Recognition of Life Extinct (ROLE) by Ambulance Staff

The Joint Royal Colleges Ambulance Liaison Committee (JRCALC)

Preamble

1. JRCALC published the paper 'Recognition of Death by Ambulance Personnel'[1] in 1996, authored by Drs P Baskett, J Fisher and A Marsden based upon earlier work by Marsden et al. [2]

2. Since then a number of modifications to the use of the guidelines in that paper have been introduced on a local basis, and a number of questions raised about these and other changes. Currently there is no national consensus on the application of the guidelines[3] and evidence that practice differs considerably in different parts of the country.

3. A new set of guidelines was proposed by The Clinical Guidelines Committee of JRCALC and published electronically in the 2001 version of the National Guidelines, however, these proposals have not found widespread acceptance.

4. This document is the product of a new subcommittee set up by JRCALC in 2002 to revisit the existing guidance and the queries that have been raised about them. This discussion document is intended to form the basis of a new set of nationally accepted guidelines which will be published after their widespread discussion and consultation. We have attempted to answer the queries raised since publication of the original guidelines in 1996 and also to go further in defining the circumstances under which resuscitation is undertaken by ambulance personnel in the patient suffering from cardiopulmonary arrest, as well as addressing the care provided for their relatives and close friends who may be present.

5. The members of the Subcommittee were:

   Dr Michael Ward, Consultant Anaesthetist, Med Director Oxfordshire Ambulance NHS Trust
   Dr Michael Colquhoun, Senior Lecturer UWCM, Cardiff, Medical Director Welsh Ambulance Service
   Mr Andrew Marsden, Medical Director Scottish Ambulance Service
   Mrs Eve Knight, Lay Member, British Cardiac Society

6. Consultation on this document has included taking the views of members of the Lay Public, The Association of Police Surgeons, The Coroners Committee in addition to wide discussion with Ambulance Services, their staff and Medical Advisors. It is recognised by the subcommittee that the introduction of these new

guidelines will require a training commitment on the part of ambulance services, but we do not believe that the knowledge base or skills required is beyond the abilities of current ambulance personnel.

7. This document will address the following subjects

    a. When NOT to start resuscitation
    b. When to discontinue attempted resuscitation
    c. What to do after death has been diagnosed

8. It is recognised that no guidelines can cover every situation that might arise, but it is intended that they should provide adequate guidance for the great majority of circumstances. It has been our concern to express the principles of treatment in as clear a way as possible. It is recognised that the details of their application by individual Ambulance Services may require definition in the light of local circumstances, geography and resources.

9. These guidelines are applicable to all age groups. Our original remit was to consider only recognition of death in adults, the assumption being that, with the exception of those cases in which death is obvious, ambulance staff would always make vigorous resuscitation attempts in children. On reflection however, after considered discussion, that view has been modified as nothing in the guidelines cannot be applied equally to children and young people.

Introduction

10. We would reiterate the introductory statements of the original paper which stated:

    a. **In patients with cardio-pulmonary arrest, vigorous[*] resuscitation attempts must be undertaken whenever there is a chance of survival, however remote**.

    b. Nevertheless, it is possible to identify patients in whom there is absolutely no chance of survival, and where resuscitation would be both futile and distressing for relatives, friends and healthcare personnel and where time and resources would be wasted in undertaking such measures.

11. Additionally we wish to add that

    If a Family Practitioner or Third Party (relative or close friend) insists on resuscitation, then resuscitation should be attempted

[*] The term ‘rigorous’ was used in 1996. We feel that vigorous is now a better adjective.

Conditions Unequivocally Associated with Death

12. All the conditions, listed below, are unequivocally associated with death in **all** age groups

    - Decapitation
    - Massive cranial and cerebral destruction
    - Hemicorporectomy (or similar massive injury)
    - Decomposition/Putrefaction
    - Incineration
    - Hypostasis
    - Rigor Mortis
      In the newborn Fetal Maceration is a contraindication to attempted resuscitation

13. Details

    a. Decapitation: self evidently incompatible with life

    b. Massive cranial and cerebral destruction: where the injuries are considered by the crew member to be incompatible with life

    c. Hemicorporectomy (or similar massive injury): where the injuries are considered by the attendant to be incompatible with life

    d. Decomposition/Putrefaction: where tissue damage indicates that the subject has been dead for some hours, days or longer

    e. Incineration: the presence of full thickness burns with charring of greater than 95% of the body surface

    f. Hypostasis: is the pooling of blood in congested vessels in the dependant part of the body in the position in which it lies after death. †

    g. Rigor Mortis: the stiffness occurring after death from the post mortem breakdown of enzymes in the muscle fibres‡

† See Guidance Note 1

‡ See Guidance Note 2

Where Resuscitation should not be continued once the facts of the arrest are known

14. Following arrival and the recognition of pulselessness and apnoea, the airway should be opened, ventilation and chest compression commenced whilst the facts of the collapse are ascertained.

15. In the following conditions resuscitation can be discontinued:

    - Submersion for longer than 1 hour (**NB** Note submersion NOT immersion)[4] See guidance Note 3 at end

    - The presence of a DNAR (Do Not Attempt Resuscitation) order or a Living Will that states the wish of the subject not to undergo attempted resuscitation (See #19 Below)

    - In situations when **ALL** the following exist together
        - > 15 minutes since the onset of collapse
        - Non-shockable Rhythm on an AED
        - No bystander CPR prior to arrival of the Ambulance
        - The absence of any of the exclusion factors on the flowchart
        - Asystole (Flat Line) for >30 seconds on the ECG monitor screen

16. The use of the flow chart shown as Appendix A is recommended.

When to terminate Resuscitation attempts

17. Where the patient remains in asystole despite full ALS procedures for > 20 minutes the resuscitation attempt may be discontinued

18. Removal of Endotracheal Tubes and/or indwelling cannulae should be in accordance with local protocol.

Do Not Attempt Resuscitation (DNAR)/ Living Wills[5]

19. Ambulance staff should initiate resuscitation unless:

    a. A formal DNAR[6] order is in place, either written and handed to the ambulance crew or verbally received and recorded by Control from the patient's attendant requesting the ambulance providing that
        1. the order is seen and corroborated by the ambulance crew at pick up
        2. the decision to resuscitate relates to the condition for which the DNAR order is in force: resuscitation should not be withheld for coincidental conditions,

    b. A known terminally ill patient is being transferred to a palliative or terminal care facility (unless contrary instructions have been issued or the patient and/or carers express a specific wish for resuscitation to be attempted). Such information may be passed to and recorded by Ambulance Control as above.

    c. A living will has been accepted by the medical attendants to signify a DNAR order.

    d. Patients may have a "living will" or "advance directive" although it is not legally necessary for the refusal to be made in writing or formally witnessed. This specifies how they would like to be treated in the case of future incapacity. Case law is now clear that an advance refusal of treatment that is valid, and applicable to subsequent circumstances in which the patient lacks capacity, is legally binding. An advance refusal is valid if made voluntarily by an appropriately informed person with capacity. Staff should respect the wishes stated in such a document.

20. In a pre-hospital emergency environment, there may be situations where there is doubt about the validity of an advance refusal. If staff are not satisfied that the patient had made a prior and specific request to refuse treatment, they should continue to provide all clinical care in the normal way.

Action to be taken after death has been established

21. In the light of the fact that the earlier guidelines have been in use by a number of Services for almost 10 years, we no longer believe that it is necessary for a medical practitioner to attend to confirm the fact of death. Moreover, there is no obligation for a GP to do so when requested to attend by ambulance control.

22. Services should be encouraged, in conjunction with their coroner's service (or Procurator in Scotland), to develop a local procedure for the handling of the body once death has been diagnosed by Ambulance personnel.

23. As a guide the attached procedure (Appendix B) and record form (Appendix C) are suggested:

24. We further propose the adoption of a locally approved Leaflet for handing to bereaved relatives. A suggested format is given as Appendix D.

Joint Royal Colleges Ambulance Liaison Committee
March 2003

Guidance Note 1

Initially hypostatic staining may appear as small round patches looking rather like bruises but later these coalesce to merge as the familiar pattern. Above the hypostatic engorgement there is obvious pallor of the skin. The presence of hypostasis is diagnostic of death – the appearance is not present in a live subject. In extremely cold conditions hypostasis may be bright red in colour, and in carbon monoxide poisoning it is characteristically 'cherry red' in appearance.

Guidance Note 2

Rigor Mortis occurs first in the small muscles of the face, next in the arms, then in the legs (30 minutes to 3 hours). Children will show a more rapid onset of rigor because of their large surface area/body mass ratio. The recognition of rigor mortis can be made difficult where, rarely, death has occurred from tetanus or strychnine poisoning. It is stated that the diagnosis of rigor mortis can be confirmed by firmly pressing on a joint such as the knee, when the rigor mortis will be abolished and the joint becomes flaccid

In some the rigidity never develops (infants, cachectic and the aged) and in some it may become apparent more rapidly (in conditions in which muscle glycogen is depleted); exertion (that includes struggling), strychnine poisoning, local heat (from a fire, hot room or direct sunlight))

Rigor should not be confused with cadaveric spasm (sometimes referred to as *instant rigor mortis*) which develops immediately after death without preceding flaccidity following intense physical and/or emotional activity. Examples are: following death by drowning, falls from heights. In contrast with true rigor mortis only one group of muscles is affected and NOT the whole body. Rigor mortis will develop subsequently.

Guidance note 3

Submersion victims

With thanks to Dr F StC Golden for his advice in this specialist area

Attempting to predict criteria for commencing resuscitative efforts on victims found in water is fraught with danger because of many interacting factors that may contribute to extending accepted anoxic survival times. Chief among these is the heat exchange that occurs in the lungs following aspiration of water.

Should the water temperature be very cold, it will rapidly cool the blood in the pulmonary circulation, which in turn selectively cools the brain for as long as a viable cardiac output continues. Should brain temperature be rapidly cooled to a degree where protection from hypoxia/anoxia is possible (circa 20°C) in the 70 seconds or thereabouts before cardiac failure occurs, then the chances of successful resuscitation are considerably enhanced even if cardio respiratory arrest has been present for an hour or more. For this outcome to be likely, the water temperature has to be near freezing, and usually, but not necessarily, the body mass relatively small. Hence the majority of the accounts of successful resuscitation after submersion pertain to small children being rescued from 'ice water'.

*It would seem prudent that resuscitative efforts **should** be made on:*

1. *Those with a witnessed **submersion** time of 10-15 minutes or less, even though they appear to be dead on rescue.*

2. *All those where there is a possibility of their being able to breathe from a pocket of air while underwater.*

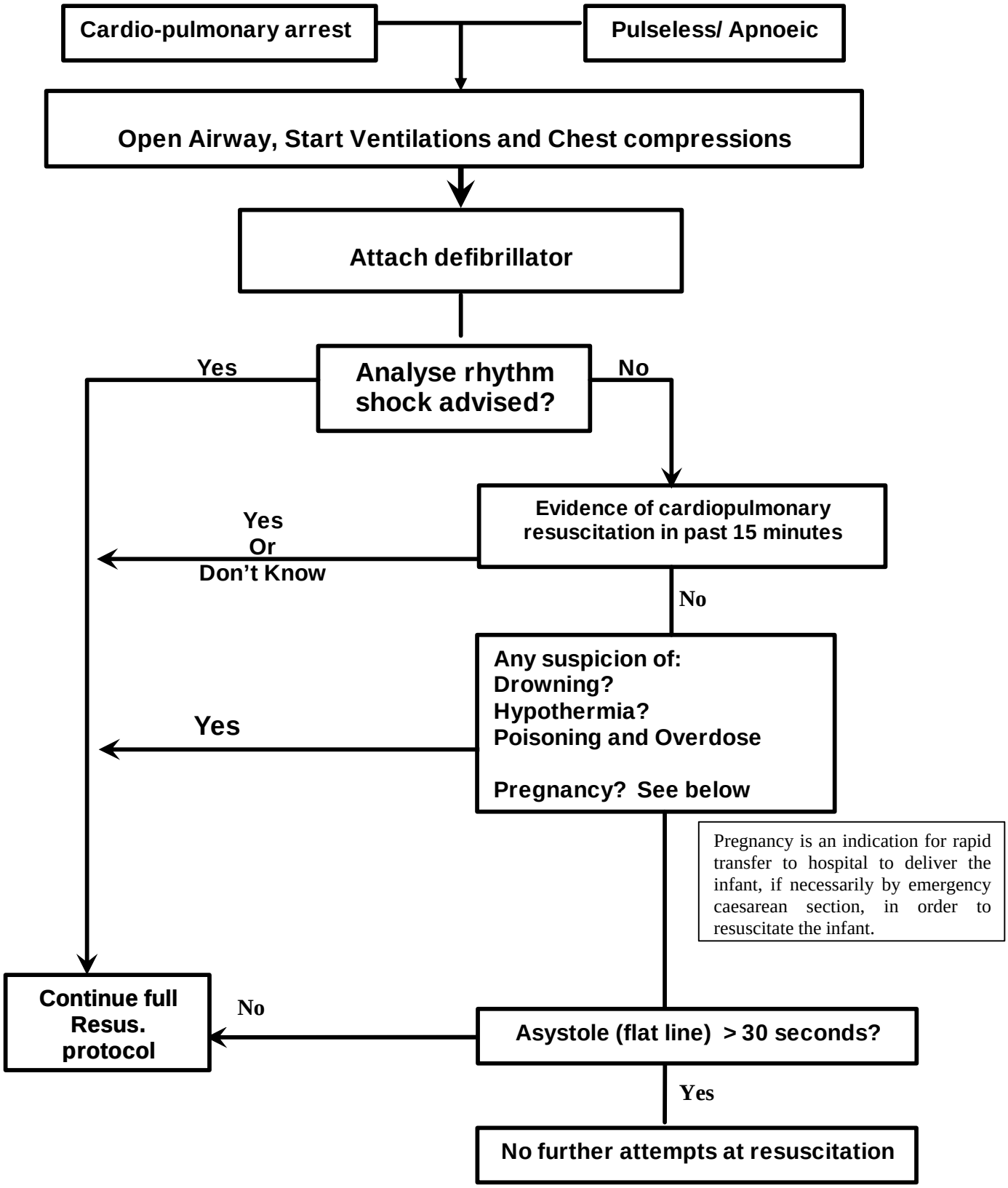
3. *All those submerged for up to an hour in ice water and for longer (1½h) in small children.*

4. *Everyone who is showing any signs of life initially on rescue.*

5. *Those whose airway has been only intermittently submerged for the duration of their immersion, e.g. those wearing lifejackets but in whom the airway is being intermittently submerged, provided the body still has a reasonably fresh appearance.*

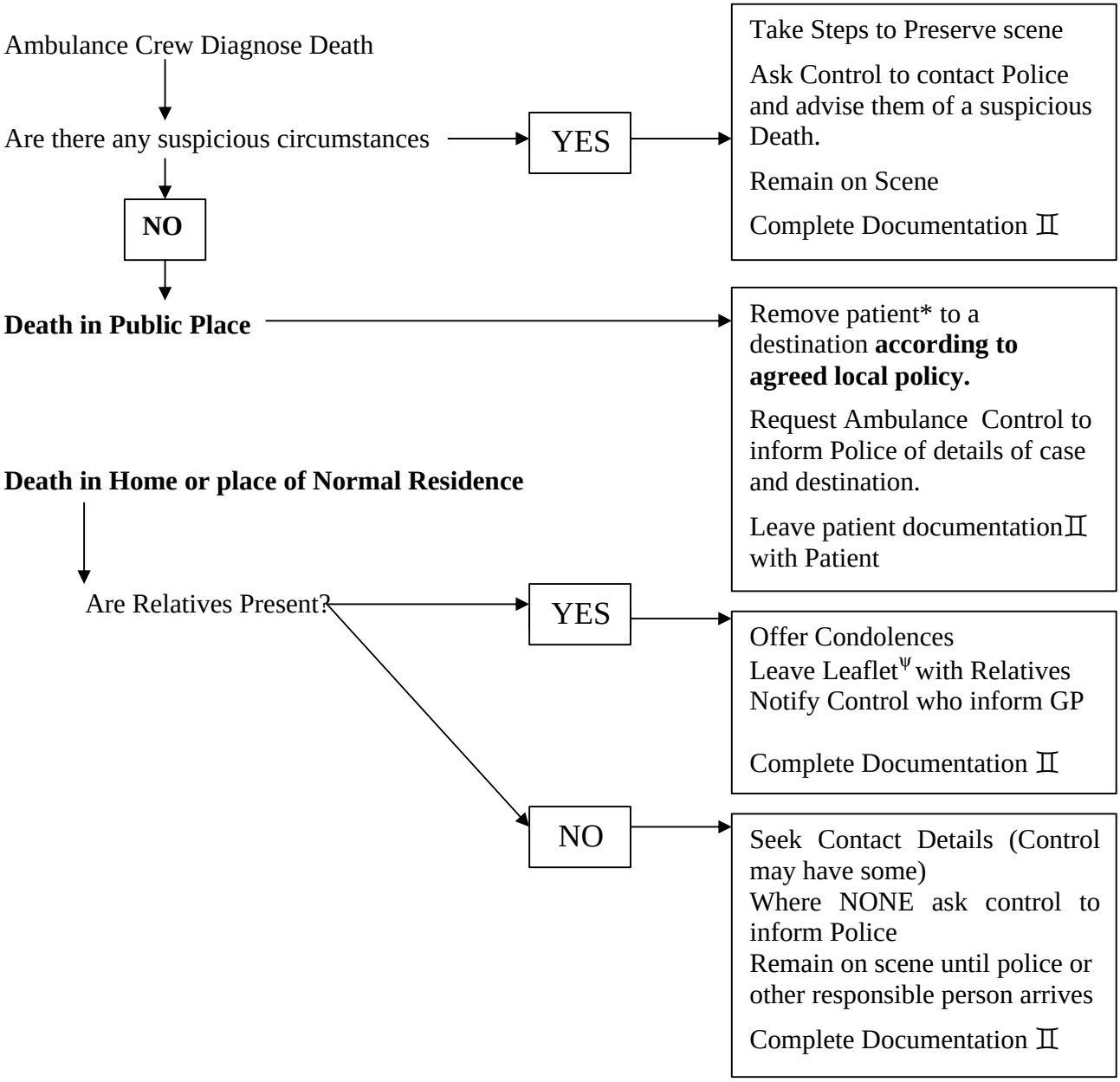
Resuscitative efforts are unlikely to be successful in those submerged for periods exceeding 15 minutes with the exception of those in categories 2-5 above.

Appendix A


Cardio-pulmonary arrest
Pulseless/ Apnoeic
Open Airway, Start Ventilations and Chest compressions
Attach defibrillator
Analyse rhythm shock advised?
Yes
No
Evidence of cardiopulmonary resuscitation in past 15 minutes
Yes
Or
Don't Know
No
Any suspicion of:
Drowning?
Hypothermia?
Poisoning and Overdose
Pregnancy? See below
Yes
Pregnancy is an indication for rapid transfer to hospital to deliver the infant, if necessarily by emergency caesarean section, in order to resuscitate the infant.
Continue full Resus. protocol
No
Asystole (flat line) > 30 seconds?
Yes
No further attempts at resuscitation

Appendix B

Actions to be taken after Diagnosis of Death



*The Ambulance Service has a responsibility to remove the patient from public gaze Operational policy will be agreed locally with Police and Coroner's services

ⅡA suggested example of Documentation is attached as Appendix C

ψ A suggested example is attached as Appendix D

Appendix C

Diagnosis of the Fact of Death
CONFIDENTIAL

Date and Time PRF Number Patient's Name Age or DOB Patient's Address GP Name and Address	

- ❑ Patient in Collapsed state with no signs of life •
- ❑ Condition incompatible with life (state)……...

OR

- ❑ DNAR or Living Will Validated •

OR

- ❑ No evidence of CPR in past 15 minutes •

AND

- ❑ No signs of
  - DROWNING •
  - HYPOTHERMIA •
  - POISONING OR OVERDOSE •
  - PREGNANCY •

AND

- ❑ Flat line (asystole) on ECG for 30 seconds •

CONTROL NOTIFIED requesting contact POLICE • &/or GP •
at…… hrs
RELATIVES/NEIGHBOURS CONTACTED • at……..hrs
MINISTER of RELIGION CONTACTED • at……..hrs

BYSTANDER PRESENT yes/no Contact Info…….……...

DIAGNOSED BY……Call Sign
WITNESSED BY…….Call Sign
STATION……...

Appendix D

Anywhere Ambulance Service

From the Chief Ambulance Officer

May We Offer You Our Deepest Sympathies

Sadly someone you were close to has died. The ambulance service offers you our sincere condolences.

Be assured that if there had been any chance that life could have been saved our staff would have taken appropriate action.

If you have any questions or need help please ask the paramedics to assist you.

This leaflet is an attempt to address some of the issues that you will be facing at the present time. On the back of the leaflet are some local telephone numbers which may be of use to you.

The ambulance staff will soon be leaving. Your deceased relative/friend will remain in your care until other support eg doctor, police or undertaker, arrives. May we suggest that, if you wish, you contact someone for support. Members of your Family, close friends or a minister of religion may be of assistance to you.

Please remember that there are people to help. They will understand that this is a difficult and stressful time for you and that you are not likely to know everything that has to be dome and will need some help. We are sure you will find everyone you deal with anxious to ease your way. We have included some information which you may find useful and you can obtain further information from your telephone directory, or by contacting your GP, local post office or council offices. You may also (if you have not done so already, above) wish to contact your own minister of religion.

Once you have appointed a funeral director, you will find that they can take care of many of the potentially distressing details for you.

The ambulance crew has now pronounced death. However, it is a legal requirement for a doctor (normally it is the patient's GP) to issue a medical certificate indicating the **cause** of death. We will attempt to contact your GP but if this is not possible or the GP is not in a position to issue this certificate, perhaps because he/she is unsure of the precise cause, there will be a duty on Her Majesty's Coroner (Procurator Fiscal) to investigate the death and issue the appropriate certificate. Under these circumstances the police, who act as agents of the coroner/procurator fiscal will be contacted.

In The Event Of A Sudden Death

In certain circumstances it may not be possible to establish the **cause** of death immediately so a doctor may not be able to sign a medical certificate. In some instances the body will have been moved to a mortuary. It may be necessary to hold an inquest or fatal accident enquiry. In all these circumstances, the procedures will be clearly explained to you by the police who are acting as agents of the coroner/procurator fiscal. It is still advisable at this stage to contact a funeral director and start to make the arrangements.

The Medical Certificate

When the doctor or coroner is satisfied as to the cause of death he will issue the medical certificate. This must be taken to the registrar who will register the death and issue the actual death certificate; he will also give you formal notice that he has done so.

The Registrar

You must take the medical certificate to register the death with the Registrar of Births and Deaths in the district where the death occurred. You are legally obliged to do this within five working days and this duty is best done, if possible, by the next of kin or someone with detailed family knowledge. You may take a friend or relative with you and, if possible the deceased birth certificate, marriage certificate (where appropriate) and medical card. You will find a list of addresses for registrars over leaf – they are also listed under registration of births and deaths in you telephone directory.

The Death Certificate

The death certificate is issued by the registrar. You will be given two copies, a green form for burial or cremation which must be given to your funeral director and a white copy for the department of social security and other purposes. It is worth checking as you may need additional copies of the white form – these are required for insurance and pension claims, for processing the will and any bank account. Additional copies can always be obtained later.

The registrar also has application forms for a funeral payment from the social fund, see opposite.

Funeral Directors

You will find the funeral director invaluable during the early stages of your bereavement and there is a list of funeral directors in The Yellow Pages or in your local paper. Reputable directors are committed to the highest professional standards and will explain clearly all options available and will provide a clear estimate of possible charges. In circumstances of hardship it may be possible to apply for a funeral payment towards the expenses of a simple ceremony. Once you have appointed a director you will find that they can take charge of many details for you and if required put you in touch with a minister of the appropriate religion. There will also, if you wish, remove the body to their own chapel of rest prior to the funera

Cremation or Burial?

If it is your wish or was that of the deceased to have a cremation the signature of two doctors are required. The funeral director will arrange this.

Ministers of Religion

A minister of the deceased's religion may already have been in attendance and may be of support to family and friends at this time. They will discuss your preferences and advice on the details of the funeral service. If there has been no recent contact with a religious group, your GP or the funeral director can advice on someone of the appropriate faith in your area who will be more than happy to carry out the required duties.

Support Agencies

There are many other organisations that may be available to provide you with help and support, for example CRUISE or the Samaritans (numbers are overleaf, a complete list can be found in the Useful Telephone Numbers section of your local telephone book).

Pensions and Benefits

Funeral payments from the social fund

Any pension or benefit books payable to the deceased must be returned to the DSS Office. Death grant is no longer available and in some cases of hardship it may be possible to apply for funeral payments from the social fund to help with the expenses of a simple but dignified funeral – your local DSS office will advice and has the appropriate forms. This is also available from the registrar. In the days to follow there will be many other matters requiring attention, for example

- Bank and savings account
- Insurance policies
- Rent and household bills
- Solicitors
- Notice in local newspaper (the funeral director will arrange this)
- Organ donations – the deceased may have expressed a desire to donate tissue or organs. Under the present circumstances only corneal (eye) donations can be contemplated as they can be removed up to 36 hours after death. This simple procedure can be carried out in the chapel of rest and is not in any way disfiguring. If this if something you wish to consider you should either contact your funeral director who will involve the appropriate agencies or the local accident and emergency department whose number is overleaf.

We are sure you will find that people will help as much as they can and you will find the funeral director's advice invaluable. This brief guide cannot cover any eventuality but we trust it has been of some help to you.

References

[1] Baskett P, Fisher J, Marsden A. Recognition of death by ambulance personnel. *Joint Colleges Ambulance Liaison Committee Newsletter* 1996; **1**

[2] Marsden AK, Ng GA, Dalziel K et al. When is it futile for ambulance crews to initiate cardiopulmonary Resuscitation? *BMJ* 1995; 311 : 49 – 51

[3] Lockey AS. Recognition of death and termination of cardiac resuscitation attempts by UK ambulance personnel. *Emerg Med J 2002*;*19:*345-347

[4] Golden & Tipton. *Essentials of Sea Survival*. Human Kinetics, Champaign, Illinois, USA. 2000. ISBN 0-7360-0215-4).

[5] International Guidelines for CPR and ECC – A Consensus on Science.
Part 2: Ethical Aspects of CPR and ECC
Resuscitation 2000: 46 ; 17 – 27

[6] Decisions Relating to Cardiopulmonary Resuscitation. A Joint statement from the RCN, Resuscitation Council (UK), and the BMA.