public Health Network and the Health Protection Agency.

Primary Care Trust (PCT) is used to address all forms of Primary Care Organisation, PCT or Care Trust.

The responsibilities and actions outlined in this resume provide the basic framework for the effective Public Health response for the protection of the community.

- ❑ To collect information on which to undertake an assessment of the risk to health
- ❑ To assess risk to health
- ❑ To consider need for biological and environmental samples
- ❑ To consider effects of environmental contamination
- ❑ To issue public statements about avoidance of exposure and effects of exposure
- ❑ To liaise with other agencies and organisations with responsibilities for responding to an incident
- ❑ To designate staff to join local response teams where indicated
- ❑ To notify the Strategic Health Authority and DHSC (Midlands & the East) of incidents that exceed the resources or boundaries of the PCT, Strategic Health Authority or Region

- ❑ To provide information and advice to GPs, Health Visitors, Emergency Services, Local Authority, Utilities, The Media and the Public
- ❑ To assess need for an epidemiological study and, if appropriate, plan how this should be done
- ❑ To agree criteria for deciding when an incident is over
- ❑ To convene a post-incident review meeting and provide a report

### **Note**

The incident becomes a regional incident when the following apply:

- ❑ More than one Strategic Health Authority is involved
- ❑ The number of casualties requires the involvement of more than one Strategic Health Authority

### **STRATEGIC HEALTH AUTHORITY**

- ❑ Co-ordinate and support the response of the PCTs where an incident exceeds the resources or boundary of one PCT
- ❑ To designate staff to join local response teams where indicated
- ❑ Provide representation at Police Gold/other multi-agency coordinating groups, if judged appropriate by PCTs

### **Liaison and Reference Sources**

- ❑ Essex Ambulance Service
- ❑ Chemical Incident Response Service
- ❑ National Health Service Units within Essex
- ❑ Essex Police
- ❑ Essex County Council, Emergency Planning
- ❑ Local Authority, Environmental Health Departments
- ❑ Essex Fire and Rescue Service, as necessary
- ❑ Occupational Health Service
- ❑ National Radiological Protection Board, as appropriate
- ❑ Military Establishments, as appropriate
- ❑ HM Coroner, as appropriate
- ❑ Stanger Science and Environmental, in liaison with Fire Service
- ❑ Reference material via internet links to the USA Agencies if appropriate.

## GLOSSARY of TERMS

ATLS	Advanced Trauma Life Support
CBRN	Chemical, Biological, Radiological or Nuclear Materials
CCDC	Consultant in Communicable Disease Control
CHAG	Chemical Hazards Advisory Group
CHEMET	Weather information supplied by Meteorological Office.
CIRS	Chemical Incident Response Service.
EA	Environment Agency
FIR	Force Information Room
HAZCHEM	Hazardous Chemical
HAZMAT	Hazardous Material
HEPA	Health Emergency Planning Adviser
HSE	Health and Safety Executive
KEMLER	This marking system contains a substance ID No. & a European Hazardous Indicator (ADRRID)
MCA	Maritime and Coastguard Agency
NAIR	National Arrangement for Incidents Involving Radioactivity
NHS	National Health Service
NPIS	National Poisons Information Service
NRPB	National Radiological Protection Board
PCT	Primary Care Trust
PHLS	Public Health Laboratory Service
REPPiR	The Radiation (Emergency Preparedness and Public Information) Regulations 2001.
RADSAFE	Scheme for incidents involving transport of radioactive materials.
SIN	Substance Identification Number

## **SECTION 2**

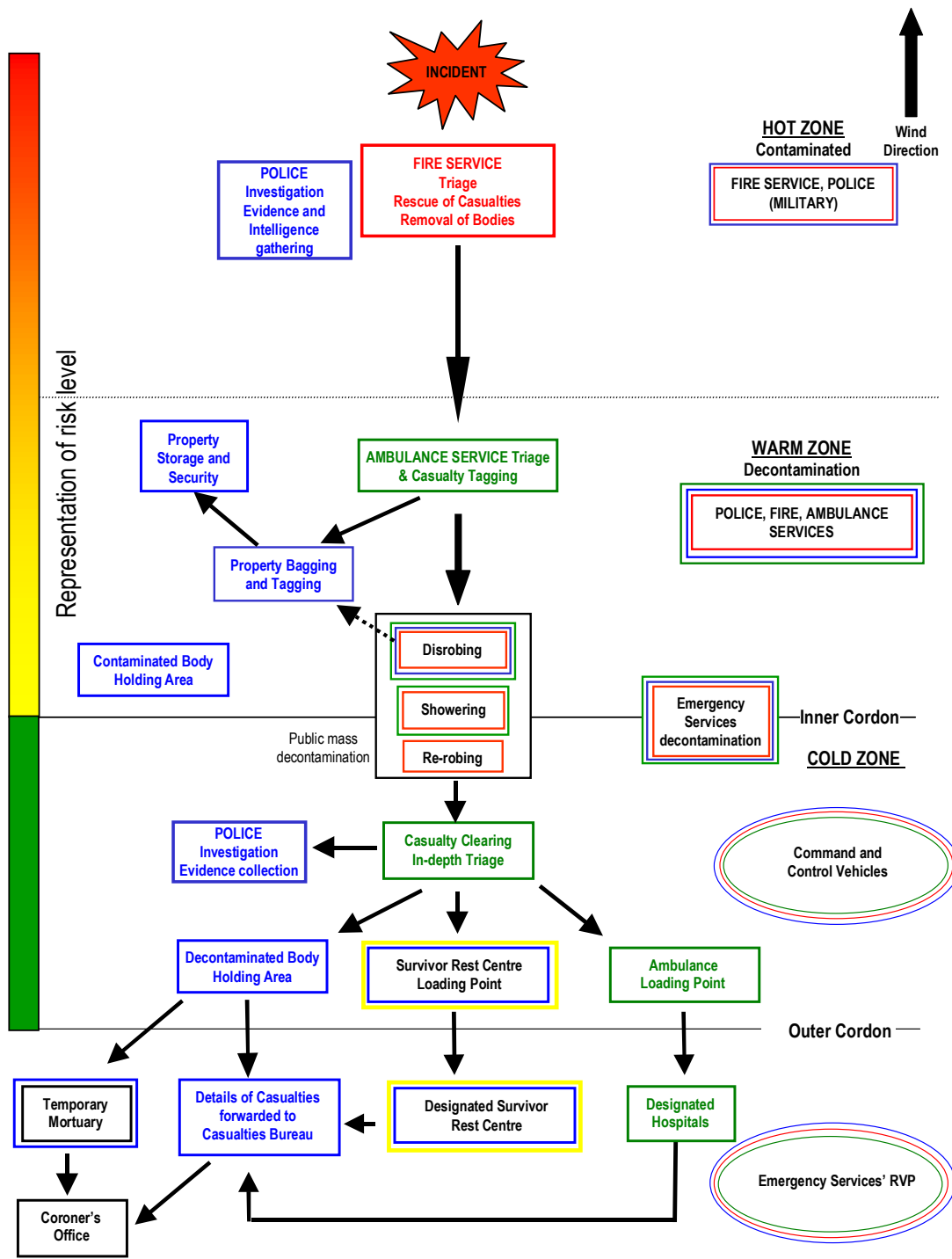
### **OPERATIONAL SCHEMATICS /DIAGRAMS**

### **ACTIONS TO BE CONSIDERED OR TAKEN**

This section provides a schematic approach to the management of hazardous materials incidence and provides schematics that cover the following areas:

CBRN Scene Decontamination Diagram	38
Response to Hazmat Incidents, Communication & Information Network	39
Hazardous Substances/Containers on Shoreline, Activation Chart	40
Police Service Response	41
Fire Service Response	42
Ambulance Service Response	43

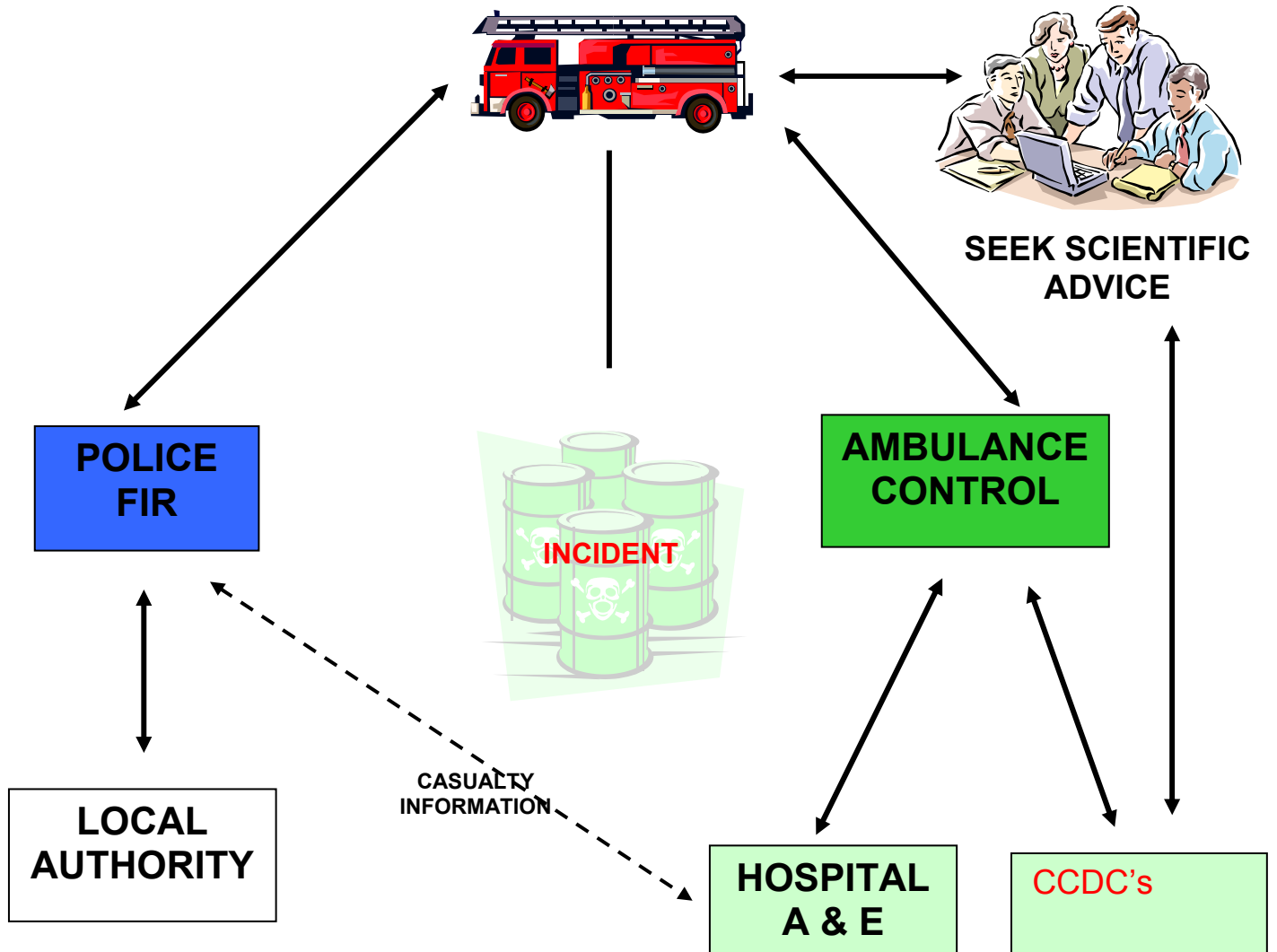
**CBRN SCENE - DECONTAMINATION DIAGRAM<sup>1</sup>**



**Key:**

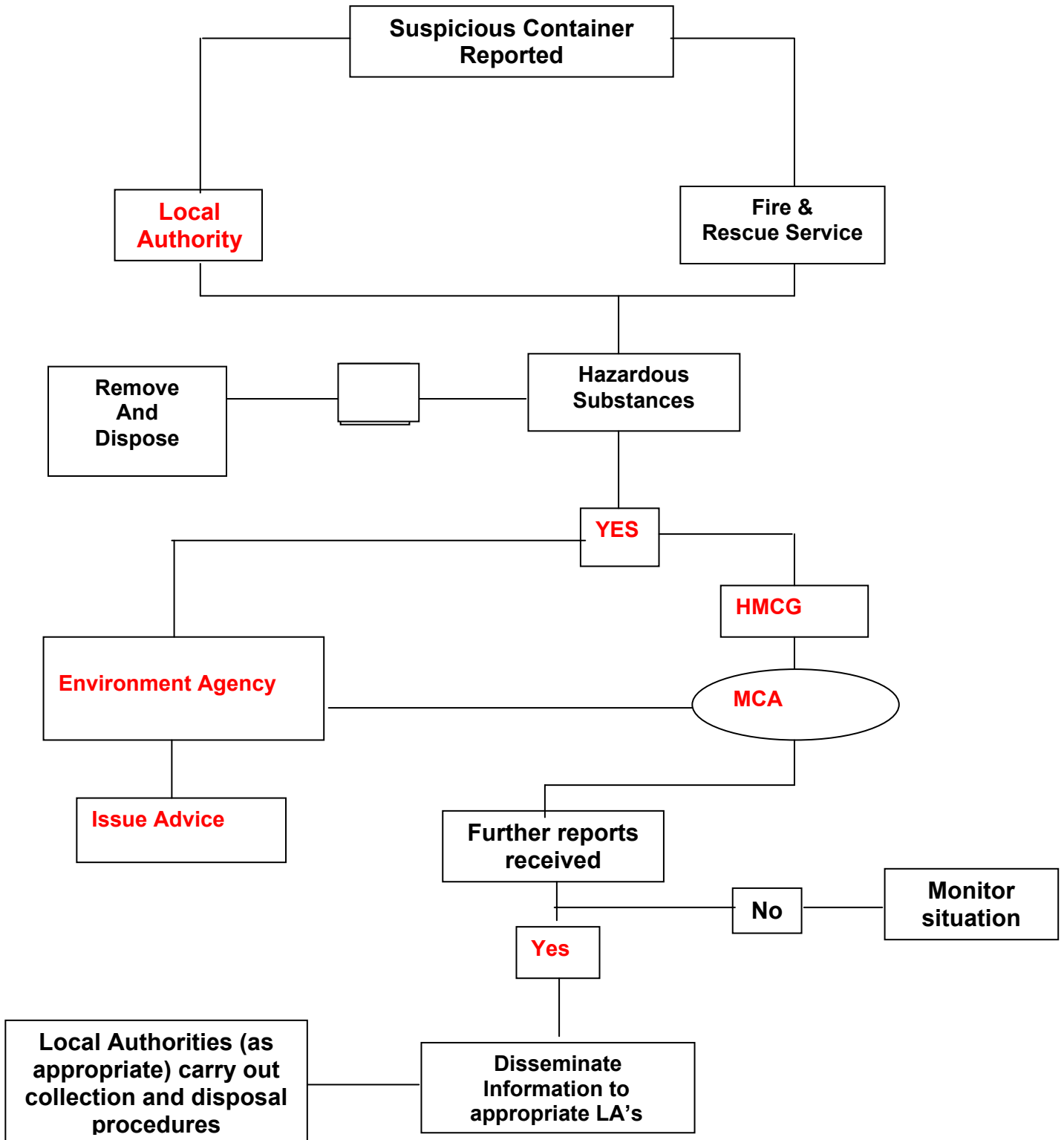
- Fire Service Responsibilities
- Ambulance Service Responsibilities / Medical Incident Officer managing Mobile Team
- Police Responsibilities
- Local Authority Responsibilities
- Coroner's Office

# COMMUNICATION and INFORMATION NETWORK



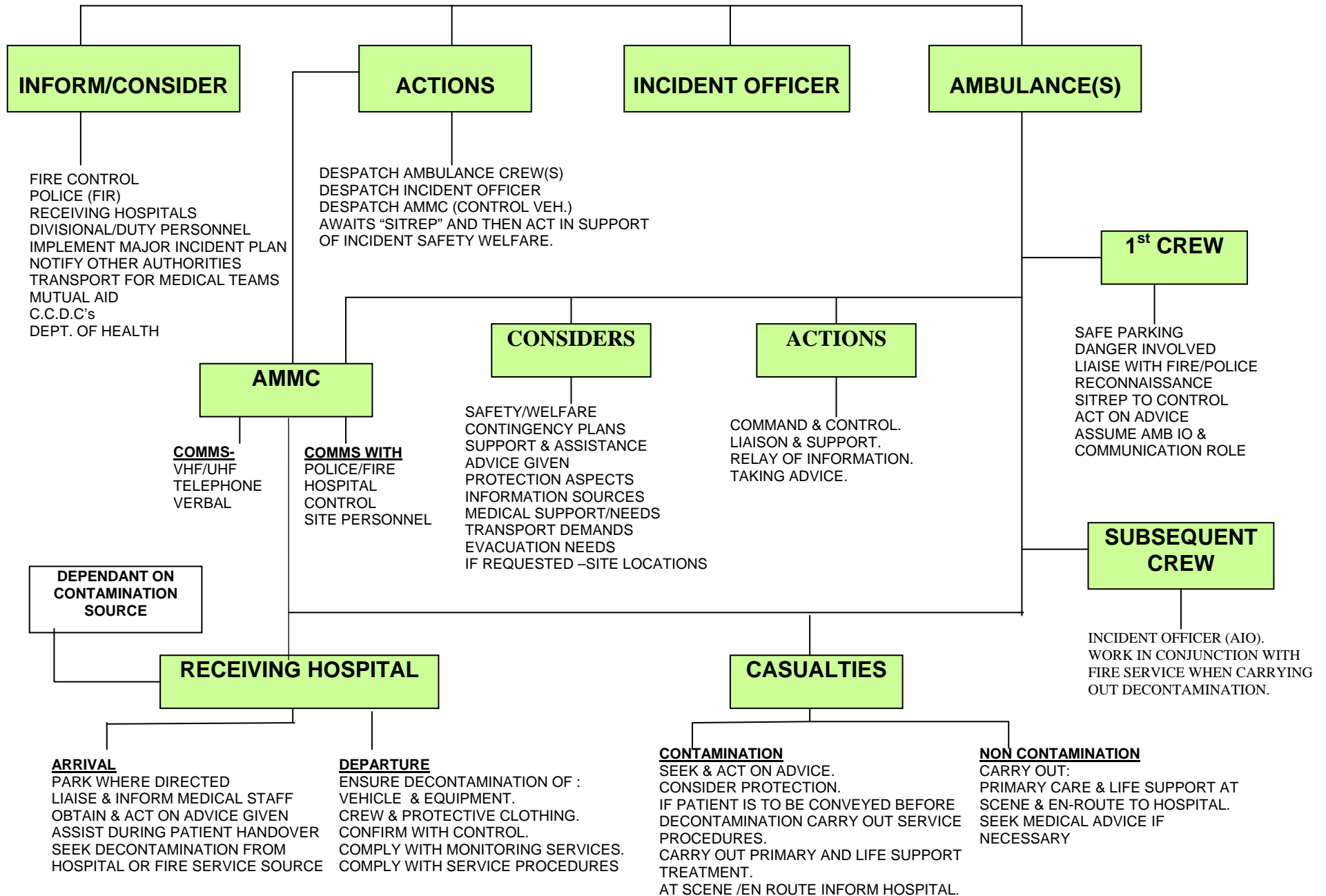
## HAZARDOUS SUBSTANCES/CONTAINERS on UK SHORELINE

### ACTIVATION CHART

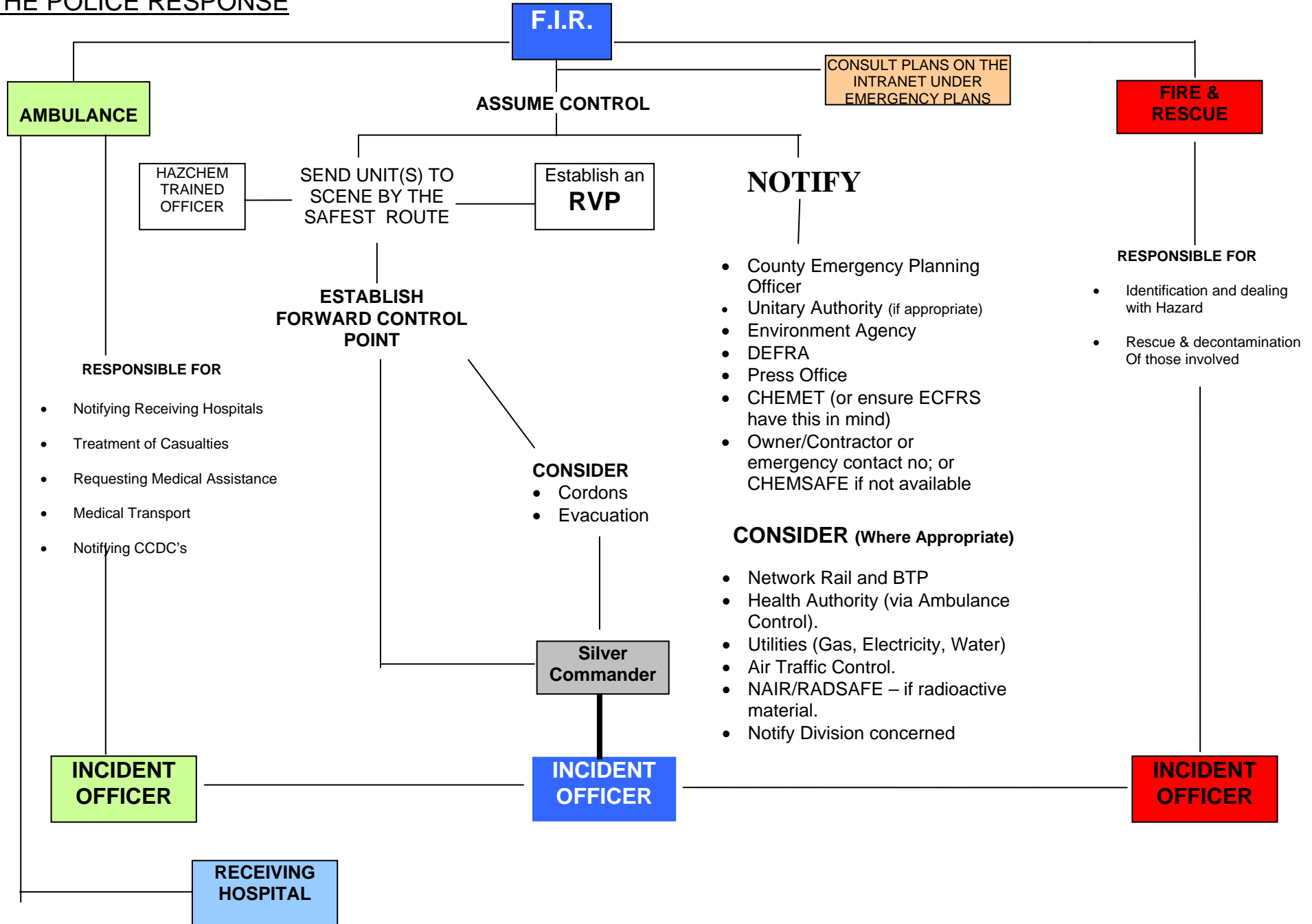




# AMBULANCE SERVICE RESPONSE



# THE POLICE RESPONSE



# FIRE SERVICE RESPONSE

