



# Wiltshire and Swindon Major Incident **HAZARDOUS MATERIALS GUIDE**



## A GUIDE TO A CO-ORDINATED RESPONSE TO A HAZARDOUS MATERIALS (HAZMAT INCIDENT)

This report of Wiltshire's Local Resilience Forum (LRF) is published as a source of information to aid an integrated response between agencies without affecting the policy of any of the responsible services.

This document embraces the Emergency Services, the Department of Health (DH), the NHS Executive (NHSE), Health Protection Agency (HPA), Local Authorities, National Arrangements for Incidents involving Radioactivity (NAIR), and other documents in interpreting procedures to be followed in the event of a hazardous incident occurring.

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## FOREWORD

The second re-write of this document is necessary in light of experience and also there is a need to continually update a living document. World events are such that in spite of legislation, Major Incidents involving Hazardous Materials continue to occur and place the lives of both the public and those responding to such an incident at risk.

Emergencies involving Hazardous Materials can happen anywhere and at any time and, therefore, it would be foolish to believe that such an incident could not occur in Wiltshire and Swindon. With this in mind, it is clearly prudent that the county should have available detailed procedures for the integration of the responses by the various services and authorities that might be involved in mitigating the effects of such an incident.

Should we be unfortunate enough to experience a Hazardous Material incident in the County of Wiltshire or Borough of Swindon, then this document will stand us in good stead. At the conclusion of the incident it is important that the lessons learnt are incorporated in the next re-write at the earliest opportunity.

I welcome the publication of this Guide, which should do much to ensure that an incident in Wiltshire can be successfully handled with minimum risk both to those operating at the scene and to the public at large.

Additionally I know that the work of the LRF in publishing this document has received wide acclaim and therefore its contents should be viewed in that regard.

Peter Vaughan  
Assistant Chief Constable  
Chairperson LRF

## ACKNOWLEDGEMENTS

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## How to use this Guidance Document

The document has been divided into three parts:

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### Part 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.

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### Part 2

Provides a quick reference guide with operational schematics/diagrams of actions to be considered or taken.

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### Part 3

This section covers the multi-disciplinary approach and the complexities of treating contaminated casualties. It can, if necessary, be detached from the manual for use by the health services.

This document must not be read in isolation from any other document but as part of a suite of guides produced by the Wiltshire and Swindon Local Resilience Forum. Other Wiltshire LRF publications include:

- Joint Procedures Guide
- Media Guide
- Temporary Mortuary Guide
- Mass Casualties Guide
- Memorandum of Understanding (MoU) between Wiltshire Health Services and Wiltshire Fire Brigade

In addition the Major Incident Plans of each organisation should be read. These documents are cross-referenced where ever applicable.

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## OVERVIEW

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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 these hazardous substances. The guidelines outlined in this document have been created in order to enable the responding agencies to manage the wide range of potential problems, including the management of casualties and stabilisation of the incident leading to a return to normality with minimum effect to the environment.

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### AIM

The aim of this document 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:

- Preventing injury to the responding services.
  - Injury to casualties and the local population.
  - Damage to the built and natural environment.
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### THE GUIDE

This guide:

- Covers the management of HAZMAT incidents.
  - Should be considered as a supplement to the responding agencies Major Incident Plans where Hazardous Materials are involved.
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## **DEFINITIONS**

### ***CBRN***

This generic term is used to refer to all Chemical, Biological, Radiological and Nuclear substances. The term is applicable regardless of whether its release is accidental or deliberate.

### ***Hazardous Materials (HAZMAT)***

HAZMAT refers to all Hazardous Materials, Chemical, Biological, Radiological or Nuclear (CBRN) substances, regardless of whether its release is accidental or deliberate.

### ***Hot/Warm/Cold Zones***

These terms refer to the areas that will be designated within the Incident Cordons to identify hazardous (or dirty) decontamination and clear (or clean) zones.

### ***Integrated Services***

The 'integrated services' are those services deemed necessary in order to deal effectively with a HAZMAT incident including the three primary emergency support services (Police, Fire and Ambulance), Local Authority, Wiltshire and Swindon Primary Care Trusts and Wiltshire Health Protection Team.

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## **CONTAMINATION**

Contamination is divided into the following areas:

### ***Primary Contamination***

Takes place as a result of direct contact with the contaminating source.

### ***Secondary Contamination***

Results from the individual, or object with primary contamination, contaminating another individual or object.

### ***Tertiary Contamination***

Results from the individual, or object with secondary contamination, contaminating another individual or object, in particular contamination of food and water.

### ***Casualties***

A person who is contaminated should be treated as a 'casualty' whether injured or not and this may include staff.

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## THE HAZARDS

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### Introduction

In this document the term CBRN is used to denote incidents involving Chemical, Biological, Radiological and Nuclear agents. Unfortunately the term has now become synonymous with terrorist incidents but the likelihood of a CBRN incident occurring in this context is very remote. The possibility of an industrial or transportation related incident remains the most likely cause.

There are many thousands of flammable, corrosive, toxic, explosive and radioactive materials in use and transported within the County every day which are potentially hazardous to health should any spillage or leakage occur. The generic term used in this document to deal with all of these substances will be HAZMAT.

This document will deal with HAZMAT in exactly the same way. It does not attempt to identify its CBRN components, as this is a dangerous task and will add delay to the process of dealing with the incident.

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### Chemical Hazards

By far the most likely type of hazardous material incident to occur is a chemical fire, spillage or leak. Chemicals can cause injury to people in a number of ways including:

- Inhalation – neat products or by-products of combustion.
- Contact with, or absorption through the skin or eyes.
- Ingestion.
- Eyes.

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.

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### Biological Hazards

Biological hazardous materials may be found stored in hospitals and medical research establishments throughout the county. At times, it is necessary to transport small quantities of these types of materials. Dependent on the biological hazard that is being stored or transported, dangers can range from minor through to life threatening types. A very small quantity of such material can be extremely dangerous. Biological hazards can be serious if the substance is either ingested or inhaled. It is therefore necessary for all personnel who approach a leaking biological package to be fully protected against these forms of contact with the hazard.

A biological spillage can be neutralised by using a soapy solution.

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## **Radiological & Nuclear Hazards**

The legislation appertaining to the use and transport of radiological substances has ensured that incidents involving radiological release are extremely rare.

Amongst others radiation can affect the human body in the following three principle ways:

### ***ALPHA Particles***

The danger from alpha radiation is if the substance is either ingested or inhaled, where it can remain in the body for some considerable period continuing to irradiate the surrounding tissue. Alpha particles have a very short penetration ability and do most harm to skin and to lungs. Because of their poor penetration, a person contaminated with alpha particles alone will not require decontamination, and a contaminated patient is not a risk to other people. A patient should be assessed by a Radiation Protection Advisor whilst being treated.

### ***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 ingesting or inhaling the substance, thereby irradiating internal tissue. Beta particles have greater penetrating ability and thus the potential for more harm. There is a need for reduced exposure and to wear personal protective equipment, which in many cases will enable greater working time. Beta contaminated patients are not a risk to others.

### ***GAMMA Radiation***

This form of radiation is emitted like a radio wave and will pass through the body, affecting the cell structure. The effects of gamma radiation can be reduced by limiting the time that the person is exposed, by increasing the distance that the person is away from the source of the radiation, or by using some form of suitable shielding between the source and the body. Because of its penetrating nature, contaminated patients are a risk to staff. Patients will need to be decontaminated and staff will need to wear protective equipment

If it is not possible to provide adequate protection, clothing and lead shield against gamma radiation exposure must be minimised and expert advice sought.

Out of the three forms of radiation, Gamma is considered the most dangerous.

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. This is nevertheless a very specialist field and at all times advice from the NRPB must be sought.

The risk may also be reduced by moving away from the source, if it is known. By doubling the distance from the source the effect of the radiation is quartered.

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## **SPECIALIST ADVICE AND ASSISTANCE**

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This section seeks to assist individuals in identifying a 'one-stop-shop' for best advice in a CBRN incident. This edition sees the removal of many organisations from its list of specialists. There is no intention of disbarring an organisation from being listed but what is imperative is that all agencies seek to deal with the same information.

Currently in this section reference is only made to the Health Protection Agency (Division of Chemical Hazards and Poisons) formerly known as the Chemical Incident Response Service, at Guys and St Thomas' Hospital, London and to CHEMET, for the meteorological centre to provide agencies with weather information.

Contact details for these organisations and many others that can be of assistance in such an event may be found in the Wiltshire County Council Emergency Contact Directory which is regularly updated.

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### **Chemical**

#### ***CHEMET***

CHEMET is a scheme administered by the Meteorological Office at Bracknell in order to supply the Emergency Services with weather-based information on the likely dissemination of an airborne pollutant.

In the event of an incident involving the release of toxic chemicals or large quantities of smoke into the atmosphere there may be a requirement for meteorological advice, such as wind speed, direction and the rate at which the cloud of material will disperse etc. and this scheme assists in supplying this information.

The CHEMET scheme is divided into two parts;

#### **Part A**

Rapid response to give the best estimate of wind speed and direction at the site together with a brief description of the expected behaviour of any released material. Details are available within two to three minutes by telephone.

#### **Part B**

Provides much more detailed information and will be available within 20 to 30 minutes which will also include an 'area at risk map'.

#### ***Health Protection Agency (Division of Chemical Hazards and Poisons) - formerly CIRS***

The Health Protection Agency (Division of Chemical Hazards and Poisons) is currently contracted to provide a 24-hour clinical toxicological and chemical advice service to all responding agencies within Wiltshire and Swindon.

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## **Biological**

### ***Wiltshire Health Protection Team***

- In the event of a biological incident, the Wiltshire Health Protection Team would lead the county's response and provide clinical advice not only to the Strategic Co-ordinating Group but also to Healthcare providers.
  - In the event of a biological terrorist incident the Police would co-ordinate the response.
  - The Wiltshire Health Protection Team would provide specialist clinical advice to the Strategic Co-ordinating Group.
  - The Consultant in Communicable Disease Control (CCDC) is the first point of contact for clinical advice regarding biological contamination.
- 

## **Radiological/Nuclear**

### ***NAIR (National Arrangements for Incidents involving Radioactivity)***

- NAIR is a set of national arrangements that provide a 'long-stop' to other emergency plans.
- If there are no other plans suitable to deal with the event then NAIR assistance should be sought by the Police.
- NAIR provides advice and assistance to the Police in incidents involving radioactivity where members of the public may require protection.
- Contact is via the United Kingdom Atomic Energy Authority Constabulary Force Communications Centre, which will take details of the incident and contact the closest NAIR responder.
- The NAIR responder will then contact the person dealing with the incident directly.

### ***RADSAFE***

RADSAFE incorporates the following:

- Covers Great Britain (England, Scotland, Wales)
  - Restricted to signatories of the RADSAFE contract
  - Restricted to events involving transport of radioactive material
  - Excludes major MOD movements, such as nuclear weapons
- 

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RADSAFE brings together the following plans:

- Nuclear Industries Road/Rail Emergency Plan
- Irradiated Fuel Transport Flask Emergency Plan
- SNL Irradiated Transport Flask Emergency Plan

RADSAFE provides:

- Early generic radiological advice/information to the emergency services.
- Technical support within target times.
- Clear responsibility for 'clean up'.
- A communications route for expert advice and technical support.
- A framework for Media Support
- Consignment owner support

RADSAFE is based on the well-known CHEMSAFE response plan for bulk chemical transport, but it is an entirely separate organisation. The aim of RADSAFE is to simplify and ensure a "one stop shop" for incidents involving the transportation of radioactive material, always remembering that the emergency services are the key to providing initial aid at the scene. Centres are based at London, Birmingham, Glasgow and Chester with a HQ at British Energy Generation Ltd at Barnwood, Gloucester.

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## **DEFENCE NUCLEAR MATERIALS**

### ***NARO (Nuclear Accident Response Organisation)***

The Ministry of Defence is the lead government for response to a defence nuclear materials transport incident, and as such the Ministry of Defence maintains a Nuclear Accident Response Organisation and necessary contingency plans.

The response is two fold. Firstly the Immediate Response Forces (IRF) which is embedded within a road convoy and on constant readiness with helicopter support during aircraft flights carrying nuclear materials.

Second is the Follow-on-Forces (FoF) which are on enhanced readiness during any movement of Defence nuclear materials. If all resources were deployed it would involve some 650 persons within 24 hours.

In command of this response is Nuclear Accident Response Organisation HQ based in London who would liaise with government.

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## GENERAL PRINCIPLES FOR STAFF AT INCIDENTS INVOLVING HAZARDOUS SUBSTANCES

***"Don't touch it - Keep others away - Try to identify it safely.  
Inform control - Get expert advice"***

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### Safety

- Get Chemet data.
- Obtain details of safe approach route if possible and applicable.
- Position vehicle upwind, uphill and at a safe distance.
- Built up areas may influence wind flow patterns, and materials may spread through drains and watercourses.
- The affects of CBRN in enclosed areas is particularly important especially where wind flows are unable to disperse the contaminant.
- Personnel with skin conditions or wounds should not be involved and must be informed of the dangers.
- Avoid all contamination and spillage.
- Do not become involved at the scene without using protective clothing: overall, gloves, boots, respiratory/eye protection, etc.
- Consider inhalation risk - remember limitation of masks.
- NO smoking, drinking or eating at the scene until 'clean'.
- Beware of contaminated water, especially flood water.

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### Situation Report - Sitrep

The mnemonic '**SAD CHALETS**' has been devised to help Control Room Operators and the first responding officers to identify the extent of the incident. All first responding agency Control Room Operators and first responders must pass all known information to other agencies attending the scene. By doing this the safety of responders to the scene can be assured.

|          |         |  |
|----------|---------|--|
| <b>S</b> | Survey  | Report from a safe area and be aware of your own safety and that of others attending the scene (carry out an initial risk assessment). |
| <b>A</b> | Access  | Assess what has happened and inform the Control Centre   |
| <b>D</b> | Declare | Declare a Major Incident at an early stage if deemed appropriate   |

Control Room Operators will be in a position to obtain a great deal of information from members of the public or their own officers reporting incidents to the Emergency 'blue light' Services, usually via the 999 system. In addition the first responders can also pass this information to their Control Room to confirm the incident and give a situation report on the current circumstances. The mnemonic '**CHALETS**' will help:

|          |                    |  |
|----------|--------------------|--|
| <b>C</b> | Casualties         | Approximate numbers of casualties – dead, injured and uninjured.   |
| <b>H</b> | Hazards            | Present and potential.   |
| <b>A</b> | Access             | Best access routes for emergency vehicles and suitable provisional <a href="#">rendezvous points</a> .     |
| <b>L</b> | Location           | The exact location of the incident, using map references if possible.                                      |
| <b>E</b> | Emergency Services | Those emergency services present and those required.   |
| <b>T</b> | Type               | The type of incident with brief details of types and numbers of vehicles, trains, buildings, aircraft etc. |
| <b>S</b> | Safety             | The safety of others attending the scene including the officers themselves.                                |

The first responding officer must then start a written log and maintain radio contact with his/her control centre to co-ordinate the response of the Police, Ambulance and other responding agencies until relieved by an officer of more senior rank.

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### **Share**

- Share information - liaise with other officers and organisations involved as appropriate and where appropriate consider cross border liaison.
  - Look for hazard warning signs/symbols/clues (e.g. HAZCHEM label, SIN No, TREMCARD advice sheet, KEMLER code, data sheets or ICSC International Chemical Safety Cards).
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### **Staff/Public Protection**

- Warn bystanders and public and consider evacuation.
  - Treat the rescued.
  - 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 or even temporarily blind.
  - Take advice about decontamination. Shower thoroughly, including hair and scrubbing fingernails.
  - Flush any wounds sustained, and seek immediate Medical assistance.
  - Discard any dressings into plastic bags and seal pending proper disposal.
  - Carry exposure records as advised and seek medical advice in the event of any problems.
- 

### **Sterility**

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

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## COMMAND AND CONTROL

In the case of an incident of significance the command structure would comprise three levels:

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

The Ground Commander - known as "BRONZE" - directs the operational implementation and execution of the determined tactics. If the situation demands, separate Bronze Commanders are appointed to specific key tasks, such as being in charge of cordons or evacuation, and are identified accordingly by the title "BRONZE 1", "BRONZE 2", etc.

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### **Tactical (Silver)              Near the incident site**

The Incident Officer - known as "SILVER", determines and directs the tactics necessary to achieve the overall strategy. The Officer concerned will operate from a command post termed "SILVER CONTROL", which is normally co-located with those of the other emergency services to facilitate liaison.

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

The overall incident commanders - referred to as "GOLD" form the Strategic Co-ordinating Group and are responsible for setting objectives, determining strategy, formulating policies and providing support for the whole operation.

Where the incident is likely to be protracted, or result in extensive commitment of resources, an associated incident room, known as "GOLD SUPPORT", would be established by each organisation to support executive functions, arrange logistics, and provide central co-ordination with other services. The multi-agency Strategic Co-ordinating Group will hold meetings at a venue agreed by the Gold Commanders, normally at Police Headquarters, Devizes.

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### Integrated Emergency Management Framework

| Level                | Police                     | Fire                           | Ambulance            | NHS                                | Local Authority |
|----------------------|----------------------------|--------------------------------|----------------------|------------------------------------|-----------------|
| Operational (Bronze) | Ground/Sector Commander(s) | Sector Commander(s)            | Ambulance Officer(s) | Mobile Medical Team                | LAIO            |
| Tactical (Silver)    | Incident Officer           | Operational Incident Commander | Incident Officer     | Medical Incident Officer           | EPO             |
| Strategic (Gold)     | Overall Incident Commander | Senior Fire Officer            | Chief Executive      | Primary Care Trust Chief Executive | Chief Executive |

#### THE JOINT HEALTH ADVISORY CELL (JHAC)

If the incident poses a significant threat to public health, the Overall Police Incident Commander will ask the Chair of the JHAC to join the Strategic Co-ordinating Group.

The on-call Primary Care Trust Chief Executive will establish a Joint Health Advisory Cell (JHAC). The Joint Health Advisory Cell membership may include:

- The Director of Public Health from the Primary Care Trust affected. (Chair)
- The Consultant in Communicable Disease Control (CCDC).
- The Primary Care Trust's Emergency Planning Manager.
- An Environmental Health Officer.
- An Environment Agency Manager.
- A Wiltshire Ambulance Service Officer.
- A Fire Brigade Officer (where appropriate).
- HPA Chemical and Poisons Divisional Officer.
- The Local Authority Emergency Planning Officer.
- A Water Company representative.
- A Police Liaison Officer.

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In the event of a deliberate release the group will be augmented by:

- A Scientific Officer from Porton Down.
- A Military Medical Adviser.

The Joint Health Advisory Cell will usually be located at the Strategic Command Centre and its meetings will run between the Strategic Co-ordinating Group / Chief Constable's Co-ordinating Group (CCCG) meetings. The Director of Public Health will represent the Joint Health Advisory Cell at these meetings.

The main purposes of the group are to:

- Take advice on the health aspects of the incident from a range of experts, as required.
  - Provide advice to the Police Incident Commander on the health consequences of the incident including the consequences of any evacuation or containment policies.
  - Agree with the Police Incident Commander the advice to give to the public on the health aspects of the incident.
  - Keep a written record of decisions made and the reasons for those decisions.
  - Formulate advice to health professionals in hospitals, ambulance services and general practice.
  - Formulate advice on the strategic management of the health service response.
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## THE CONSTABULARY

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### Role

In the event of such an incident occurring, the prime role of the Police at the scene is the overall co-ordination and management of resources; securing the area in order to allow other emergency services and specialists to operate unimpeded; and preventing members of the public being endangered. This may entail implementation of the Police Major Incident Plan, in whole or in part, which should always be considered in conjunction with any other relevant contingency plan. It is essential that close liaison is maintained and pertinent information exchanged at all levels with other Emergency Services and affected agencies, both during the incident and the subsequent investigation, and whenever there is requirement to work in concert (e.g. dealing with the media and casualty information).

It should be remembered that under normal circumstances Police Officers are neither trained to use, or possess, suitable protective clothing and equipment for operating in what might be a contaminated area. As first responders to numerous incidents it is vitally important that all Police staff are aware of the dangers posed by Hazardous Materials and the many and varied circumstances in which contact with them by any first responder might be possible.

Police Officers attending the scene of a Hazardous Materials Incident should not knowingly place themselves in danger, thereby creating an additional liability and casualties. Whilst they should take precautionary measures to cordon the scene, safeguard others, and seek to identify the substance involved (e.g. by questioning the driver and examining the 'TREM CARD' / cargo manifest), they will avoid precipitous action. If in doubt, they must err on the side of safety and not be tempted to go forward or become directly involved in rescue work without first consulting the Fire Brigade. In case of contamination, it will be necessary for suitably equipped Fire Brigade Officers to assist the Police in providing Inner Cordon security, body and evidence recovery.

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## **Areas of Responsibility**

The primary areas of Police responsibility, which may be required in connection with such an incident, include:

### ***Command Control & Communications***

- To facilitate, co-ordinate and manage the overall response of the Emergency Services, Local Authorities, and other organisations acting in support at the scene and the consequent effect of any pollution and contamination.
- Supplying information to authorised enquirers relating to and affecting the incident "controlled area".
- Aiding the Local Authority Emergency Planning Officer, District & Borough Councils and other organisations/specialists.
- Assisting with the restoration of normality.
- Making provision for the media and orchestrating a co-ordinated approach.

### ***Site Control***

- To secure, protect and preserve the scene, and to control access through the use of cordons:
- Inner cordon - to provide or, where it is unsafe to do so, arrange for the provision of immediate security of the rescue zone and potential crime scene with suitable protected personnel. In most cases this is the Fire Brigade.
- 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 away from the scene.

### ***Managed Casualty Dispersal***

- Close liaison with the other Emergency Responding Agencies to facilitate the early and effective removal of casualties from the scene to an appropriate facility.
- Following the decontamination of casualties and where appropriate arrange, with the Ambulance Service, a Casualty Clearing Station and an Ambulance Loading Point.
- The collation and dissemination of casualty information, by way of the Casualty Bureau and Police Hospital Documentation Teams.
- Make arrangements for the appropriate collection, storage and or disposal of property involved.

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**Population Protection**

To mitigate the effect on the public by orchestrating the issuing of advice and warnings following consultation with the Fire Service; where necessary, implementing evacuation to Local Authority Rest Centres and safeguarding the vacated properties.

In association with Local Authorities, arranging Reception Centres for uninjured survivors and their friends and relatives.

**Legal**

The investigation of the incident, obtaining and securing evidence in conjunction with other investigative bodies where applicable.

In liaison with Her Majesty's Coroner, ensure bodies are labeled and transferred to a mortuary, assist with post mortem examinations and conduct such enquiries as may be necessary for the subsequent inquests.

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**Removal of the Deceased**

Normally dead bodies should not be moved until appropriate arrangements have been made and the prior authority of H.M. Coroner obtained. However, the need to safeguard life must take precedence over all other considerations. The scene should be treated as a scene of a crime, particularly where loss of life or injury has occurred and, as far as possible, evidence preserved to assist any subsequent investigation.

The nature of the hazardous material involved will determine whether there is an essential requirement to decontaminate dead bodies before removal, and the timing of such action (E.g.: is the material highly corrosive and likely to destroy the remains or associated evidence?). Expert advice should therefore be sought, and all subsequent handling of the body undertaken by personnel wearing personal protective equipment as appropriate.

The need to conduct a thorough investigation will be paramount. Regardless of any later criminal proceedings there are likely to be a number of judicial actions emanating from the incident.

Subject to the expert advice received, the general principle is that a dead body should be decontaminated prior to removal from the scene. Failure to do so may render other facilities such as a Hospital or Temporary Mortuary becoming inoperable. The decision to conduct post mortem examinations will be one for HM Coroner.

As continuity of evidence is vital, the position of the deceased should be recorded and the body labeled before it is placed in one or more sealed body bags or other suitable container according to the material involved, to completely contain the contents. The bag must be clearly labeled to warn of the presence of the hazard.

Where decontamination of bodies, property and other evidence is required prior to removal from the scene, the Wiltshire Fire Brigade, through negotiation, will assist in this process.

Casualties removed for decontamination who subsequently die or are found to be dead at the Casualty Clearing Station should be retained at a convenient Body Collection Point and then handled in accordance with the foregoing principles.

## THE FIRE BRIGADE

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### Role

The role of the Fire Brigade is derived from its long experience in fire fighting and rescue operations of all types. The Fire Brigade undertakes the responsibility for safety management of all personnel within the inner cordon where health and safety issues apply. This plan aims to cover the following aspects:

- The rescue of trapped casualties.
- Provide expertise and undertake the role of decontamination of casualties.
- The prevention of further escalation of the incident by dealing with any released chemicals, other hazardous situations and tackling fires.
- Gathering information and assessing the hazard to give advice to the Police and enable them to advise the public to shelter or evacuate.
- Liaising with the Police regarding the provision of an inner cordon around the immediate incident to enable the Fire Brigade to exercise control.
- To ensure the safety of all personnel involved in rescue work.
- To give consideration to the effect the incident may have on public health and the environment and the action to be taken to minimise this.
- Liaising with the Medical Incident Officer and other medical services.
- Liaising with the Ambulance Service with regard to the provision of assistance at casualty triage, resuscitation and decontamination areas.
- The priority evacuation of the injured.
- Assisting the Police with recovery of the dead.
- Participating in investigations, as appropriate and the preparation of reports and evidence for enquiries.
- Standing-by during the non emergency recovery phase to ensure continued safety at and around the site if necessary.

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## **Areas of Responsibility**

The responsibilities and actions outlined provide the basic framework for the effective control, rescue of casualties and reduction of risk to the environment of a toxic or chemical release.

### ***Site Control***

- If possible, to identify the released substance and the necessary protective measures required to gain access to the contaminated area.
- The cordoning off of the contaminated area and maintaining control of that area.
- Liaison with the Police regarding the provision of a further cordon around the inner cordon to enable the Fire Brigade to exercise control within that inner cordon.

### ***On Site HAZMAT Management***

- The safety of all personnel directly involved in the rescue work or working within the inner cordon.
- Endeavour to prevent further escalation of the chemical incident by the provision of basic containment equipment.
- Standing by during the non-emergency recovery phase to ensure continued safety at and surrounding the site.
- Where circumstances dictate and by negotiation to assist the Police with the recovery of bodies from contaminated areas and the decontamination of those bodies if necessary.

### ***Casualty Management***

- The provision of personnel suitably protected and with suitable rescue equipment to enable them to rescue trapped casualties.
- In close liaison with the Ambulance Service to undertake the decontamination of casualties.
- To assist the 'receiving' hospital in setting up a decontamination and resuscitation point outside the A&E Department.
- Liaison with the Ambulance Service, the on call PCT Chief Executive and the Medical Incident Officer regarding the nature of the released substance, screening decontaminated casualties for radiation and assisting the Ambulance Service with loading points and priority of evacuation.

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*Continued on next page*

### ***Population Protection***

- Information gathering and hazard assessment enabling advice to be given to the Police about the needs or otherwise to shelter or evacuate members of the public.
- Assist the Police with advise on the precautions to be taken for public safety.

### ***Environmental Impact***

- Liaison with authorities responsible for the environment and consideration of the effects of an incident on the environment and where appropriate deal with environmental protection.
- Liaison with the agency responsible for the clear-up operation, and by negotiation assist, where appropriate.

### ***Legal***

- Participating in investigations as appropriate and preparing reports and evidence for enquiries.

### ***Documentation***

The Fire Brigade will carry forms [HM1](#) (Nominal Roll of attendees to incident) and [HM2](#) (Contaminated people) (see appendices 1 & 2) for documenting information on personnel and non-service casualties exposed at HAZMAT incidents. The Fire Brigade will also provide the forms for other emergency service personnel for them to complete as above.

### ***Specialist Advice***

The Fire Brigade will normally be responsible for:

- Obtaining advice on 'hazardous materials'. Fire Brigade Control maintains a technical library as well as a computerised database.
  - Determine the down hazard prediction based on timely local meteorological Information and topography.
  - Liaison with the chemical industry either through private contacts or other schemes that may provide valuable information. Legislation on the storage, transportation and use of hazardous materials has resulted in the requirement for information to be available on site and during transportation.
-

## THE AMBULANCE SERVICE

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In an incident with immediate casualties the Ambulance Service is the 'gate keeper' to other NHS services. It will be the first NHS responder on the scene and will decide where casualties should be taken, provide immediate treatment, transport and co-ordinate communications between different parts of the NHS. In the initial stages of an incident the Ambulance Services provides an essential link between the NHS and other agencies.

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### Key Roles and Responsibilities

- Assess the incident.
  - Co-ordinate the on-site operational NHS response.
  - Liaise with other Emergency Services on-site.
  - Identify and activate the resources needed to respond.
  - Manage the NHS activity at the scene.
  - Co-ordinate NHS communications at the scene.
  - Treat casualties, assist extrication, triage, stabilise, and give initial treatment.
  - Transport casualties to hospital.
  - Protect the health and safety of all health service personnel on site.
  - In conjunction with the Fire Brigade, undertake decontamination of casualties.
- 

### First Actions

Immediately notify and confirm with Police and Fire controls the location and nature of the incident including identification of hazardous materials.

- Ensure decontamination and personal protective equipment is deployed to the scene.
  - Alert the most appropriate 'receiving' hospital(s) and inform the hospitals of the type of incident and estimated number of casualties involved.
  - Determine whether a Medical Incident Officer and Mobile Medical Team(s) are required and ensure arrangements are in place to transport to the scene.
  - To manage the casualty triage, emergency resuscitation, decontamination and subsequent transport of the 'clean' casualties to hospitals.
  - To ensure that accurate records and health monitoring procedures are complete and available for all Ambulance personnel involved in the incident.
-

## THE LOCAL AUTHORITY

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### Role

The primary role of the Local Authorities in response to an incident involving hazardous substances is the provision of support to the Emergency Services. Allied to this is the need to ensure the safety of the public and the protection of the environment. Careful control and coordination of Local Authority resources will ensure the restoration of normality as soon as is practicably possible.

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### Implementation Procedures

Activation of Local Authority response services is initiated via the Duty Emergency Planning Officer. The Police or Fire Brigade Control Room would normally generate the initial alert call. Upon receipt of this call it is the responsibility of the Duty Emergency Planning Officer to alert sufficient staff as will be necessary to provide an efficient and effective response in accordance with the agreed local authority Major Incident Procedures. The response will be generated in accordance with the procedures set out in the Procedures in Emergency Guide and the District/Borough Council Major Incident Plans.

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### Responsibilities

- Maintenance of day to day services.
  - Co-ordination of support activities.
  - Maintenance of an alert and call out system for non-blue light services.
  - Provision of appropriate resources.
  - Provision of Local Authority Incident and Liaison Officers.
  - Provision of suitable emergency communication systems.
  - Provision of information and advice on population and environmental issues.
  - Arrange for and undertake evacuation measures.
  - Provision of sheltering and welfare arrangements.
  - Returning the community to normality.
  - Restoration in conjunction with other agencies.
- 

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## Resources

The Local Authority will endeavor to meet the demands of all partner agencies within the scope of a Major Incident. To this end all essential Local Authority resources that can be made available, will be made available in order to mount an effective response to any incident.

If the Local Authority cannot provide the necessary resources from within its own organisation it will make every effort to obtain them from external sources. However, it must be borne in mind that charges *may* be raised against those agencies or organisations which request support.

In the event that the incident is of such a scale or nature that the Local Authorities within Wiltshire and Swindon cannot deal with it from within their own resources, mutual aid from neighboring Local Authorities may be sought.

Resources that the Local Authorities will provide are as follows:

- Human resources appropriate to the response to the incident.
  - Local Authority Managers.
  - Leisure centres and school premises for use as Emergency Rest Centres, Mass Casualty Centres and press briefing facilities.
  - In conjunction with MoD establishments provide Temporary Mortuary facilities.
  - Plant and equipment for repair, demolition and/or removal of waste.
  - Traffic control and highways equipment.
  - Transport for evacuees.
  - Catering through contract caterers.
  - Incident support and control vehicles.
  - Incident and Control Rooms at County, Borough and District centres.
-

## THE ENVIRONMENT AGENCY

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### **Role**

The Environment Agency is a public body committed to the protection of the environment from pollution including ground water, estuaries, coastal waters and rivers. Much of the Agency's work is of an emergency nature, responding to reports of pollution and predictions and warning of floods as well as taking operational action to minimise their effects.

The response to emergencies is guided by an Emergency Procedure Manual produced to a national format to be consistent in England and Wales (the Agency has no jurisdiction in Scotland and Northern Ireland). As well as a general section giving guidance on control and co-ordination, financial implications, media handling, external liaison, etc. there are resource lists and contacts to enable assistance to be contracted in quickly when needed.

Certain areas of risk have to be anticipated and site-specific plans produced for complexes like Control of Major Accident Hazards (COMAH) sites, nuclear installations, coastal pollution etc. These are prepared in conjunction with existing plans produced by Emergency Planning Departments. The emergency aspect frequently inter-links with other organisations, in particular the Fire Brigade.

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### **Responsibilities**

#### ***Calls***

Calls concerning pollution are received in the Regional Communications Centre (RCC) from the Emergency Services or public. In a protracted incident the Emergency Services will be given an ex-directory priority number.

#### ***Response***

The Regional Communications Centre informs an Authority Pollution Control Officer (PCO) who will make an initial assessment based on the information received. The Pollution Control Officer will normally attend the scene and liaise with the Emergency Services.

#### ***Action***

The Pollution Control Officer's priorities will be to:

- Trace and stop the source of pollution.
  - Take remedial action to prevent worsening of the situation.
  - Take samples of the pollutant.
  - Collect evidence as to cause.
-

**DETAIL**

The remedial action will depend on the type of pollution:

**Liquids**

The first concern is to stop liquid spreading or entering watercourses directly or via drains by forming bunds and/or by placing seals over drains.

**Oil**

If the pollution is oil or petrol, then booms will be placed across watercourses to hold it back. It will then be removed by the use of absorbents or suction.

**Organics**

If the pollution is by organic material the effect is de-oxygenation and the remedy aeration of the water by pump and spray to entrain air. The Environment Agency has some oxygen trailers but may need to request assistance from the Fire Brigade.

**Miscibles**

If the polluting chemical is miscible with water the only remedy is to remove the fish from the river in advance of the pollution using the Environment Agency electric fishing equipment.

**Abstractors**

Downstream users and abstractors will be informed.

**Charges**

The cost of pollution clean-up operations and restocking of watercourses is recovered, whenever possible, from the polluter who may also be prosecuted by the Environment Agency.

**Decontamination**

Ideally all contamination and decontamination run-off should be contained. However the Agency accepts that this will not always be practical for normal Fire Brigade operations and that life saving decontamination procedures must take precedence over other considerations at the scene of the incident. Nevertheless all steps that are reasonably practicable must be taken to contain contaminants.

Whilst the current practice of using a 2000:1 dilution factor is going to be acceptable in the vast majority of cases there are a few chemicals which could cause problems even below this dilution.

The Fire Brigade should therefore inform the Environment Agency as soon as possible when decontamination procedures are being used so that, the appropriate advice can be given. Consultations on decontamination are currently underway with the Fire Brigade Experimental Unit.

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## HOSPITAL SERVICES

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There are five major roles for receiving hospitals during an incident:

- To provide the hospital's clinical response.
- To liaise with the Ambulance Service, other hospitals and agencies in order to manage the impact of the incident.
- To maintain communications with relatives and friends of existing patients and those from the incident, the local community, the media and VIPs.
- To provide on-site medical care and advice in conjunction with BASICS qualified providers.
- To ensure the hospital continues all its essential functions throughout the incident.

The Ambulance Service is responsible for distributing casualties to and between receiving hospitals. Hospitals must keep the Ambulance Service informed of its immediate and continuing capacity to receive, admit and treat patients. This is particularly important for critical services that may be in short supply, such as intensive care and operating theatres.

A Control Team must be formed immediately to manage the whole hospital's response to the incident and will usually include:

- A Senior Clinician.
- A Senior Manager.
- A Senior Nurse.
- The team will appoint an overall Controller.

For the hospital to be able to manage the reception and treatment of patients effectively, it is important to ensure casualties arrive through one entrance. Decontamination and initial triage of self evacuated casualties should take place prior to entry into a hospital.

Hospitals need to decide in advance which wards are designated to receive patients. Keeping casualties from the incident together in the hospital will maximise the resources of available staff and help in the frequent review and management that patients are likely to need. Day surgery units may be suitable. The special needs of children must be considered.

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There must be arrangements for the reception of casualties contaminated following a chemical, biological, radiological or nuclear incident. The Hospital Control Team will decide how to deploy staff and volunteers into relevant teams. They will consider establishing the following teams:

- Triage Team.
- Resuscitation Team - Priority 1 patients.
- Serious Injury Team - Priority 2 patients.
- Walking Wounded Team - Priority 3 patients.
- Ward Teams.
- Theatre Team.
- Porterage Team.
- Mortuary Staff.
- Relatives' Team.
- Media Team.

Individual hospital departments will mobilise extra resources as needed, for example pathology, blood transfusion, imaging, Central Sterile Supplies Department (CSSD), engineers, switchboard, catering, Chaplaincy and so on. The Hospital Control Team may be asked to send a Mobile Medical Team (MMT) to the scene of the incident. The MMT will work closely with their Ambulance Service colleagues.

The Medical Incident Officer should, ideally, not be provided by the first receiving hospital. Arrangements do, however, exist locally. BASICS qualified doctors may be deployed where they have Medical Incident Officer qualifications. The hospital must plan with the Ambulance Service to ensure that appropriate transport arrangements exist for the Medical Incident Officer to be taken to the incident. The Medical Incident Officer must wear protective and identifying clothing.

---

### **Triage Categories**

- Triage.
- P1 Priority 1 in need of immediate intervention.
- P2 Priority 2 in need of admission and early intervention.
- P3 Priority 3 can wait for treatment. Usually the 'walking wounded'
- Dead.
- Action Cards.
- Control and management of hospital staff.

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Key staff must report to the Hospital Control Team. Other staff must report to designated departmental points in accordance with the hospital plan.

- Patient documentation.
  - Radios for hospital.
  - Patients' possessions.
  - Forensic evidence.
-

## PRIMARY CARE TRUSTS

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### Roles and Responsibilities

The Wiltshire and Swindon Primary Care Trusts have a duty to protect and promote the health of the public. The key roles and responsibilities of the Primary Care Trusts are:

- Assessing the impact on health and health services of every hazardous materials incident.
  - Where necessary, providing the strategic management of an incident which involves a range of health service providers.
  - Providing the health service input to the strategic management of a Major Incident involving a range of agencies.
  - Managing some incidents directly.
  - Ensuring that services of all providers of health care are supported to meet the needs of the local population.
  - Ensuring that Trusts have response plans and the necessary resources to put them into action.
  - Providing a strategic view on long-term threats.
  - Arranging epidemiological follow-up if necessary.
  - Liaise with other agencies and organisations with responsibilities for responding to an incident.
  - Issue public information statements concerning risks to public health and the effects of exposure.
  - Convene a post-incident review meeting and provide a report.
  - Notify the Avon, Gloucestershire and Wiltshire Strategic Health Authority (SHA)
-

## **WILTSHIRE HEALTH PROTECTION TEAM**

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The Wiltshire Health Protection Team provides specialist advice to the Primary Care Trusts and the Strategic Co-ordinating Group.

The key responsibilities are:

- To provide specialist clinical and technical advice to incidents and the planning process.
  - To provide specialist public health advice.
  - To co-ordinate epidemiological follow-up.
  - Membership of the Joint Health Advisory Cell to advise on public health advice at the Strategic Co-ordinating Group during an incident.
  - To co-ordinate Major Incidents involving non deliberate outbreak of disease.
- 

### **Implementation Procedure**

The Primary Care Trust on call Chief Executive or their deputy, on being alerted, will instigate the Primary Care Trusts' call procedure, which includes the Wiltshire Health Protection Team, on call doctors out of hours and/or the Consultant in Communicable Disease Control in hours.

## **SPECIALIST HEALTH ADVICE**

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### **Regional Director of Public Health Government Office of the South West**

The Regional Director of Public Health (RDPH) based within the Government Office of the South West has overall responsibility for health emergency planning with the day to day work being carried out by the Regional Health Emergency Planning Advisor (RHEPA).

The roles and responsibilities of the RDPH are to:

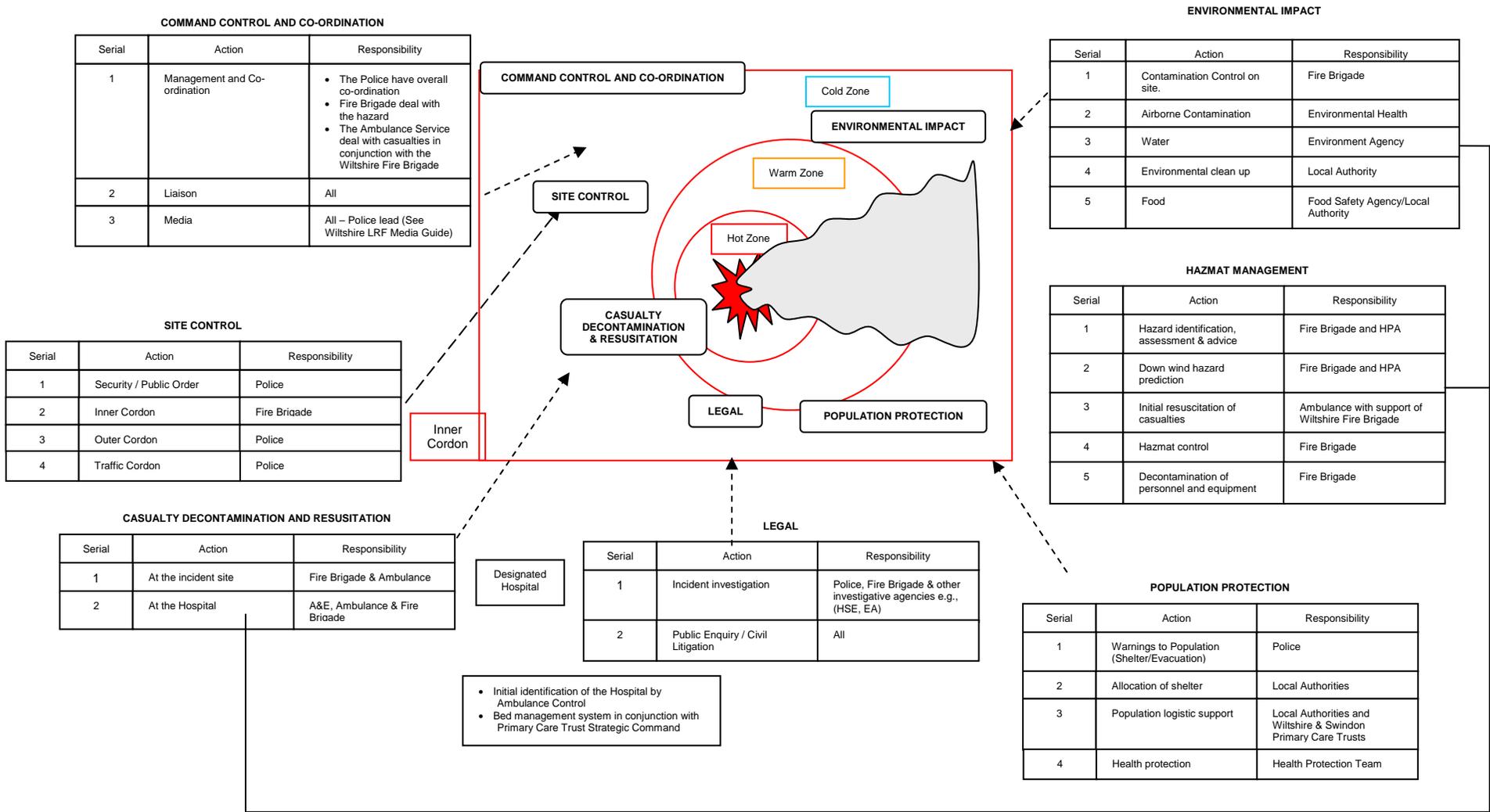
- Ensure the health services in the South West region have plans which are compatible with other Major Incident responder agencies and conform to national guidance.
- Provide advice on all aspects of emergency planning, including:
  - Hazard identification and risk assessment.
  - Preparation of plans.
  - Training.
  - Exercising plans.
  - Review and evaluation.
  - Provide regional co-ordination if needed.
  - Ensure a regional contribution to national contingency arrangements.

### **Regional Health Emergency Planning Advisor Health Protection Agency (South West)**

The RHEPA is employed by the Health Protection Agency and based at their regional head office at Stonehouse, Gloucester. The roles and responsibilities of the RHEPA is to:

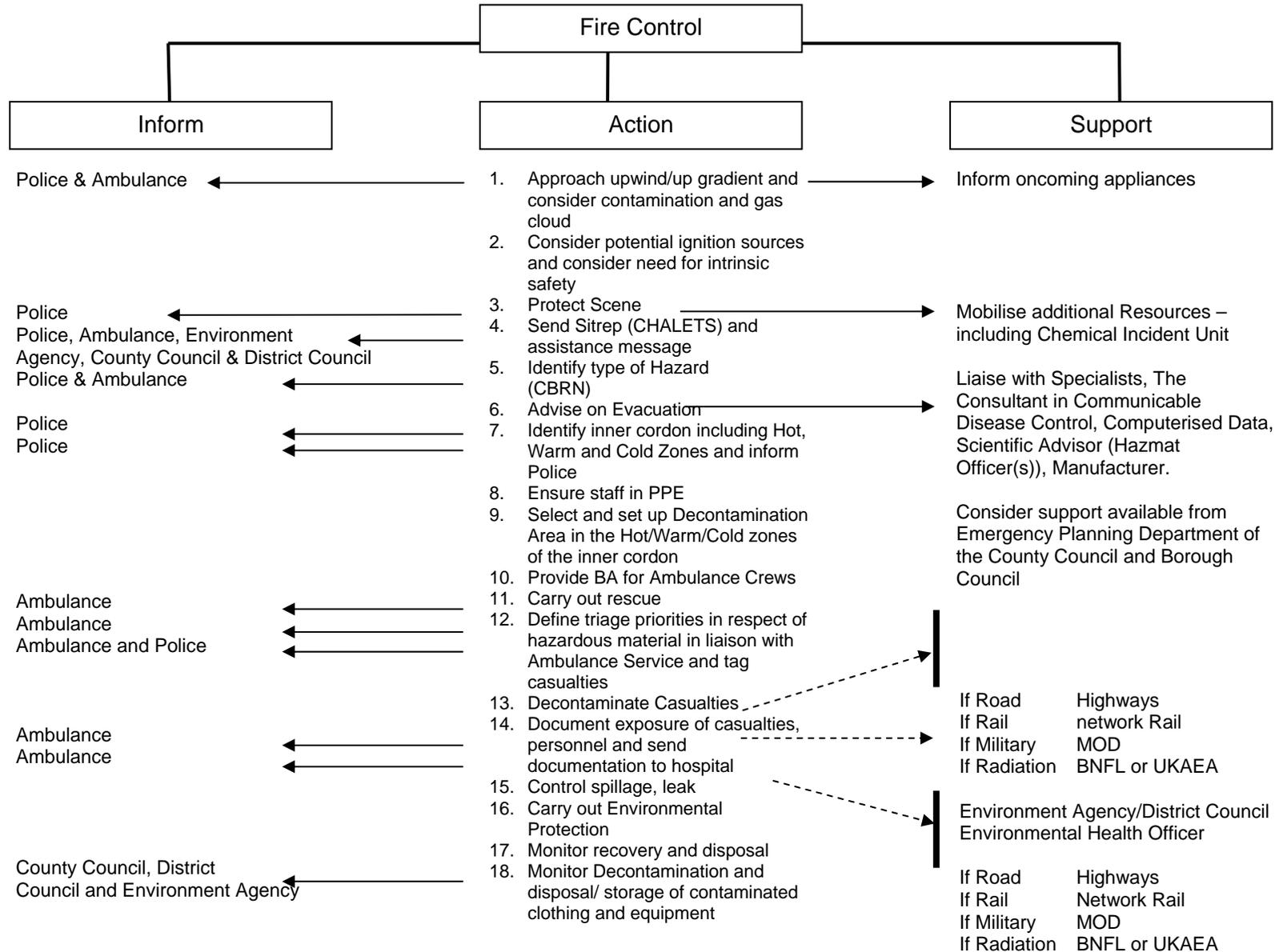
- Deal with all aspects of emergency planning and emergency response on behalf of the RDPH. This includes:
    - Identifying hazards across the region.
    - Planning with the NHS and other agencies.
    - Training.
    - Exercising plans.
    - Reporting.
    - Performance monitoring.
-

**Strategic Concept of Operation – HAZMAT Incidents**



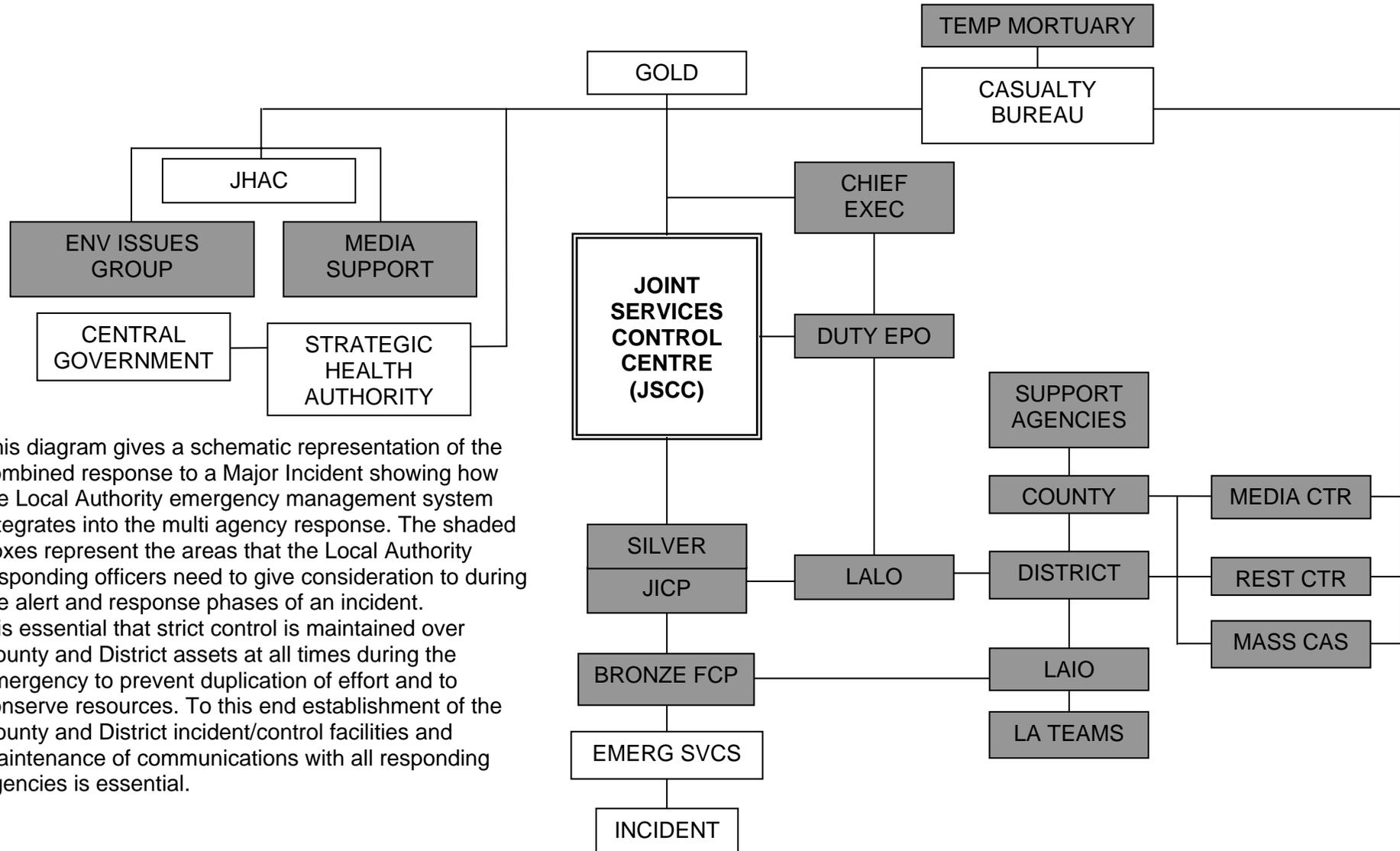


**Wiltshire Fire Brigade – Hazardous Substance Incident**



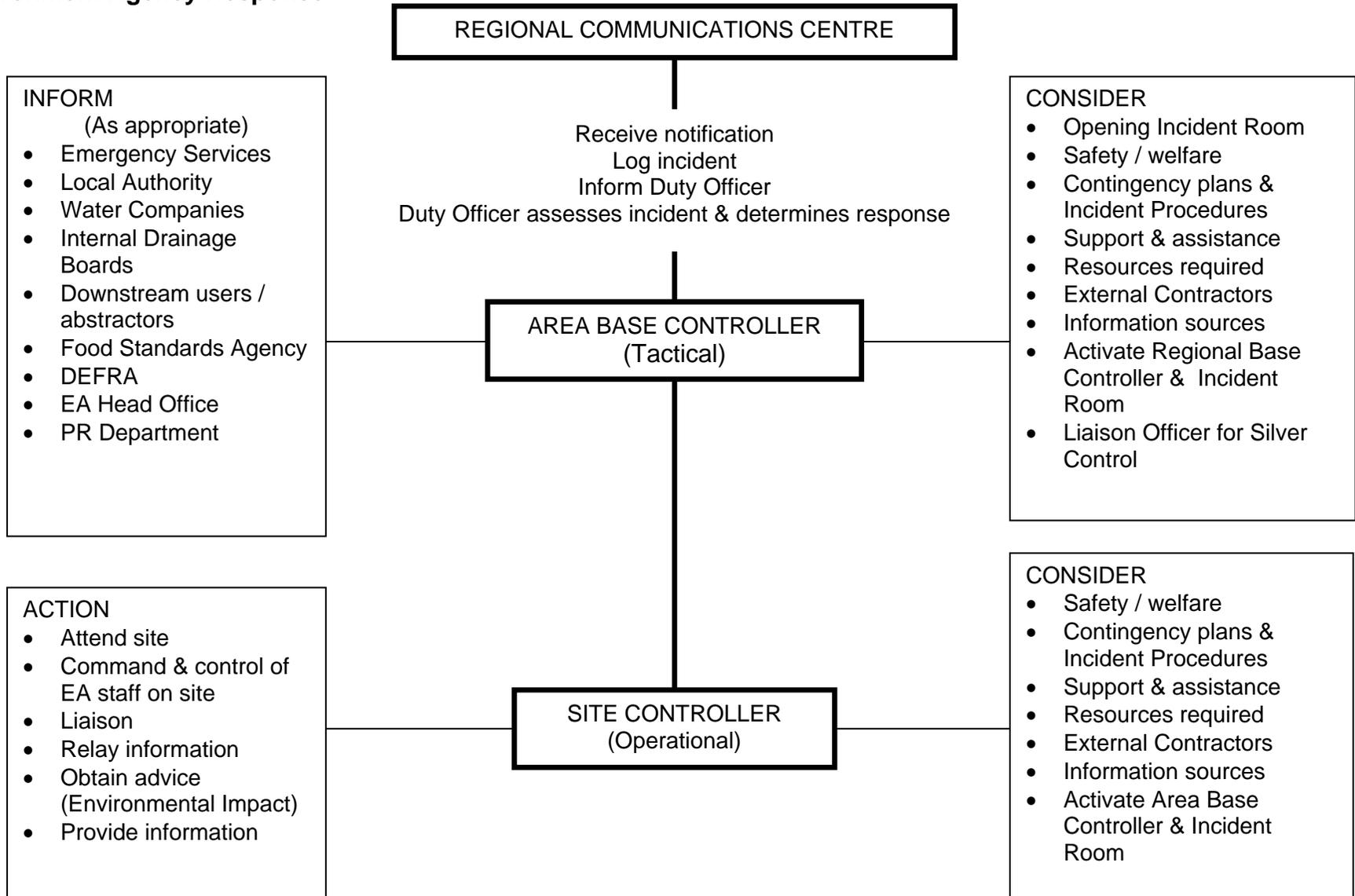


**The Local Authority Response**



This diagram gives a schematic representation of the combined response to a Major Incident showing how the Local Authority emergency management system integrates into the multi agency response. The shaded boxes represent the areas that the Local Authority responding officers need to give consideration to during the alert and response phases of an incident. It is essential that strict control is maintained over County and District assets at all times during the emergency to prevent duplication of effort and to conserve resources. To this end establishment of the County and District incident/control facilities and maintenance of communications with all responding agencies is essential.

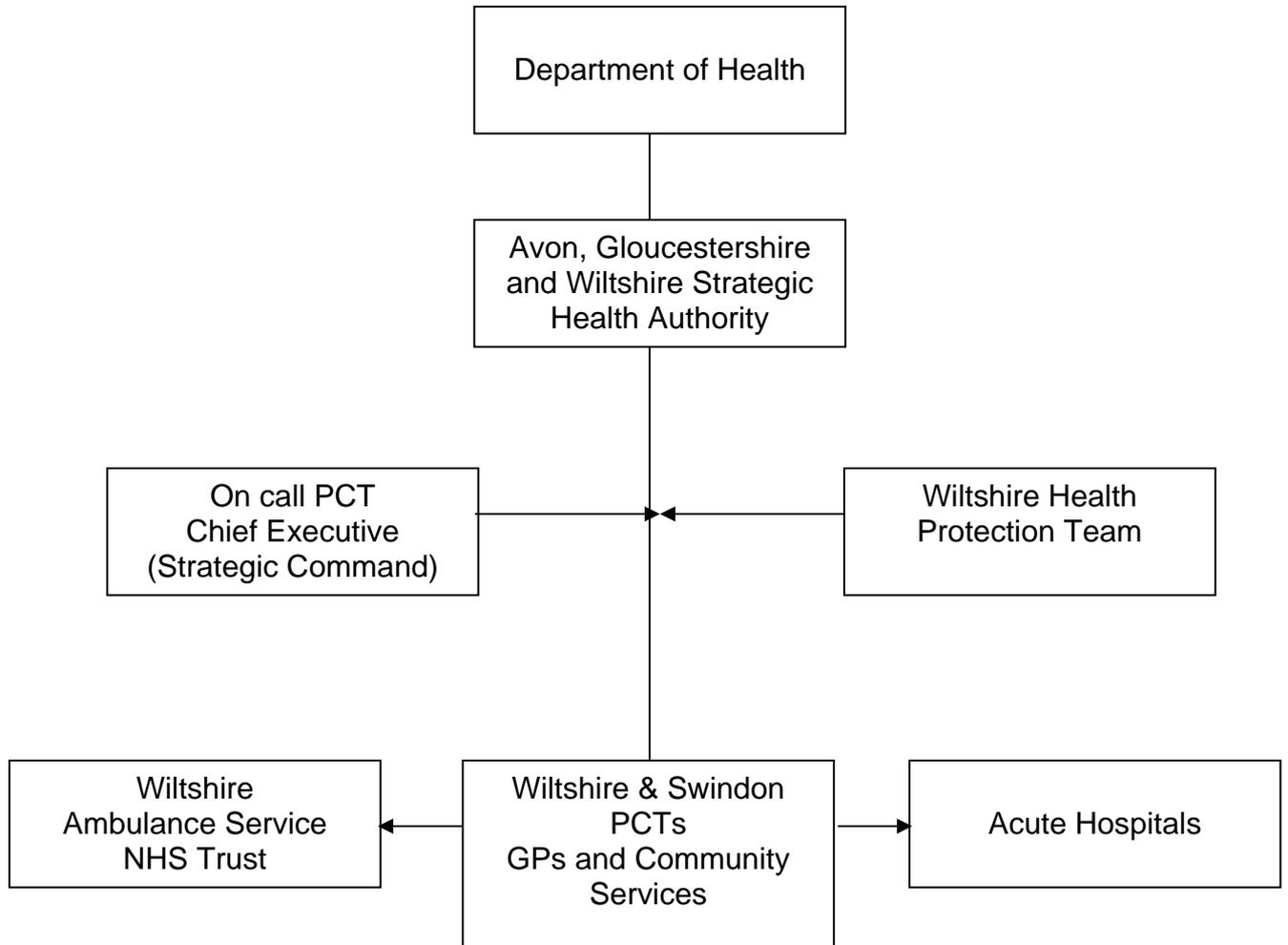
**The Environment Agency Response**



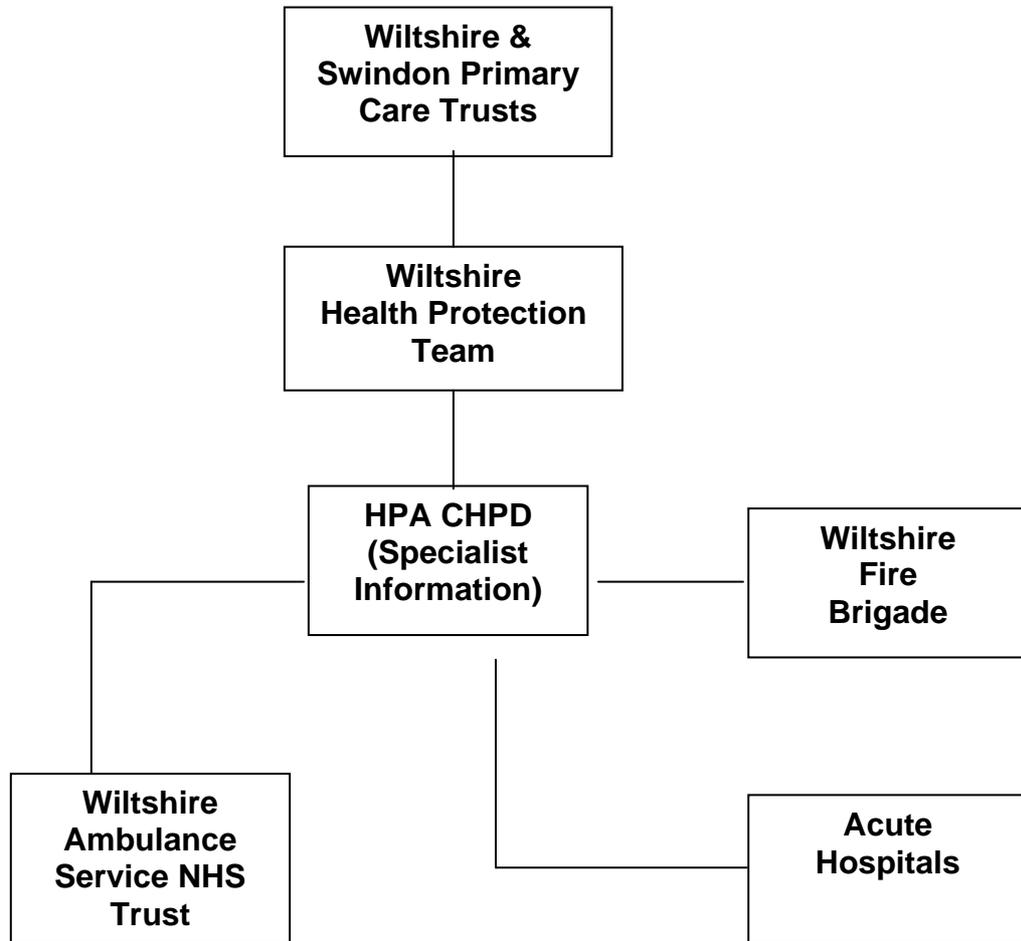
NATIONAL HEALTH SERVICE MANAGEMENT

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**Framework for Hazmat Incidents**



## HEALTH PROTECTION AGENCY CHEMICAL HAZARDS AND POISONS DIVISION



## THE MANAGEMENT OF CONTAMINATED CASUALTIES

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### Introduction

The key objective in all incidents where casualties have occurred is to save life. HAZMAT incidents are unique in that the contaminating material injuring the casualty may be also dangerous to the personnel rendering care. Thus a risk assessment needs to be taken in all these incidents to balance the need to provide care against the risk of injury to the Emergency Service personnel. This is further complicated if contaminated casualties, particularly with radioactive material, are then brought back to the A&E Department within the hospital. These patients, if still contaminated, then put the staff of the A&E Department at risk as well as potentially closing down this facility to the rest of the community.

The Fire Brigade will be responsible for the overall management of decontamination with the positive support of other Emergency Services and agencies.

The principle aim of this procedure is to aid rapid decontamination of casualties at the scene or as close as possible to the scene. This should result in an improved prognosis for the casualty, reduce the possibility of contaminating Emergency Service personnel and also receiving hospitals.

---

### Cordoning and Zoning

In order to create effective control of an incident where products may be harmful to both people and the environment it is essential that an effective cordoning system is deployed.

The Fire Officer in Charge will need to gather information in order that each zone is created correctly and easily identified.

In order to ensure the appropriate protection for the safety of personnel is worn, dependant on the risk within the area, zoning is undertaken within the well defined parameters detailed below.

The site will be cordoned into an inner and outer cordon, as with any Major Incident, but these cordons, for Health and Safety reasons will then be sub-divided into Hot, Warm and Cold Zones. The inner cordon is under the control of the Fire Brigade and personnel from the Fire Brigade and Emergency Services, who are suitably protected, will be allowed to operate within this area. The outer cordon is controlled by the Police to maintain a safe area to work for all participating agencies. The Hot and Warm Zones lie within the inner cordon and the Cold Zone forms part of the outer cordon.

The following definitions develop the explanation of the various zones ([see figure 1](#)).

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### Hot Zone (Areas of likely contamination)

Indicates the area where responders are likely to come into **direct** contact with the hazardous material. This may vary from a relatively small area, confined to an undamaged building or structure such as a tunnel, through to an area extending over several hundred metres if a release is large or in the open air. Personnel working in this area must have the minimum level of Personal Protective Equipment (PPE) of Chemical Protection Suit and Breathing Apparatus.

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### Warm Zone (Areas of possible contamination)

Indicates the area where there is a low risk of exposure to the hazardous material, or there is a possibility of cross contamination from casualties or equipment. Fire Brigade personnel working in this area should wear the same level of personal protective equipment as for the Hot Zone. Other Emergency Service personnel may also be operating in this zone and will wear their personal protective equipment, although a different type and standard may be appropriate for their work in this area. The outer limit of this zone may be considered as the **inner cordon**. The Fire Brigade is therefore responsible for the safety and protection of all personnel working within it.

---

### Cold Zone (Area of safety)

Indicates a sanitised area, which will be provided, to allow for emergency personnel to have such a designated area within which to establish control vehicles (See [Figure 2](#)). The outer limit will be the **outer cordon** and it will be the responsibility of the Police to establish and control this area.

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**Figure 1 Zones and Cordons**

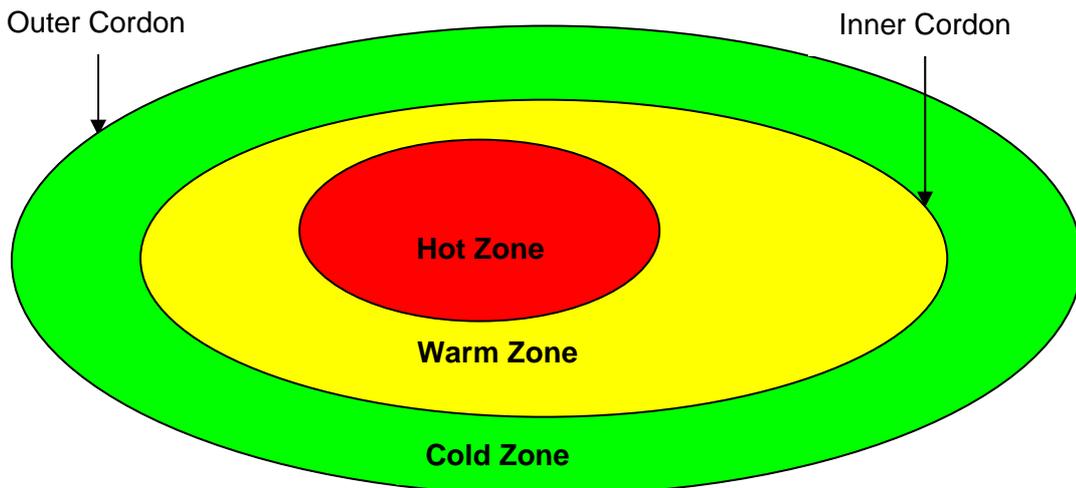
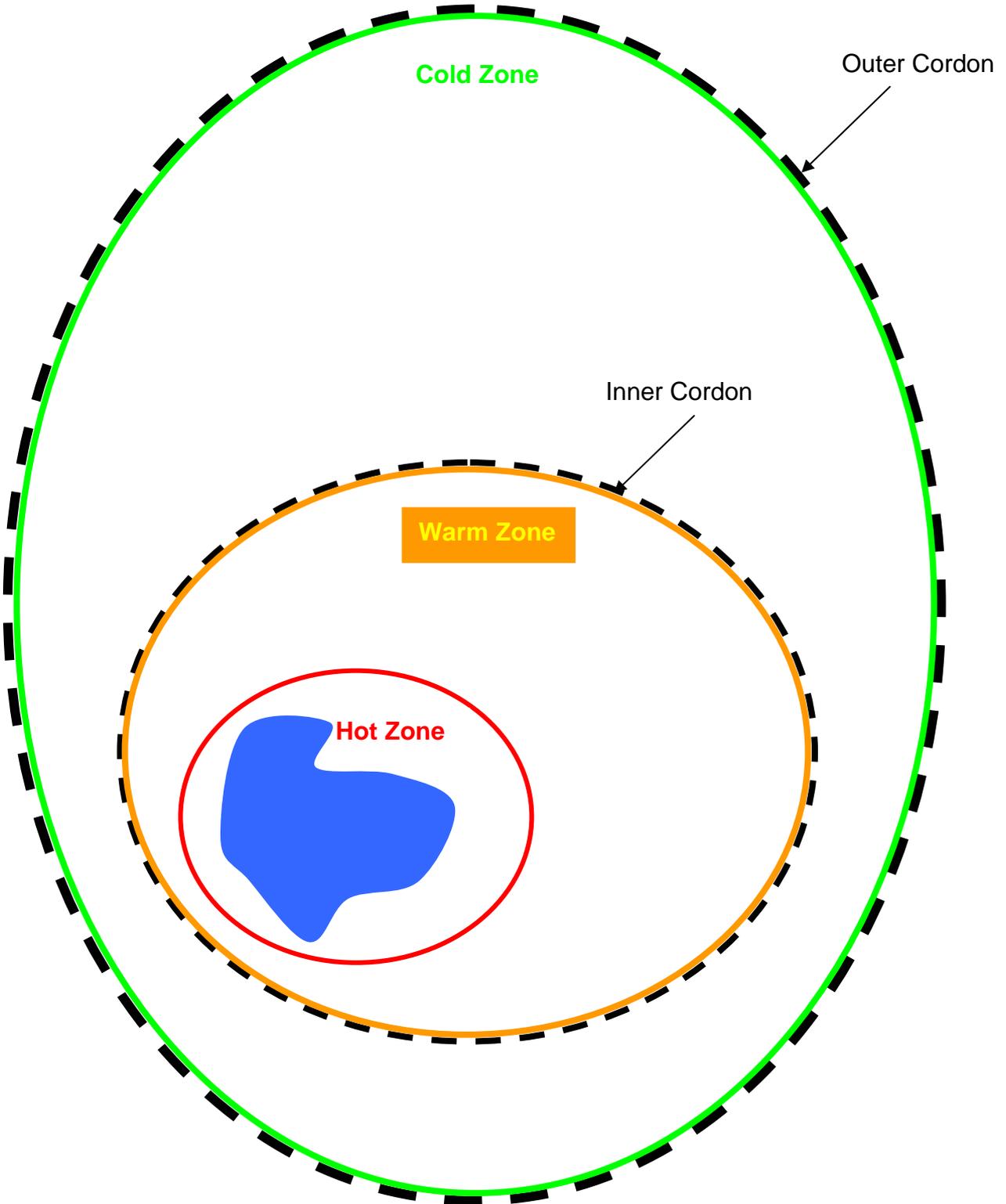


Figure 2 - The Zoning of a Hazardous Material Incident



## DECONTAMINATION

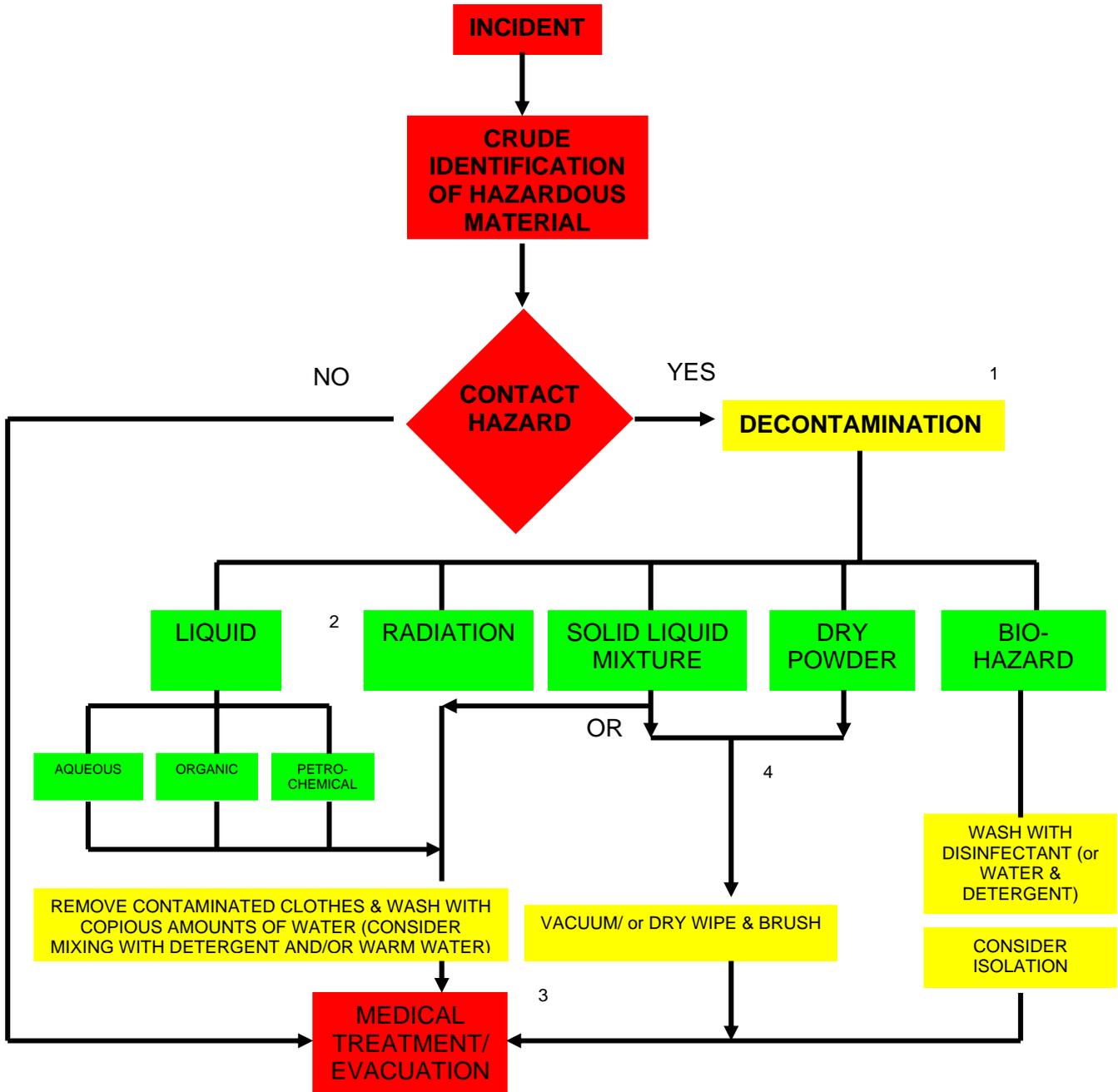
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After significant research the most effective decontaminant for almost all contaminants is a mixture of detergent and water - tepid if possible. Fullers Earth should be avoided on casualties who have burns or wounds due to the powerful white cell inhibition caused by the powder which delays wound healing. Particulate matter is best suctioned off. The decontaminant algorithm for all the possible contaminants is shown in [Figure 3](#). Any individual exposed to radiation must be screened prior to crossing the line from dirty to clean areas.

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**Figure 3 Decontamination algorithm for contaminants**



1. If a specific decontamination is available for the hazard then this should be used
2. Radiation contaminated casualties require specialist monitoring post decontamination
3. Casualties who require urgent resuscitation can be resuscitated and decontaminated simultaneously
4. Where powder is known to be compatible with aqueous washing methods

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### **Non Ambulant patients**

Non ambulant patients should be placed within the decontamination shelter and decontaminated as per the Rinse-Wipe-Rinse (R-W-R) principle with the face and upper airway being cleaned first. Basic airway control and resuscitation should occur during the decontamination process.

Following decontamination the patient should be transferred to clean equipment in the Cold Zone. Further necessary treatments can occur before and during transport to the receiving hospital.

#### ***Initial Rescue***

Initial rescue, in the Hot Zone, at the point of rescue is undertaken by the Fire Brigade.

This may include basic airway and spinal support. In exceptional circumstances specialist medical support can be called on if required, where suitable protection is available and under the direction of the Fire Brigade Incident Commander.

#### ***Triage/Strip***

The casualty is moved to a clearly marked triage area or decontamination facility where more sophisticated airway support may be given once the face has been decontaminated and contaminated clothes removed.

#### ***Decontamination***

Within the decontamination facility patients are directed along the non-ambulant or ambulant routes. The patient is placed on a lifting device and the contaminant removed using the Rinse-Wipe-Rinse principle in conjunction with the in built shower devices.

#### ***Resuscitation/Evacuation***

From the decontamination area the casualty is taken to the Warm/Cold Zone crossing over to a clean carrying device for onward evacuation.

|  |
|--|
| Only the clean casualty crosses the Warm/Cold Zone line, with the exception of the lifting device. All other equipment must stay within the contaminated area. |
|--|

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### **Ambulant patients**

Walking casualties and/or contaminated individuals are moved from the triage area to the casualty decontamination point where area specific decontamination and clothing removal takes place. This procedure will be conducted by Fire Brigade and/or Ambulance Service personnel. Due regard must be given to the modesty of individuals during decontamination. Ambulance Service personnel will assist in the provision of temporary clothing for decontaminated persons.

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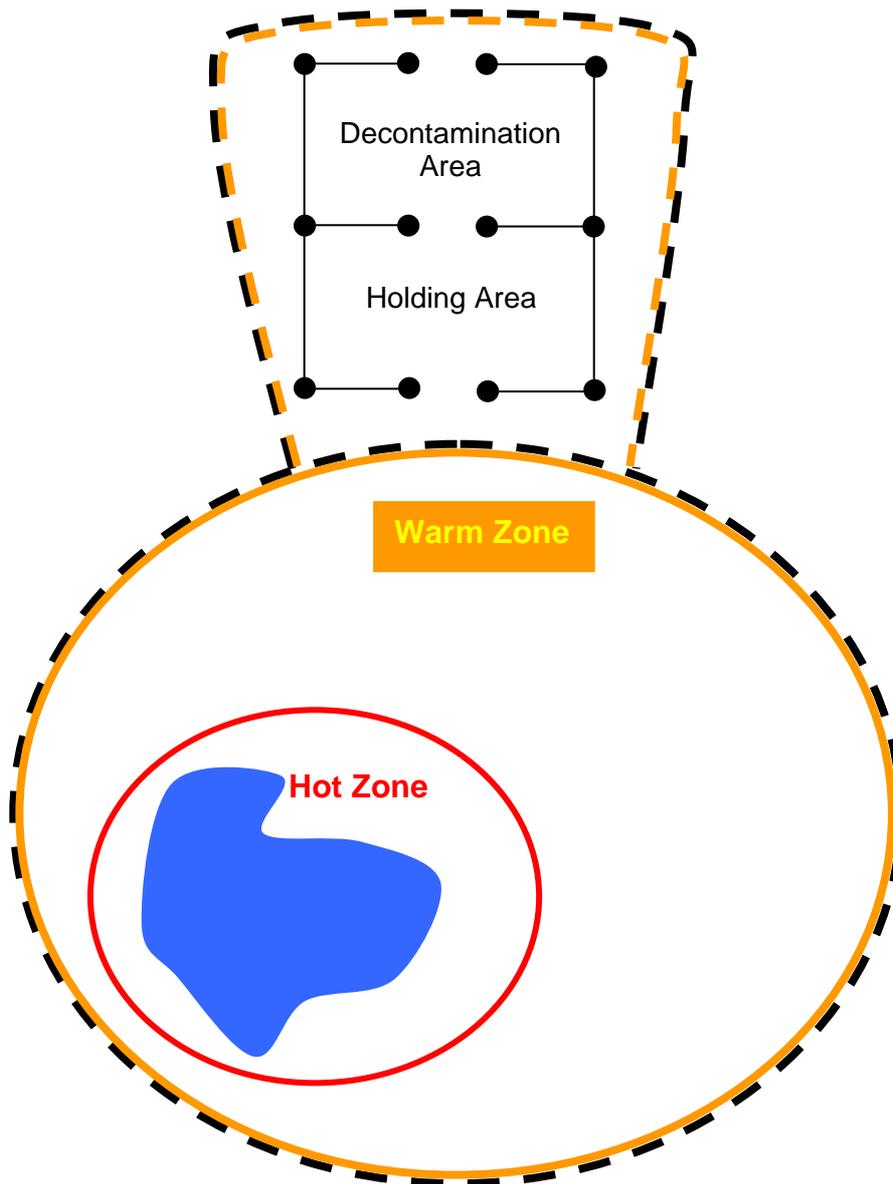
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### POSITIONING OF DECONTAMINATION AREA

The Decontamination Area should be set up outside of the warm zone. When completed the warm zone should be extended to encompass the Decontamination Area.

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**Figure 4** Diagram showing Incident and Decontamination Zones



### **Mass Decontamination**

During an incident the number of casualties involved could require the decontamination process to migrate to a mass decontamination procedure. The same procedures will be followed in these circumstances, with the Fire Brigade and Ambulance Services working in conjunction to decontaminate casualties, the Fire Brigade maintaining responsibility for the mass decontamination process.

Locally the process of Mass Decontamination has been developed from the Memorandum of Understanding agreed between the Department of Health and the Department for Transport and Local Regions. Wiltshire has progressed this agreement further in that Wiltshire Fire Brigade undertakes the responsibility for all decontamination issues, irrespective of numbers, based on the support of the Wiltshire Ambulance Service for casualty care.

The following diagram indicates how the process will work with the Warm Zone being extended on into the Cold Zone as previous indicated.

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Figure 5 Principles of Zones and Decontamination

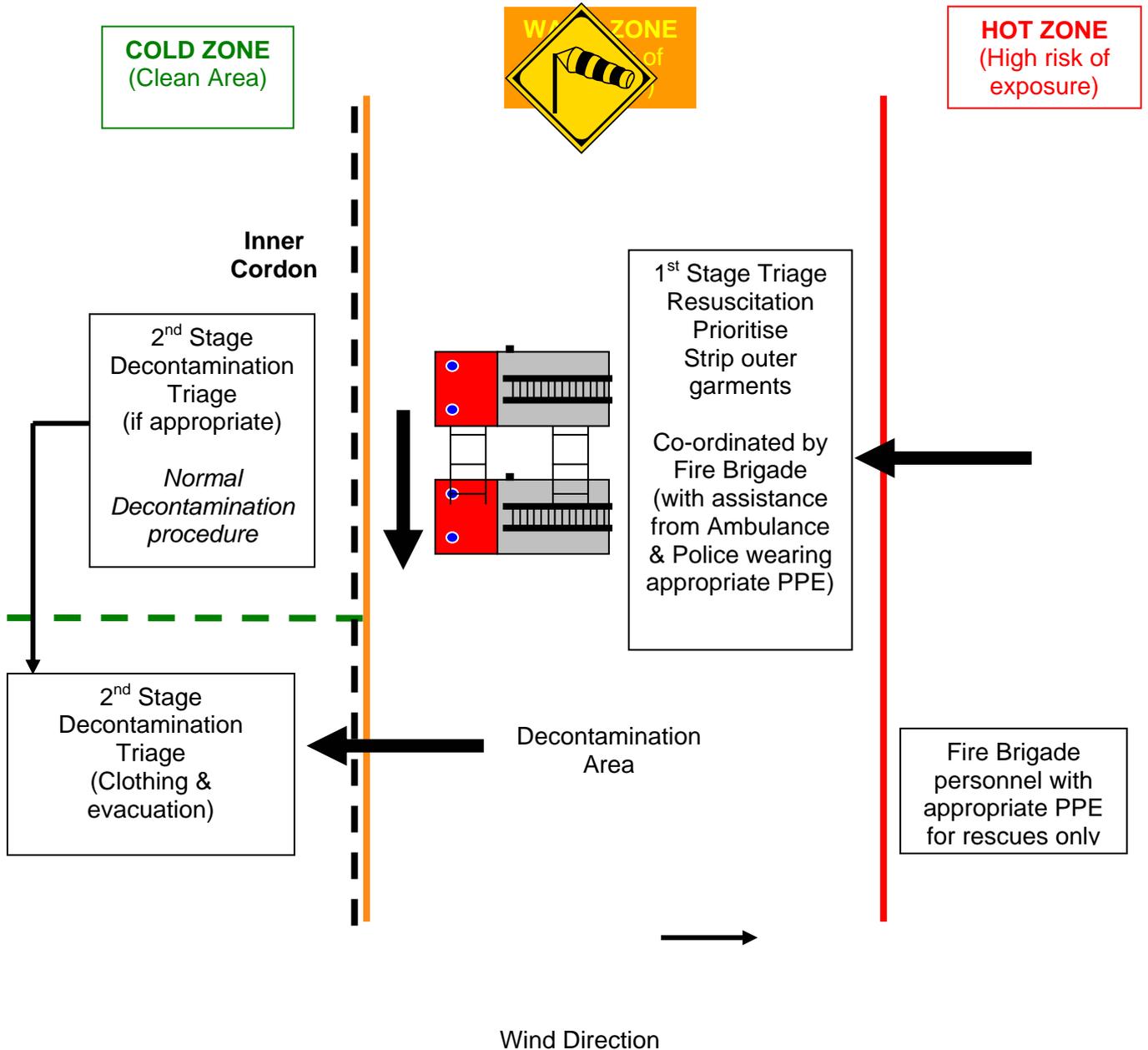
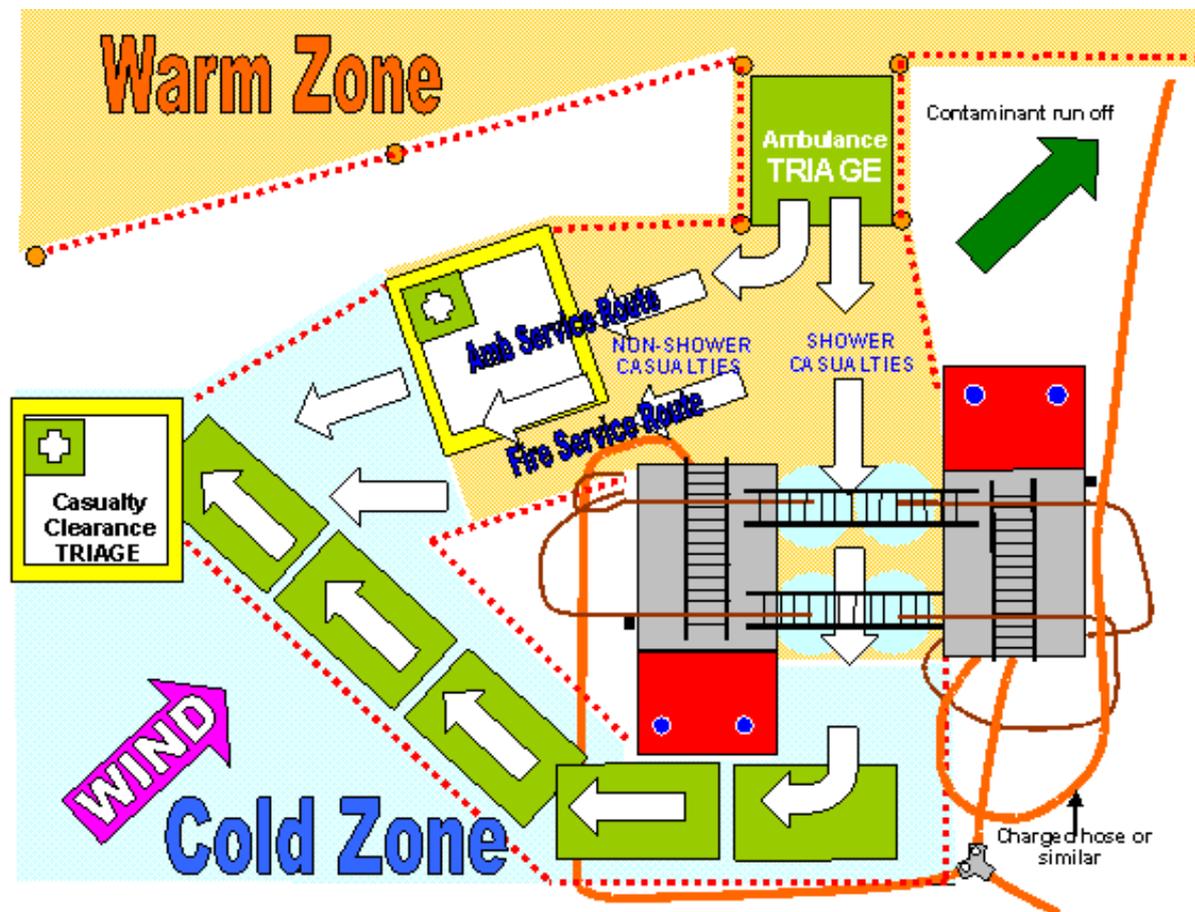


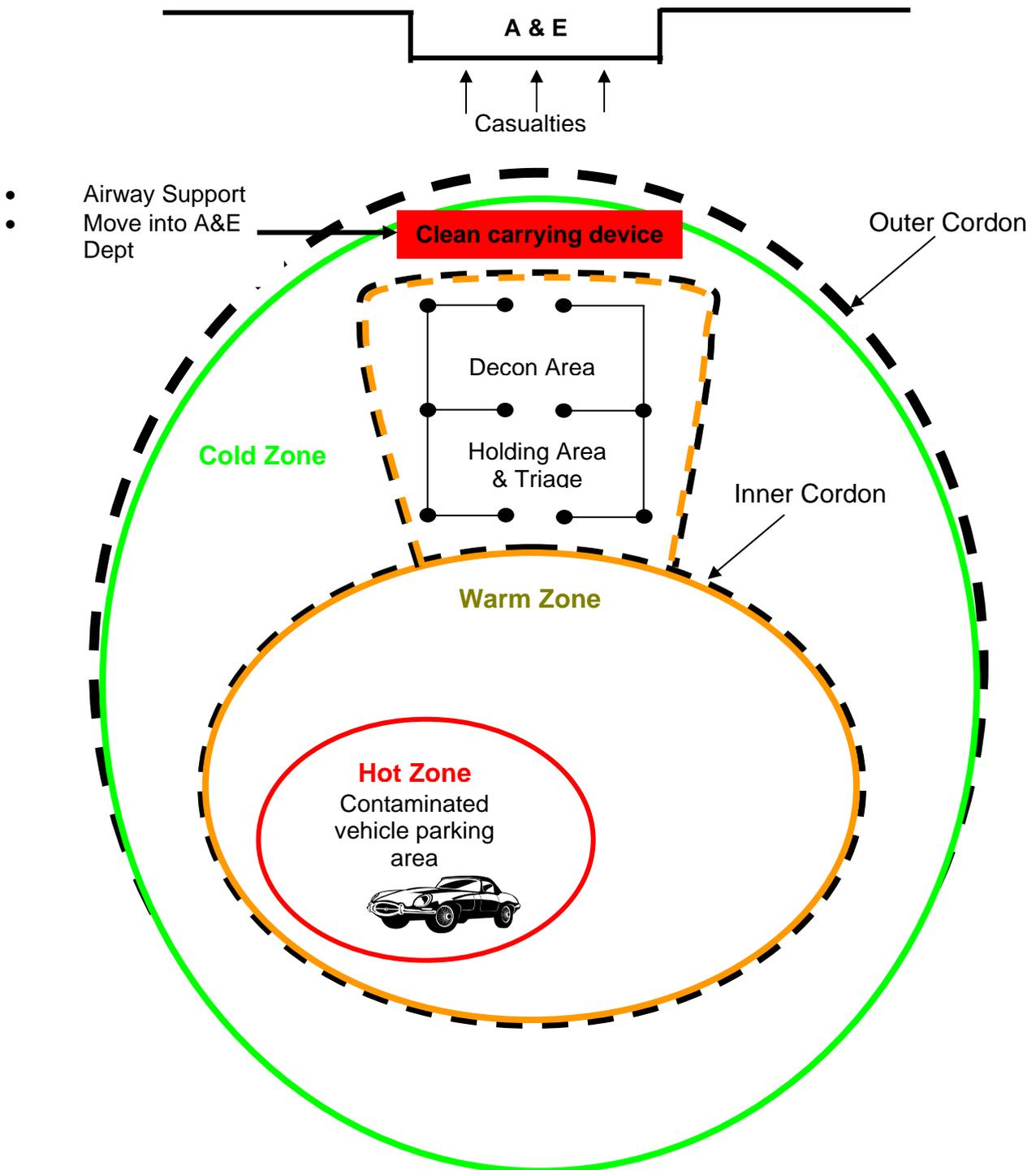
Figure 6 Mass Decontamination Layout



### Casualty handling outside the A&E Department

The concept is basically the same as the procedures explained previously and the concept is summarised in the diagram [Figure 5](#). It is the responsibility of the A&E staff in conjunction with the Wiltshire Fire Brigade to establish this facility for the decontamination of self evacuated casualties and to provide initial resuscitation, if required, and decontamination of these casualties.

**Figure 7 Decontamination layout outside A & E**



## DECONTAMINATION OF CASUALTIES

### *General Principles*

- The method described below may have to be varied by the team leader depending on the location and severity of the injury.
- Decontamination and treatment should be carried out simultaneously.
- Any cutting implements used in the decontamination process should be frequently cleaned.
- The guiding principle is 'Rinse - Wipe - Rinse' (R-W-R) unless safely removing dry decontaminants without risk of dispersal.

### *De-contaminant*

- To obtain the required 0.1% solution approximately 5ml of detergent should be added to 4.5 litres or one gallon of water. This equates to 13ml for 13 litres of water.
- The de-contaminant can be applied using a sponge and the contaminated area wiped and rinsed until clear.

### *Decontamination Procedure*

The casualty, on an orthopaedic stretcher or spinal board, is placed into the decontamination system; the procedure should not be delayed if the decontamination equipment is not available.

The facial area should then be decontaminated **before** any ventilation equipment is applied to the face. Once the airway is secured (should this be required) the remainder of the decontamination and resuscitation procedures can be carried out.

All items of clothing should be removed unless medically contra-indicated. The casualty is then completely decontaminated, working from head to toe removing all visible contamination. The 'Rinse-Wipe-Rinse' method, (clothing and valuables must be retained in a sealed and labelled plastic bag and the Police should be consulted before disposal so that the evidential value can be assessed). If required for evidential purposes further bagging (up to triple bagging) will be required.

When decontaminated, the casualty should be lifted over the Warm/Cold Zone line onto a clean stretcher to complete the process (i.e. no contaminated clothing, material or equipment will be carried over the line and the orthopedic stretcher or spinal board used in decontamination should be passed back to avoid cross contamination).

Once all decontamination has been completed any contaminated equipment should either be decontaminated or identified for disposal. Any contaminated water used in the process should be collected for subsequent removal by an appropriate contractor identified by the environment agency.

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**NOTES FOR COMPLETION**

This form will not normally be required for personnel who remained in a safe area remote from the fire, spillage, gas cloud etc., or those afforded *adequate protection* by a Chemical Protection (CP) or Gas Tight (GT) Suit.

A form will be completed for each member of staff believed to have been directly exposed to a hazardous material. The respective Incident Officer will ensure the form is completed at the scene or, if this is not practicable, as soon as possible thereafter, with the proviso that ***the white and green copies must be in the possession of the individual concerned before going off duty***, for use as follows :

The **white** copy is to be carried by the individual for 7 days (21 days for a bio-hazard) as it may provide medical authorities with vital information in case of sudden illness, and alert them to the possibility of other personnel being affected.

The **blue** copy, also to be carried by the individual, is for information and retention by medical staff if required.

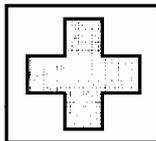
The **pink** copy must be forwarded to reach the destination shown within 4 days:

- Fire Brigade Personnel - The Hazmat Staff Officer, Fire HQ
- Police Officers - The Health & Safety Officer, Police HQ
- Ambulance Personnel - The Administration/Health & Safety Office

In the event of the individual requiring Medical Treatment for acute illness or loss of consciousness resulting from the absorption of any substance by inhalation, ingestion, or through the skin, the Health & Safety Executive must be informed as soon as possible (Telephone 01256 404000).

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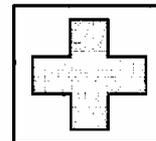
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