

# KATHARINE HOUSE HOSPICE

## Cardiopulmonary Resuscitation Policy and Procedure for Patients at Katharine House Hospice

Originator: Medical Director  
Approved by:  
Date of approval:

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## Introduction

Abrupt cessation of an effective cardiovascular circulation results in sudden collapse, unconsciousness and loss of vital signs. This condition is known as “cardiac arrest”. Mortality is 100% if no treatment is given. With cardiopulmonary resuscitation (CPR), the immediate out-of-hospital survival rate is perhaps 5%, although success rates are much lower for patients with concurrent severe illness. Nine out of ten immediate survivors die over the subsequent days, typically from injuries sustained as a result of the CPR attempt or from further cardiac arrest.

It is mandatory that a CPR status is established for all hospice patients, and this must be drawn up in a manner that respects the rights of the patient. In the absence of such a status, the default position is to perform CPR in the event of a cardiac arrest.

This Policy demonstrates the hospice’s commitment to establishing individualised and ethical CPR statuses for its patients in a manner that is compatible with all relevant legal and regulatory requirements and consistent with relevant guidelines from national bodies. More detailed information can be found in the appendices of this document.

## Relevant legal or regulatory instruments

- The European Convention for the Protection of Human Rights and Fundamental Freedoms, in particular Articles 2, 3, 8 and 14.
- Private and Voluntary Health Care (England) Regulations 2001, Regulations 16(1), 16(2), 16(3), 35(1) and 35(2).
- Independent Health Care. National Minimum Standards Regulations C27 and H7.

## Relevant national guidelines

- Decisions Relating To Cardiopulmonary Resuscitation: A Joint Statement from the BMA, Resuscitation Council (UK) and RCN.
- Ethical decision-making in palliative care: Cardiopulmonary resuscitation (CPR) for people who are terminally ill, produced by the APM and NCHSPCS.

## Related hospice policies and procedures

- Katharine House Hospice Philosophy.
- Mental Capacity Policy.
- Procedure for Clinical Decision Making.
- Procedure for Obtaining Consent for Clinical Procedures.
- Raising Concerns About Poor Practice (Whistle Blowing) Policy.

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## Accountability

|                      |   |
|----------------------|---|
| Director of Nursing: | Ultimate responsibility for ensuring that there is an effective policy in place and that staff are aware of it and adhere to it.  |
| Medical Director:    | Full responsibility for any CPR decisions relating to individual patients.  |
| Medical Staff:       | Completion of a CPR decision form for all patients who regularly use services based at the hospice.   |
| All Clinical Staff:  | Adherence to the instructions documented on a CPR decision form in the event of a cardiac arrest, with the proviso that no health care professional can be obliged to perform CPR if they regard it as a futile activity in the given instance.<br>Collective review of the appropriateness of the existing CPR status each time a patient is discussed at an inpatient, day centre or lymphoedema multidisciplinary meeting<br>To discuss any CPR decisions with which they do not feel comfortable with the Senior Nurse or Medical Director in the first instance. |

## Policy

Identified cardiac arrests are rare in the hospice setting. However, hospices must be prepared for such events.

The chances of successful CPR are largely influenced by the general health of the person at the time of a cardiac arrest. The CPR success rate in Nursing Homes is about 5% for witnessed cardiac arrests and 0.5% for unwitnessed ones. Successful CPR is eight-times more likely in the absence of advanced cancer. Post-CPR morbidity and mortality rates are high amongst immediate survivors of CPR.

CPR can be an undignified closure to life if inappropriately applied to patients with a remote prospect of recovery. It can also be highly distressing for bystanders.

The health status of staff, volunteers and visitors to the hospice is generally unknown. The default position of the hospice must be to perform CPR on such people in the event of a cardiac arrest unless information comes to light that indicates that this line of activity is inappropriate.

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The health status of hospice patients is generally known in significant detail. All patients regularly attending the hospice premises must be designated a CPR status that applies to them whenever they are on the premises. This decision must be made in a manner that satisfies all regulatory requirements. In the absence of such a CPR status, the default position in the event of a cardiac arrest must be to perform CPR unless information comes to light that indicates that this line of activity is inappropriate. Whenever a “do not attempt resuscitation” (DNAR) decision has been made, the reason for this decision must be documented. If completed properly, the hospice CPR Decision Sheet provides the necessary information.

A patient’s GP is primarily responsible for determining the CPR status of a patient in the community. The lead consultant is primarily responsible for determining the CPR status of a patient in a hospital.

All clinical staff must receive annual training in Basic Life Support CPR. They must be aware of and comply with the hospice CPR policy and procedure.

The regulatory requirements of the hospice, and the manner in which they are satisfied, are summarised in the table below:

| Requirement |  | Demonstrated by   |
|-------------|--|---|
| C27.1       | The CPR policy has been developed in discussion with (as a minimum) the senior health care professionals   | <ul style="list-style-type: none"> <li>CPR policy is discussed at the Clinical Practices Committee and the Clinical Subcommittee of the Trustee Board. Minutes are kept for both meetings.</li> </ul>   |
| C27.1       | The CPR policy is consistent with Resuscitation Council (UK) guidelines  | <ul style="list-style-type: none"> <li>Appendix One includes detailed appraisal of the relevant guidelines.</li> </ul>  |
| C27.1       | The CPR policy includes a section on ethical/legal consideration.  | <ul style="list-style-type: none"> <li>Appendix One includes detailed appraisal of the relevant ethical/legal considerations.</li> </ul>  |
| C27.4       | There is a sensitive exploration of the wishes of competent patients at risk of cardiac or respiratory failure, or with a terminal illness, regarding resuscitation. | <ul style="list-style-type: none"> <li>This is done when appropriate. However, the CPR guidelines of the Resuscitation Council (UK) and NCHSPC contain caveats regarding such discussions in the terminally ill and these are carefully followed at the hospice.</li> </ul>                                 |
| H7.2        | Patients’ rights are central to CPR decision making.   | <ul style="list-style-type: none"> <li>The Health Care Commission has been unable to advise the hospice exactly what these rights are. Hospice procedure fully complies with the guidance of the Resuscitation Council (UK) and NCHSPC.</li> </ul>  |
| H7.3        | The policy includes appropriate supervision arrangements to review resuscitation decisions.  | <ul style="list-style-type: none"> <li>CPR decisions are routinely reviewed whenever a patient is formally discussed at a clinical multidisciplinary team meeting, and this is documented.</li> </ul>   |
| H7.4        | The health care staff on duty must always include people with a thorough understanding of the CPR policy and who are able to make CPR decisions.                     | <ul style="list-style-type: none"> <li>All clinical staff must receive annual training in CPR. Attendance is recorded to ensure 100% attendance.</li> <li>All clinical staff are required to provide written confirmation that they have read and will comply with the CPR policy and procedure.</li> </ul> |

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## Procedure

### Staff awareness of hospice policy and staff training in CPR

During their induction process, all new staff are required to read the hospice CPR policy and sign a form to indicate that they have done this. It is the responsibility of the relevant Clinical Director to ensure this happens.

Whenever the CPR policy is revised, all clinical staff must read the revised policy and sign a form to indicate that they have done this. It is the responsibility of the Director of Nursing to ensure that these forms are returned.

All clinical staff are required to attend training in basic life support once a year, and the hospice maintains a record of attendance at such training events. It is the responsibility of the Administration Manager to ensure this happens.

### Informing Service Users about the organisations CPR Policy

The following extract is taken directly from the leaflet “A Way of Caring” that is given to all patients when they first make contact with the hospice:

“We believe that our popularity and success lies in our ‘way of caring’. Patients tell us repeatedly that what they want most is a simple and unrushed approach in peaceful surroundings, free from any unnecessary high-tech gadgetry, where they can relax and feel able to raise whatever issues are important to them. They appreciate being at the centre of their own care. Such environments can be created in the community or hospice whilst still providing patients with the treatment they need. For example, our care may include the appropriate use of blood transfusions, antibiotics, and other treatments that have a proven role. However, the greatest gains often come through making things simpler rather than more complicated. Comfort, quality of life and the preservation of dignity are essential considerations. Our work is designed to neither hasten nor postpone death. Since opening, there has been no clinical need to perform cardiopulmonary resuscitation on a single patient. Therefore we do not store a cardiac defibrillator. We are confident that this does not compromise care, but please discuss this with a member of the clinical team if it causes you concern”.

This extract clearly describes a healthcare organisation that has deliberated very carefully over its culture and its values. It describes a slow-paced, low-tech environment that is explicitly devoid of CPR equipment. The leaflet, like all our literature for patients and their families, positively invites further discussion on any

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matter if the patient wants this, thereby making information freely accessible whilst respecting privacy.

The Medical Director must be made aware of any service user who has concerns regarding CPR in the hospice and, as they have ultimate clinical responsibility for CPR decisions in the hospice, it is appropriate for the Medical Director to take a lead role in subsequent discussions with the service user on this matter. Any person wishing to examine the hospice CPR policy must be provided with a full copy of the document, including the appendices.

## The CPR decision-making process

- 1 All hospice patients who regularly spend time on the hospice premises (in the Day Hospice, Lymphoedema Clinic or Inpatient Unit), must have a CPR Decision Sheet completed at the earliest opportunity by a member of the medical team. The back of this sheet sets out a process that, when followed, ensures that decisions are as individualised and as objective as possible and in line with the following unambiguous principles that are endorsed by the British Medical Association, Royal College of Nursing and Resuscitation Council UK:
  - “It is not necessary to initiate a discussion about CPR with a patient if there is no reason to believe that a patient is likely to suffer a cardiorespiratory arrest”.
  - “If the clinical team believes that CPR will not restart the heart and maintain breathing, it should not be offered or attempted”.
  - “Neither patients, nor those close to them, can demand treatment that is clinically inappropriate”.
  - “When a clinical decision is made that CPR should not be attempted because it will not be successful, and the patient has not expressed a wish to discuss CPR, it is not necessary or appropriate to initiate discussion with the patient to explore their wishes regarding CPR”.
  - “A Do Not Attempt resuscitation (DNAR) decision does not override clinical judgement in the unlikely event of a reversible cause of the patient’s respiratory or cardiac arrest that does not match the circumstances envisaged”.
- 2 The CPR status of every hospice patient is reviewed as a matter of routine each time they are discussed in a Day Hospice or Inpatient Unit patient review meeting. The review form is signed and dated to indicate that this review has taken place.
- 3 In the absence of a CPR Decision Sheet, the presumption must always be in favour of CPR if the patient has a cardiac arrest, although the following caveat (endorsed by the BMA, RCN and Resuscitation Council UK) applies:
  - “There will be some cases for whom attempting CPR is clearly inappropriate, for example a patient in the final stages of a terminal illness where death is imminent and unavoidable and CPR would not be successful, but for whom no formal DNAR decision has been made. In such circumstances, healthcare workers who make a

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considered decision not to commence CPR should be supported by their senior colleagues and employers.”

4 CPR decisions can be divided into the following categories:

- **CPR is considered clinically appropriate by the clinical team, but the patient (or in certain limited circumstances defined by the Mental Capacity Act, their representative) has indicated that they would not like CPR to be performed in the event of a cardiac arrest.**

Whenever CPR is considered a clinically appropriate option in the event of a cardiorespiratory arrest, it must be discussed with the patient. However, if the patient indicates that they **would not** like CPR to be performed in the event of a cardiac arrest, this wish must be respected.

- **CPR is considered clinically appropriate by the clinical team, and the patient (or in certain limited circumstances defined by the Mental Capacity Act, their representative) wishes for CPR to be performed in the event of a cardiac arrest.**

Whenever CPR is considered a clinically appropriate option in the event of a cardiorespiratory arrest, it must be discussed with the patient. If the patient indicates that they **would** like CPR to be performed in the event of a cardiac arrest, then it must be established with them where their preferred place of care is. It should be specifically highlighted that, in the context of the inpatient care of a patient at risk of a cardiorespiratory arrest, the services and facilities potentially available at an acute hospital are probably preferable to those of a hospice. Subject to an individualised assessment of the situation, these services and facilities might include:

- pre-emptive cardiac monitoring;
- reversal of certain cardiac arrest risk factors
- an experienced and fully equipped cardiac arrest team on site
- post-cardiac arrest intensive care facilities

Before having such a discussion with the patient, it might be prudent to carefully discuss the case with the on call consultant physician at the hospital to establish which, if any, of these benefits might actually be available. This discussion should be documented. In the discussion, it should also be noted that specialist palliative care advice will still be available at the hospital through the Hospital Palliative Care Support Team. If the patient makes an informed decision to turn down the clear benefits of an acute hospital that cannot be replicated in the hospice setting, then the conversation must then explore the expectations of the patient to see if these can be realistically matched to what the hospice can reasonably provide. Even if the patient decides to stay at the hospice and it is agreed that the decision is to perform CPR in the event of a cardiac arrest, the following statement might become relevant at the moment of a cardiac arrest, depending upon the clinical circumstances leading up to the event:

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- “If the clinical team believes that CPR will not restart the heart and maintain breathing, it should not be offered or attempted.”

- **CPR is considered clinically inappropriate by the clinical team, and the patient (or in certain limited circumstances defined by the Mental Capacity Act, their representative) has not volunteered an opinion regarding CPR or has indicated that they would not like CPR to be performed in the event of a cardiac arrest.**

When a clinical decision is made that CPR should not be attempted because it will not be successful, and the patient has not expressed a wish to discuss CPR, it is not necessary or appropriate to initiate discussion with the patient to explore their wishes regarding CPR.

When a clinical decision is made that CPR should not be attempted because it will not be successful, and the patient has expressed a wish not to receive CPR, it is not appropriate to perform CPR in the event of a cardiac arrest.

- **CPR is considered clinically inappropriate by the clinical team, but the patient (or in certain limited circumstances defined by the Mental Capacity Act, their representative) has indicated a wish to have CPR performed in the event of a cardiac arrest.**

In such a situation, no member of the clinical team is obliged to perform CPR against their own clinical judgement. However, the following sequence of events must be followed:

- a) Careful explanation with the patient and family as to why it is the clinical opinion that CPR would be inappropriate in the event of a cardiac arrest.
- b) If the patient/patient representative still wishes CPR to be performed in the event of a cardiac arrest, the hospice must offer the patient an independent second opinion regarding CPR by a doctor from outside the organisation. If the doctor providing the second opinion believes that CPR is an appropriate action to take in the event of a cardiac arrest, it might be necessary to transfer the patient to a healthcare setting where the clinical team would be happy to follow this through in the event of a cardiac arrest. This being the case, it would be appropriate for the second opinion to be made by a consultant physician with access to hospital beds.
- c) If the patient/patient representative remains dissatisfied with the clinical opinion regarding CPR, it may be necessary to arrange a formal legal review of the case. In such situations, no health care worker is obliged to perform CPR against their own clinical judgement in the event of a cardiac arrest.

- 5 Being ultimately responsible for all CPR decisions within the hospice, the Medical Director must be advised of any difficulties that arise in CPR decision-making. The Medical Director also reserves the right to revisit any CPR decision that has been made, and will typically involve the Senior Ward Nurse, Day Centre Co-ordinator and/or any other appropriate people in order to reach a satisfactory

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collective opinion. Members of the clinical team are encouraged to challenge the Medical Director, either individually or collectively, about any CPR decision with which they are not comfortable. They must also follow the “Raising Concerns About Poor Practice (Whistle Blowing) Policy” if they believe that repeated or systematic errors in CPR decision making appear to be taking place.

- 6 Completed CPR Decision Sheets must be placed in the front of the clinical notes for easy access, directly behind the patient summary sheets. In order to stand out more, these sheets are green. Where necessary, supplementary information must be placed in the information box on the CPR Decision Sheet. When more space is required for such supplementary information, this must be placed in the main body of the clinical notes, and its presence must be highlighted in the comments box of the CPR Decision Sheet.

### Reviewing the CPR status of patients

The CPR decision will be highlighted and reviewed whenever a patient is discussed at an inpatient, day centre or lymphoedema multidisciplinary meeting.

The review process will be documented by placing a signature and date on the CPR review form. Whenever a CPR decision is changed, the old form must be scored through and replaced with a new one that indicates the new CPR status. The old form is then stored in the relevant section in the back of the clinical notes.

### Performing CPR

Whenever CPR is performed in the hospice setting, it must be administered in accordance with the “Adult Basic Life Support” algorithm of the Resuscitation Council (UK) until such time as a 999 ambulance arrives to take the patient to the nearest casualty department. Any CPR activities must be documented accurately in the patient's clinical notes and the details of the circumstances surrounding the cardiac arrest must also be documented carefully.

#### **Resuscitation Council (UK) Adult Basic Life Support**

1. Establish that the person is unresponsive.
2. Shout for help.
3. Open the person's airway.
4. Establish that the person is not breathing normally.
5. Call 999.
6. 30 chest compressions.
7. Repeat cycles of 2 rescue breaths followed by 30 chest compressions.

As the hospice does not know the full clinical picture of any visitor, volunteer or member of staff at the hospice, the default position is always to provide basic CPR to any such individuals who have a cardiac arrest, until such time as a 999 ambulance arrives to take them to the nearest casualty department.

Responsibility for CPR decisions and activities lies with the hospice until such time as the procedure has been formally handed over to a paramedic ambulance crew.

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## Cardiopulmonary Resuscitation Decisions for patients in non-Hospice Settings

Hospice staff lack the authority to autonomously determine the CPR status of patients in the community setting. However, they often have a highly legitimate need to ascertain what the CPR status for a patient actually is, and they may also have a highly legitimate role in the decision-making process. Being excellent communicators, they will also want to ensure that all decisions regarding CPR are unambiguous and known to all relevant people.

The lead clinician for making CPR decisions in the community is the patient's GP, and in the hospital it is the patient's Consultant. In both settings, they will come to such decisions using their own Policies and Procedures. However, as the Katharine House Hospice Resuscitation Policy and Procedure is based upon national guidance that is applicable to all clinical areas, one could reasonably expect the approach taken by the GP or hospital consultant to be reasonably similar to that applied by the hospice.

CPR status in an ambulance is determined by ambulance service policy.

If a member of hospice staff has concerns about the CPR status (or lack of CPR status) of a patient in any non-hospice setting, then they are advised to discuss this with the lead clinician for making this decision in the first instance. Whilst the hospice will support any member of its clinical staff who feels a need to articulate any reasonable concerns they might have about the CPR status of a patient with the relevant lead clinician, the hospice also supports the principle that the ultimate decision rests with that lead clinician.

The CPR status of a patient is not the only factor that determines whether a health care professional performs CPR or not in the event of a cardiac arrest. Individual health care professionals:

- Are not required to perform CPR against their own clinical judgement.
- Might arguably consider their enforced participation in a futile CPR attempt to be a personally inhuman or degrading treatment, from which they are obviously protected by Article Three of the European Convention of Human Rights and Fundamental Freedoms.

Whether or not a hospice professional assists in a CPR attempt in a non-hospice setting is a personal choice, but Katharine House Hospice will support any decision that reasonably balances the official CPR status in that setting with personal clinical judgement at the time of a cardiac arrest and a consideration of the personal humanity or otherwise of participating in a CPR attempt.

## Policy Review

The CPR policy and procedure must be reviewed on an annual basis or more frequently if procedural difficulties arise or there are legal or regulatory changes. Any

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concerns relating to this policy and procedure must be reported to the Katharine House Hospice Clinical Practice Committee. Any revisions made to this policy, however small, must be ratified at Trustee level before they come into action.

### Audit standards

The following simple checks can be made on an annual basis to demonstrate compliance with the Policy and Procedure:

1. Confirmation that each policy folder contains an up-to-date CPR policy.
2. Confirmation that each member of clinical staff has signed to indicate that they have read and understood the CPR Policy.
3. Confirmation that there is documentary evidence for each member of the clinical staff that they have received CPR training within the previous 12 months.
4. A check of 50 randomly-chosen clinical notes of patients regularly using on-site facilities or who have been admitted as a hospice inpatient at least once that the decision-making sheet has been completed in such a way as to demonstrate that appropriate decision-making process was employed.
5. A check of 10 randomly selected clinical notes of day hospice attenders that the CPR status has been reviewed each time the patient has been discussed at a Day Hospice Review Meeting.
6. A check of 20 randomly-selected clinical notes of patients who have been admitted to the inpatient unit within the previous 12 months that their CPR status has been reviewed each time the patient has been discussed at a weekly Inpatient Review Meeting.

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Appendix One: Ethical and legal considerations, with particular reference to the guidelines of the Resuscitation Council (UK), the Association of Palliative Medicine of Great Britain and Ireland, and the National Council of Hospice and Specialist Palliative Care Services.

Katharine House respects the first and second editions of “Decisions Relating To Cardiopulmonary Resuscitation: A Joint Statement from the British Medical Association, the Resuscitation Council (UK) and the Royal College of Nursing”, herein referred to as the “Joint Statement”. The hospice also values “Ethical decision-making in palliative care: Cardiopulmonary resuscitation (CPR) for people who are terminally ill”, produced by the Association of Palliative Medicine for Great Britain and Ireland and the National Council of Hospice and Specialist Palliative Care Services, herein referred to as the “Palliative Care Statement”. Collectively, these documents provide an invaluable framework for the consideration of CPR issues in the hospice setting. The key points from these documents are summarised below. It is then explained how these points are interpreted and employed by the hospice.

**The first edition of the Joint Statement**

The first edition of the Joint Statement emphasised the role of the patient in the decision-making process without giving explicit guidance on how this might be done. It also provided the following observations regarding compliance with the European Convention for the Protection of Human Rights and Fundamental Freedoms:

**Article Two: The right to life**

CPR should be generally considered the default option in cases where it might be appropriate and no prior wish regarding CPR has been made by the patient. However, the Joint Statement went on to say that “although this is the general assumption, it is unlikely to be considered reasonable to attempt to resuscitate a patient who is in the terminal phase of illness or for whom the burdens of the treatment clearly outweigh the potential benefits”. It also stated that “it is not an appropriate goal of medicine to prolong life at all costs with no regard to its quality or the burdens of treatment on the patient”, and “for every person there comes a time when death is inevitable and it is essential to identify patients for whom cardiopulmonary arrest represents a terminal event in their illness and in whom attempted CPR is inappropriate”.

**Article Three: The right to be free from inhuman or degrading treatment**

Health professionals can be in breach of the Convention if their attempts at CPR or the treatments subsequent to successful CPR result in patients being “deliberately ill-treated” or having “severe indignities inflicted upon them”. With regard to the act of CPR, the Joint Statement said that “attempted CPR carries a risk of significant side effects and most patients require either coronary care or intensive care treatment in the post resuscitation period. If there is delay between cardiopulmonary arrest and the resuscitation attempt, there is a risk that the patient will suffer brain damage. Some

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resuscitation attempts may be traumatic, meaning that death occurs in a manner the patient and people close to the patient would not have wished.” As for the potential outcome of successful CPR, the Joint Statement commented that “it should be borne in mind that some people have a profound abhorrence of being kept alive in a state of total dependency or permanent lack of awareness. If patients express such views, health professionals should take note. They should refrain from artificially preserving life where it is clear that the patient would consider the resulting situation to be an inhuman or degrading state. The duty to protect life must be balanced with the obligation not to subject the patient to inhuman or degrading treatment”.

## Article Eight: The right to respect for privacy and family life

The Joint Statement observed that, whilst family members have no legal right in England to consent to treatment on behalf of a patient who lacks decision-making capacity (and doctors have authority to act in the best interest of the patient when patient consent is unavailable), it is good practice to involve people close to patients in decision-making processes.

## Article Ten: The right to freedom of expression, which includes the right to hold opinions and to receive information

The Joint Statement advised that “written information about resuscitation policies should be included in the general literature provided to patients about health care establishments. Such information should be readily available to all patients and to people close to the patient, including relatives and partners”. However, “information should not be forced on unwilling recipients, and if patients indicate that they do not wish to discuss resuscitation this should be respected”. Furthermore, “there is no ethical or legal requirement to discuss every possible eventuality with all patients, although if patients for whom cardiopulmonary arrest is not a foreseeable likelihood do want to discuss resuscitation, the health team must be willing to do this and to answer any questions honestly”.

## Article Fourteen: The right to be free from discriminatory practices in respect of these rights

The Joint Statement suggested that whilst “local policy makers may find it helpful to tailor policies to their own particular setting to ensure they are relevant to the type of patients being cared for and take account of what facilities are available, decisions must always be made on an individual basis. Blanket policies which deny attempts at resuscitation to groups of patients, for example to all patients in a nursing home or to patients above a certain age, are unethical and probably unlawful under provisions of the Human Rights Act which prohibit discrimination in the enjoyment of Convention rights”.

Whilst they lay outside the scope of the Convention, the first edition of the Joint Statement also made a number of comments regarding the decision-making process. Translating the guidance to the hospice setting, the hospice Consultant had overall responsibility for CPR decisions but s/he should always be prepared to discuss these with the patient's GP. However, no doctor was required to give treatment contrary to their own clinical judgement. Patients with decision-making capacity had an absolute right to provide advance refusal for CPR, and such refusals had to be honoured. They

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were also perfectly entitled to make an advance request for CPR in the potential event of a cardiopulmonary arrest. In this situation, doctors were advised to try and dissuade them from requesting such a line of action if they considered CPR to have a low likelihood of success but, if the patient persisted in requesting CPR, the medical team should honour the wish as far as they felt able, in order not to be in breach of Article Two of the Convention. Whilst people close to a patient who lacks decision-making capacity had no legal right in England to provide consent on their behalf, it was considered good practice to involve them in decision-making processes under such circumstances. Whenever a clinical decision was seriously challenged and agreement could not be reached, some form of legal review was considered likely to be necessary.

## **The second edition of the Joint Statement**

The second edition of the Joint Statement paid much less attention to the European Convention of Human Rights and Fundamental Freedoms. However, it attempted to clarify the role of the patient in the decision-making process. Whilst the document as a whole would appear open to multiple interpretation, it does contain the following sentences which are completely unambiguous when read either in isolation or in the context of the whole document:

1. "Where no explicit decision has been made in advance there should be a presumption in favour of CPR".
2. "It is not necessary to initiate a discussion about CPR with a patient if there is no reason to believe that a patient is likely to suffer a cardiorespiratory arrest".
3. "If the clinical team believes that CPR will not restart the heart and maintain breathing, it should not be offered or attempted".
4. "Neither patients, nor those close to them, can demand treatment that is clinically inappropriate".
5. "When a clinical decision is made that CPR should not be attempted because it will not be successful, and the patient has not expressed a wish to discuss CPR, it is not necessary or appropriate to initiate discussion with the patient to explore their wishes regarding CPR".
6. "A Do Not Attempt resuscitation (DNAR) decision does not override clinical judgement in the unlikely event of a reversible cause of the patient's respiratory or cardiac arrest that does not match the circumstances envisaged".

These sentences have been used by the hospice to create a decision-making tool for CPR (Appendix Three).

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## **The Palliative Care Statement**

The Palliative Care Statement considers CPR an appropriate option if all three of the following conditions are met:

1. There is a reasonable chance of CPR re-establishing cardiopulmonary function.
2. Successful resuscitation would probably result in a quality of life acceptable to the patient.
3. It is the competent patient's expressed wish to receive CPR in the event of a cardiopulmonary arrest.

However, it also notes that:

- For terminally ill patients (unambiguously defined as those with active and progressive disease for whom curative treatment is not possible or not appropriate, and for whom death can reasonably be expected within twelve months), the harms of CPR are likely to outweigh the benefits. CPR is almost invariably unsuccessful in this patient group. The rare instances of successful resuscitation typically result in death from a further cardiopulmonary arrest before the patient can be discharged home.
- There is no ethical obligation to discuss CPR with those palliative care patients for whom such treatment is considered futile. It is recognised that this represents the majority of palliative care patients. It can be potentially distressing for these patients if the subject of CPR is deliberately raised with them, only to advise them that CPR attempts would almost certainly be futile.
- Should a patient express a wish for CPR and it is considered likely that patient would benefit from the procedure in the event of a cardiopulmonary arrest, then the subject should be discussed fully with the patient at the earliest opportunity. This discussion should ideally take place prior to hospice admission and it should cover the extent of CPR facilities and the level of expertise available in the hospice. The patient may still request admission to the hospice, accepting that only limited and basic CPR may be available but that emergency transfer to a hospital could be arranged in such circumstances.
- If no advance decision has been made by the patient about CPR then it is the doctor's legal responsibility to act in the patient's best interests in the event of a cardiorespiratory arrest as the patient is by definition incompetent to make a decision at the time.

## **How does Katharine House Hospice interpret and apply this legislation and advice?**

Katharine House Hospice practices patient-centred care and has no wish to act outside the law. Our CPR decision-making process is firmly founded on the principles contained in the second Joint Statement and the Palliative Care Statement. Whilst we accept that it is not lawful to adopt a blanket "do not resuscitate" policy within the building, our own review of the medical literature has satisfied us beyond doubt that CPR is not an appropriate default activity to be undertaken on our patient group in the event of an identified cardiac arrest (Appendix Two). Nonetheless, a presumption in favour of CPR is the requirement made in the Joint Statement that we must follow. Since opening in 1991, we have not identified a single patient at the hospice who has died from a cardiac arrest for whom CPR might have been appropriate. Our

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organisation therefore has no experience whatsoever of CPR on a real patient in a real clinical setting. In that same time, we have received just one advance request for CPR and this was dealt with to the satisfaction of that patient in an individualised manner by transferring them to a health care facility more suited to providing such a service.

We respect the various Articles of the European Convention in the following ways:

### Article Two: The right to life

We always aim to optimise the quality of remaining life in our patients. Directly embracing the philosophy of palliative care as defined by the World Health Organisation, none of our actions are designed to hasten or postpone the moment of death, which we consider to be a natural part of any terminal illness. We believe that the deaths we witness within the hospice are inevitable and are typically the result of cachexia and a burden of pathology that makes life unsustainable. Under these circumstances, an advance decision in favour of CPR is rarely likely to be clinically appropriate, the only likely exceptions being when the patient has clearly stated a wish for CPR *and* the doctor in attendance at the time does not find CPR contrary to their own clinical judgement.

In accordance with the second edition of the Joint Statement, whenever no decision has been made in advance of a cardiac arrest, there will be a presumption in favour of CPR. However, the following sentence from the same document might prove relevant in some of these cases:

- “There will be some cases for whom attempting CPR is clearly inappropriate, for example a patient in the final stages of a terminal illness where death is imminent and unavoidable and CPR would not be successful, but for whom no formal DNAR decision has been made. In such circumstances, healthcare workers who make a considered decision not to commence CPR should be supported by their senior colleagues and employers.”

Although it respects the requirement, this hospice is not presently convinced that the presumption in favour of CPR in the absence of a CPR decision is a logical derivation from the “right to life” as described in Article Two of the European Convention of Human Rights and Fundamental Freedoms. When this Article is examined, it becomes immediately clear that the “right to life” is more accurately a right not to be killed, except in certain clearly defined circumstances when the state may legitimately take such action. Although untested in the law courts, in the absence of a legal definition of the state of death, it could be argued that a patient who has just suffered a cardiac arrest is dead by virtue of their non-functioning heart, lungs and brain. It then follows that a patient who is already dead cannot be killed by an act of omission. It also seems quite reasonable to claim that the dead cannot have a right to life.

### Article Three: The right to be free from inhuman or degrading treatment

Post mortem studies have shown that the risk of sustaining a fractured sternum or fractured ribs as a result of receiving CPR are as high as 30% and 55% respectively, and the risk of a perforated body organ is also significant. Due to their frailty and the possibility of bone metastases, hospice patients arguably have a much higher fracture risk than most other people in the community, and their fracture rates can therefore be

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expected to be higher. The CPR success rate for a witnessed cardiac arrest in a Nursing Home setting is approximately 5%, but if it is unwitnessed it is probably as low as 0.5%. The chances of a successful CPR attempt falls by a factor of eight in the presence of advanced incurable illness such as cancer. 70% CPR survivors will die within the next 72 hours, and many who survive longer than this will have permanent neurological damage. Therefore, the chances of a successful resuscitation attempt are generally low in the hospice setting and the risk of significant harm is high. As the fracturing of bones is likely to be audible in the immediate vicinity of the CPR attempt, CPR in the hospice setting has a high risk of being an inhuman or degrading experience for the patient; their family; other nearby patients and visitors; and hospice staff.

## Article Eight: The right to respect for privacy and family life

The rights and limitations of family members or significant others to make clinical decisions on behalf of patients who lack decision-making capacity are clearly described in the Mental Capacity Act 2005. Our clinical policies cover such eventualities, and we do not envisage any problems with this aspect of the Convention.

## Article Ten: The right to freedom of expression, which includes the right to hold opinions and to receive information

We are heartened by the Palliative Care Statement and some of the comments in the second edition of the Joint Statement that indicate the inappropriateness of discussing CPR matters with all patients. Was this not the case, there would arguably be frequent breaches of Article Three. Our leaflet “A Way of Caring” clearly indicates to patients that we have never performed CPR in the hospice and that we do not have resuscitation equipment on site. It also invites patients to discuss any questions or concerns they might have regarding CPR with a member of the clinical staff. This helps to ensure that all patients and their families can legitimately raise the subject. The group of patients for whom CPR decision-making should be deliberately raised by clinical staff is clearly identified in the “Cardiopulmonary Resuscitation Procedure for Patients at Katharine House Hospice”.

## Article Fourteen: The right to be free from discriminatory practices in respect of these rights (Article 14)

It is perfectly evident from the Joint Statement that, whilst having a “default” CPR decision is not contrary to the Convention, having a “blanket” decision clearly is. Our preference would be to have a default position not to resuscitate hospice patients in the absence of a decision, but the Joint Statement requires the opposite default to be applied regardless of clinical setting. Nonetheless, patients and their families cannot demand CPR if the clinical team consider such an activity clinically inappropriate. It would be unethical to appear to give the patient a choice in the matter if they do not have one. This hospice’s CPR decision tool objectively individualises the clinical decision-making process, using the criteria highlighted in the Joint Statement and the Palliative Care Statement. It also ensures that the involvement or non-involvement of the patient and family in the decision-making process is in line with the guidance in the Joint Statement.

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## Appendix Two: Making Sense of Cardiac Arrests and the Chances of Successful Intervention in the Hospice Setting

### Introduction

Cardiac arrest is a clinical syndrome comprising unresponsiveness, absence of a detectable pulse and either apnoea or agonal respiration. (1) Cardiac activity need not have stopped altogether. Indeed, the cardiac rhythm associated with a cardiac arrest is an important prognostic factor for successful cardiopulmonary resuscitation (CPR). (2)

### Cardiac arrest, patient autonomy and the hospice

The hospice movement supports and encourages patient autonomy. Pre-emptive CPR decision making is generally considered an important area for patient autonomy to be exercised. This is reasonable whenever CPR has a fair chance of success, but national guidance contains caveats regarding patient involvement in CPR decision-making when the procedure is likely to be futile. (3) Hospices in the United Kingdom are regulated by the Quality Care Commission which has mandated that pre-emptive CPR decision making is a routine activity for all hospice patients. (4) Whilst hospice-specific data on cardiac arrests are missing, it is generally accepted that hospice patients almost never survive CPR. (5) However, it is crucial for CPR decisions to be individualised and not institutionalised as the latter arguably contravene Article Fourteen (freedom from discriminatory practices) of the European Convention of Human Rights and Fundamental Freedoms. Nonetheless, even highly individualised informed decisions depend upon generalised data.

### The aims of this paper

This paper examines clinical data that might help to inform understanding of the likely incidence of cardiac arrests and CPR success rates amongst hospice patients. It does not consider the CPR needs of other people in the hospice. The picture obtained is highly tentative because:

- Available CPR treatments and their success rates are very location-specific.
  - CPR success rates are also influenced by co-morbidities and other factors.
  - In the absence of any large hospice-specific CPR datasets, one has to translate data from other settings. However, the greater the differences between clinical settings, the less confident one becomes in the extrapolation process.
- Furthermore, the infrequency of cardiac arrests in most settings means there are few large high-quality CPR datasets in any setting.

### General information regarding cardiac arrests

#### Cardiac arrests out of hospital

Whilst it is difficult to quantify the frequency of cardiac arrests in the general population, recent research data suggests that there is approximately one out-of-hospital cardiac arrest every two years in any setting where at least 250 adults over

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the age of 50 spend 16 hours a day. (6) 47% all deaths from cardiac arrest occur out of hospital, of which 80% occur in people's own homes. (6-8) There are four out-of-hospital cardiac arrests from a non-cardiac cause for every 17 due to a cardiac cause. (6)

### The significance of pre-cardiac arrest

Up to 70% patients develop symptoms and signs 6-7 hours prior to a cardiac arrest, including chest pain; altered mental state; respiratory rate under 10/minute or over 30/minute; pulse under 45 beats/minute or over 125 beats/minute; and a mean arterial blood pressure below 70mmHg or over 130mmHg. (9, 10) Appropriate "pre-cardiac arrest" management reduces the cardiac arrest rate by 50% and increases CPR success rate by 50%. Furthermore, CPR survivors spend 35% less time in intensive care units, and their length of hospital stay is halved. (11) Where no pre-cardiac arrest interventions are made, the hospital CPR success rate is 14%. (2) Appropriate pre-cardiac arrest management clearly saves more lives than performing CPR.

### Mortality and morbidity associated with cardiac arrest

The type and cause of cardiac arrest are of great prognostic significance. Table One presents the prevalence of different cardiac arrests and their CPR survival rates in the hospital setting. (2) Pooled data from this study gave a crude CPR success rate in the hospital setting of 14%. Whilst distinctions are not absolute, different rhythms typically have different causes. For example, the relatively favourable supraventricular tachycardia is mostly associated with structural heart defects, heart failure, hyperthyroidism, pneumonia, pericarditis, recreational drugs, caffeine, alcohol and stress. In contrast, massive pulmonary embolism, massive haemorrhage, blocked endotracheal tube, anaphylaxis and renal failure are associated with less favourable rhythms such as ventricular fibrillation (VF), pulseless electrical activity (PEA) and asystole. Not only does the cause of cardiac arrest influence the likely rhythm, but the potential reversibility of the cause independently influences the chances of successful CPR and the risk of further subsequent cardiac arrest. Even after successful CPR, cardiac arrest carries high morbidity and mortality rates (Table 2).

Table One: The prevalence of different types of cardiac arrest and their respective CPR success rates in a hospital.

|                               | Proportion of cardiac arrests<br>in a hospital setting | Chance of survival if given<br>CPR in a hospital setting |
|-------------------------------|--|--|
| Supraventricular tachycardia  | 1.1%   | 63.2%  |
| Ventricular tachycardia       | 2.8%   | 55.3%  |
| Perfusion rhythms             | 29.1%  | 51.0%  |
| Ventricular fibrillation      | 13.9%  | 34.8%  |
| Pulseless electrical activity | 35.6%  | 14.3%  |
| Asystole                      | 17.5%  | 10.0%  |

Cardiac arrest survival drops rapidly when CPR is delayed. Out of hospital, there is a 65% chance of immediate recovery from ventricular fibrillation with immediate CPR and defibrillation, but this falls by 5.5% for every minute of delay. (12) Co-morbidity is another important prognostic factor. In hospitals, the chance of successful CPR is

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halved if the patient has cancer, renal failure or is over 70 years old. (13) Out of hospital, the CPR success rate is eight-times higher in patients without cancer than in those with cancer. (14) Available equipment, and particularly access to an automatic external defibrillator, plays an important theoretical role in the outcome from CPR but when such a device is used alongside basic life support in residential settings, the CPR success rate increases from just 2.7% to 3%. (6) The combination of factors mentioned above probably explains why the CPR success rate in Nursing Homes is just 5% for witnessed cardiac arrests of undetermined type and 0.5% for unwitnessed ones. (15)

Table Two: CPR morbidity

|                        | <b>Frequency</b> | <b>References</b> |
|------------------------|------------------|-------------------|
| Neurological damage    | Vast majority    | 16                |
| Death before discharge | 90%              | 17                |
| Death within 72 hours  | 70%              | 18                |
| Fractured ribs         | 55%              | 19-20             |
| Fractured sternum      | 30%              | 19-20             |
| Pneumonia              | 25%              | 18                |

Case reports exist regarding perforated organs, osteomyelitis, renal failure, retinal haemorrhage and rhabdomyolysis. (21-38)

### **National guidance on CPR decision making**

The 2007 document “Decisions Relating to Cardiopulmonary resuscitation: a joint statement from the British Medical Association, the Resuscitation Council (UK) and the Royal College of Nursing” contains the following unambiguous guidance on the appropriate level of patient involvement in the CPR decision-making process (3):

- “Neither patients, nor those close to them, can demand treatment that is clinically inappropriate”.
- “If the clinical team believes that CPR will not restart the heart and maintain breathing, it should not be offered or attempted”.
- “It is not necessary to initiate a discussion about CPR with a patient if there is no reason to believe that a patient is likely to suffer a cardiorespiratory arrest”.
- “When a clinical decision is made that CPR should not be attempted because it will not be successful, and the patient has not expressed a wish to discuss CPR, it is not necessary or appropriate to initiate discussion with the patient to explore their wishes regarding CPR”.
- “Clinicians should document the reason why a patient has not been informed of a DNAR order if the decision is made not to inform the patient”.

With regard to the terminally ill it states:

- “There will be some patients for whom attempting CPR is clearly inappropriate; for example a patient in the final stages of a terminal illness where death is imminent and unavoidable and CPR would not be successful, but for whom no formal DNAR decision has been made. In such circumstances, healthcare workers who make a considered decision not to

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commence CPR should be supported by their senior colleagues and employers.”

It also advises on the default position to take in the absence of a written CPR decision and indicates that a DNAR decision need not be binding in all circumstances:

- “Where no explicit decision has been made in advance there should be a presumption in favour of CPR”.
- “A Do Not Attempt resuscitation (DNAR) decision does not override clinical judgement in the unlikely event of a reversible cause of the patient’s respiratory or cardiac arrest that does not match the circumstances envisaged”.

In their document “Ethical decision-making in palliative care: Cardiopulmonary resuscitation (CPR) for people who are terminally ill” the Association of Palliative Medicine (APM) of Great Britain and Ireland, and the National Council of Hospice and Specialist Palliative Care Services define terminally ill people as “those with active and progressive disease for which curative treatment is not possible or not appropriate and from which death can reasonably be expected within twelve months.” (39) The document states that “for terminally ill patients, the harms of CPR are likely to far outweigh the possible benefits. Evidence indicates that, almost invariably, CPR either fails to re-establish cardiopulmonary function, or succeeds only to result in further cardiopulmonary arrest with no intervening hospital discharge”.

## Translation of CPR data to the hospice from other clinical settings

The likely incidence of cardiac arrest and the likely CPR success rate are essential components of any meaningful consideration of cardiac arrests in the hospice setting, but data is lacking in both areas. The following attempts have been made to overcome these knowledge deficits:

If there is one cardiac arrest every two years in any setting where at least 250 adults over the age of 50 spend 6 hours a day, then cardiac arrests in the hospice setting are likely to remain unusual events and it is highly unlikely that any hospice team will develop particular expertise in CPR. If this crude cardiac arrest rate is inflated five-fold, for which there is no evidence-based need, and applied to a Day Hospice that cares for 25 people for 8 hours on five days a week, one might expect one cardiac arrest in that setting every 5.7 years. If CPR is attempted in every single instance of cardiac arrest, which is unlikely to be considered appropriate, and is immediately successful in 5% cases, one might expect immediate CPR success in a Day Hospice once every 114 years. However, only 10% immediate survivors ultimately live to return home again, resulting in one longer-term survivor approximately every 1,140 years. Even this figure has been biased in favour of successful CPR outcomes.

The most detailed CPR datasets have been compiled in hospitals. To be of potentially informative value in other settings they must be adjusted and, even then, used with caution. If one accepts a crude CPR success rate of 14% in hospitals and 5% for witnessed cardiac arrests in Nursing Homes, then a 36% reduction in hospital success rates might be acceptable when translating hospital data into a hospice setting. In fact, if one accepts the published claim that hospice patients almost never survive CPR

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then it is a conversion factor heavily biased in favour of successful outcomes from CPR in the hospice setting. Such a conversion ratio is used in the following discussion.

## **Cardiac arrest in the hospice setting**

### Likely causes of cardiac arrest in the hospice setting

A CPR status should relate to the types and causes of cardiac arrest considered reasonable possibilities for a particular patient. Whilst these have not been established for patients in the hospice setting, the following may be particularly relevant:

- Massive pulmonary embolism
- Renal failure
- Massive haemorrhage
- Blocked endotracheal tube
- Anaphylaxis
- Acute cardiac cause

This list emphasises non-cardiac causes. It is possible that the ratio of cardiac to non-cardiac causes of cardiac arrest amongst hospice patients will be different from that of the general community, making it instructive to consider each putative cause in turn.

### Massive pulmonary embolus

Cardiac arrest due to massive pulmonary embolus is typically associated with pulseless electrical activity (PEA) and pronounced metabolic acidosis. Seven casualty departments received 33 witnessed PEA cardiac arrests over a 21-month period, 54% of which were attributable to confirmed massive pulmonary embolus. Of these cases, 83% had an identifiable pre-cardiac arrest phase and none survived CPR attempts. (40) Massive pulmonary embolus was responsible for 4.8% cardiac arrests presenting at another casualty department over an 8-year period and, of these 60 cases, 21 were thrombolysed at the time of CPR and 39 were not. Only two patients survived to discharge, both from the thrombolysis group. (41) These studies demonstrate that cardiac arrest due to massive pulmonary embolus carries a particularly poor prognosis. The unquantified risk associated with blind thrombolysis of hospice patients in the event of a cardiac arrest arguably makes this an indefensible procedure.

### Renal failure

The progressive hyperkalaemia of renal failure causes worsening heart block, a slowing and weakening of the pulse and finally ventricular fibrillation. Treatments for hyperkalaemia can be unpleasant (e.g. calcium resonium) or invasive (e.g. glucose and insulin drips, dialysis), and are not always appropriate for hospice patients. If patients with renal failure develop ventricular fibrillation through known hyperkalaemia, then either the hyperkalaemia was deliberately untreated or it did not respond to deliberately administered treatment. In either case, the cardiac arrest has an effectively irreversible cause. Any CPR attempt will fail and should therefore not be attempted. It is clearly too late at such a time to consider dialysis or other intensive treatments.

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### Massive haemorrhage

When a patient sustains cardiac arrest through massive haemorrhage, their circulating blood volume becomes inadequate to perfuse and oxygenate the heart and brain. As the heart is deprived of oxygen, its rhythm deteriorates through ventricular fibrillation to asystole. As hospices typically lack immediate access to replacement blood, this cause of cardiac arrest is irreversible for practical purposes. Death will be rapid and unavoidable and therefore no CPR attempt should be made.

### Blocked endotracheal tube

National guidance states that: “Uncommonly, some patients for whom a DNAR decision has been established may develop cardiac or respiratory arrest from a readily reversible cause such as choking, induction of anaesthesia, anaphylaxis or blocked tracheostomy tube. In such situations CPR would be appropriate, while the reversible cause is treated, unless the patient has specifically refused intervention in these circumstances”. This demonstrates the importance of “envisaged circumstances” with regard to CPR decision making. However, the scenario of a cardiac arrest from a blocked endotracheal tube may warrant closer examination.

A blocked endotracheal tube prevents the oxygenation of blood in the lungs. When completely starved of oxygen, the brain stops functioning within 5-15 seconds and the processes leading to irreversible brain damage start after about 5 minutes. In contrast, the heart enters asystole after about 4 minutes of anoxia and starts to become irreversibly damaged after about 16 minutes. Therefore, when cerebral anoxia first renders the patient unconscious, a pulse is typically maintained for about four minutes, during which time the endotracheal tube needs to be unblocked or simply removed, and oxygen administered. The onset of asystole indicates that irreversible brain damage is likely unless CPR is successful within the subsequent sixty seconds. As irreversible heart damage will not develop for a further 11 minutes, there is a significant window period for successful CPR with brain damage. The CPR success rate for asystole in the hospital setting is 10%, but the location and co-morbidity of a hospice patient may reduce this to perhaps 3.6%. Therefore, the “number needed to resuscitate” (NNR) for one immediate survivor is approximately 28. However, the vast majority of successfully resuscitated patients will have neurological impairment and about 90% will die during the associated inpatient episode. Therefore, for blocked endotracheal tubes, the NNR for one patient to be discharged from inpatient care alive is probably closer to 280.

### Anaphylaxis

There are 5-50 cases of anaphylaxis per 100,000 per year. (42) Severe cases are characterised by profound bronchospasm, angioedema, vasodilatation and loss of plasma. The associated hypoxia and central volume depletion can cause asystole. About 20 fatalities are reported annually in the United Kingdom. (43) The pre-cardiac arrest period ranges between 5 and 30 minutes, depending upon the implicated anaphylactic agent. Emergency first aid measures during this period comprise intramuscular epinephrine, systemic corticosteroid, nebulised bronchodilator, high-flow oxygen, nursing in a head-down position and generous intravenous fluid replacement. About 15% anaphylaxis-related deaths are the result of epinephrine overdose.

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The low incidence of anaphylaxis-induced cardiac arrest will typically preclude it as an “envisaged circumstance” when pre-emptively establishing a patient’s CPR status. It is in the event of such cardiac arrests that on-the-spot clinical judgement must be applied rather than a DNAR status. However, the chances of success are low for such cardiac arrests. If one accepts a CPR success rate for asystole in the hospice setting of about 3.6%, the NNR is approximately 280 for one patient to be subsequently discharged alive from inpatient care. However, this figure assumes that the profound vasodilatation and bronchoconstriction of anaphylaxis will have no negative impact on the success rate and there will be no iatrogenic deaths during CPR from fluid overload or epinephrine overdose.

## Cardiac cause

80% patients who sustain a sudden cardiac death have a history of coronary artery disease, and 75% have a history of myocardial infarction. Cardiac failure increases the risk of sudden cardiac death six- to nine-fold. Other identifiable risk factors for sudden cardiac death include a previous cardiac arrest of cardiac cause, Wolf-Parkinson White Syndrome, Long QT syndrome, dilated cardiomyopathy, and valvular heart disease. In the absence of an identifiable risk factor for a cardiac arrest of cardiac cause, it is arguable whether this group of cardiac arrests can be described as an “envisaged cause” for the patient in question and therefore whether it should be considered when determining their CPR status.

Cardiac arrests of cardiac cause are likely to be preceded by an identifiable pre-cardiac arrest period and they can be associated with any rhythm type. Applying a 5% CPR success rate to the hospice setting gives a NNR of 20 for one immediate survivor and of 200 for one patient to subsequently be discharged from inpatient care alive.

## Other causes

If a patient sustains a cardiac arrest from a reversible cause that had not been envisaged, the decision regarding whether or not to perform CPR should be made at the time of the event.

## The significance of the pre-cardiac arrest period in a hospice setting

Up to 70% cardiac arrests are preceded by a clinically identifiable pre-cardiac arrest period that can last several hours. The manner in which this time is used has the greatest influence of all upon the likelihood of a cardiac arrest occurring and the chances of recovery if CPR is required. This presents a number of hypothetical clinical scenarios to consider in the hospice setting.

Firstly, pre-cardiac arrest may simply be viewed as the terminal phase of an illness. Such patients will typically not receive interventions intended to improve their survival chances. If the pre-cardiac arrest has not been acted upon then it would seem reasonable not to subsequently perform CPR in the event of a cardiac arrest. A CPR status is arguably not relevant to such patients.

Secondly, a diagnosis of pre-cardiac arrest might occasionally be made. Management options range from palliation through to transferring the patient to an acute medical

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setting for specialist treatment and monitoring. If pre-cardiac arrest has been diagnosed but treated palliatively, it would seem inappropriate to subsequently perform CPR in the event of a cardiac arrest. If pre-cardiac arrest has been diagnosed and acted upon in-situ rather than by transferring the patient to a more specialist health care setting, then a decision has clearly been made to provide a level of care that cannot be described as “DNAR” but which is suboptimal in terms of cardiac arrest prospects. Such a line of action may be holistically very appropriate for some hospice patients, but it would seem implausible to follow it without ongoing dialogue with the patient at the time. By necessity, this would involve discussion about the appropriate CPR status to adopt in the event of a cardiac arrest. Therefore a predetermined CPR status is not necessary.

Thirdly, there may be instances of acute collapse and loss of consciousness that lacked an identifiable pre-cardiac arrest period. The precise cause and cardiac rhythm associated with such cardiac arrests will typically be unknown. A predetermined CPR status might be helpful for this subset of patients but, as successful CPR is demonstrably a rarity for causes of cardiac arrest that are likely to be of particular relevance in the hospice setting, “DNAR” would seem a reasonable individualised status in most instances. A predetermined “DNAR” status need not apply to cardiac arrests due to identifiably unexpected causes for which on –the-spot clinical judgement would have to be exercised.

## **The duration of a CPR attempt in the hospice**

Hospice patients sustaining a cardiac arrest probably have a level of co-morbidity that exceeds that of a member of the community at large, perhaps to the extent that the chance of successful CPR is reduced by 50%.(13) The location also reduces the chances of success. (15) The chances of successful CPR falls rapidly with time. It would seem reasonable not to attempt CPR for more than a period of about 5 minutes in the rare instances where it might be initiated for a hospice patient. Careful consideration should be given to any decision to discontinue CPR, particularly if an ambulance crew has been requested to transfer the patient to a hospital. If CPR has not stopped before the ambulance crew becomes responsible for the patient, then a futile CPR attempt could continue all the way to hospital and possibly beyond.

## **Conclusion**

It is a requirement for all hospice patients in the UK to have a documented, individualised and non-prejudicial CPR status. In the event of a DNAR decision, the reason for this must be documented. In the absence of a documented status, the presumption must be to perform CPR in the event of a cardiac arrest. If the clinical team believes that CPR will not restart the heart and maintain breathing, it should be neither offered nor attempted. For the purposes of CPR decision-making, the APM describes the terminally ill as those with active and progressive disease for which curative treatment is not possible or not appropriate and from which death can reasonably be expected within twelve months. CPR is considered inappropriate for this patient group.

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There is no hospice-based CPR dataset to draw upon when trying to quantify the risk of cardiac arrest or the chances of successful CPR. Careful consideration should be given to the establishment of a national database to which all cardiac arrests and their outcomes could be reported so that the information deficits can be addressed. As an interim measure, when data is extrapolated from other sources and treated with deliberate bias to exaggerate the incidence of cardiac arrests in the hospice setting, the frequency of CPR intervention, and the likely CPR success rate, there is likely to be about one immediately successful CPR every 114 years in a Day Hospice with places for 25 patients, and one patient will return home again after such a cardiac arrest every 1,140 years. It is possible that certain non-cardiac causes are responsible for a greater proportion of hospice-based cardiac arrests than for the population as a whole, but the CPR success rates for these causes are particularly small. A CPR status should relate to “envisaged circumstances” rather than to every possible cause of cardiac arrest. Cardiac arrests from anaphylaxis would rarely count as an “envisaged circumstance” and a DNAR status would therefore not preclude CPR if considered appropriate in such a context. Likewise, a cardiac cause of cardiac arrest is arguably not an “envisaged cause” in the absence of identifiable risk factors.

The importance of establishing a CPR status for each hospice patient is not disputed. It is very important that all such decisions are individualised and non-prejudicial. However, individualised decisions are by necessity based upon generalised data. When one considers the available evidence base, it would appear that successful CPR attempts in the hospice setting will remain noteworthy rarities and it would therefore be appropriate for this to be reflected in the individualised CPR statuses.

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## Appendix Three: CPR Decision Sheet and Review Form



Patient name: \_\_\_\_\_

Hospice Number: \_\_\_\_\_

Should the team attempt cardiopulmonary resuscitation  
in the event of a cardiac arrest?

YES NO

Has cardiopulmonary resuscitation been discussed with this patient?

YES NO

Signature: \_\_\_\_\_

Designation: \_\_\_\_\_

Printed name: \_\_\_\_\_

Date: \_\_\_\_\_

PLEASE:

1. DEMONSTRATE YOUR CAREFUL INDIVIDUALISED CONSIDERATION OF THIS MATTER BY COMPLETING THE INFORMATION OVERLEAF.
2. REPLACE THIS SHEET WITH A NEW ONE IF THE DECISION CHANGES. (SCORE OUT THE OLD SHEET AND PLACE IN THE BACK OF THE CLINICAL NOTES).

COMMENTS (Please date and sign)

N.B.

1. “Where no explicit decision has been made in advance there should be a presumption in favour of CPR.”<sup>1</sup>
2. “The overall clinical responsibility for decisions about CPR, including DNAR decisions, rests with the most senior clinician in charge of the patient’s care as defined by local policy.”<sup>1</sup>
3. “Clinicians should document the reason why a patient has not been informed of a DNAR order if the decision is made not to inform the patient. Clinicians may be asked to justify their decision.”<sup>1</sup> (Completion of the information overleaf should satisfy that requirement).
4. “A Do Not Attempt resuscitation (DNAR) decision does not override clinical judgement in the unlikely event of a reversible cause of the patient’s respiratory or cardiac arrest that does not match the circumstances envisaged.”<sup>1</sup>

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1. Decisions relating to cardiopulmonary resuscitation. A joint statement from the BMA, Resuscitation Council UK and the RCN (October 2007)

**Does this patient have an identifiable risk factor for cardiac arrest?**

("It is not necessary to initiate a discussion about CPR with a patient if there is no reason to believe that a patient is likely to suffer a cardiorespiratory arrest"<sup>1</sup>).

|   | Yes | No |
|---|-----|----|
| Previous cardiac arrest   |     |    |
| Previous myocardial infarction (75% sudden cardiac deaths have a previous history of myocardial infarction)   |     |    |
| Coronary artery disease (80% sudden cardiac deaths have a history of coronary artery disease)   |     |    |
| Cardiac failure (This increases the risk of cardiac arrest 6- to 9-fold)  |     |    |
| A known cardiac defect that increases the risk of cardiac arrest (e.g. WPW syndrome; long QT syndrome; dilated cardiomyopathy; valvular heart disease). |     |    |
| Recreational drug use.  |     |    |
| Hypoxia risk (e.g. severe asthma; endotracheal tube that could block; choking attacks)  |     |    |
| Stroke  |     |    |

**How successful is cardiopulmonary resuscitation likely to be in this patient?**

("If the clinical team believes that CPR will not restart the heart and maintain breathing, it should not be offered or attempted."<sup>1</sup>)

|   | Yes | No |
|---|-----|----|
| Is it too early in this patient's illness trajectory to describe them as terminally ill? <sup>2</sup>                                       |     |    |
| Is there a reasonable chance of CPR re-establishing cardiopulmonary function in this patient in the event of a cardiac arrest? <sup>2</sup> |     |    |
| If CPR were successful in this patient, would it probably result in a quality of life acceptable to the patient? <sup>2</sup>               |     |    |

**Would you personally consider it clinically appropriate to perform cardiopulmonary resuscitation?**

"Neither patients, nor those close to them, can demand treatment that is clinically inappropriate."<sup>1</sup>

|   | Yes | No |
|---|-----|----|
| Having considered the risk factors for cardiac arrest, the likelihood of success if CPR were performed, and the likely quality of life if CPR were successful, is it your professional opinion that cardiopulmonary resuscitation is a procedure that you would be prepared to undertake in the event of a cardiac arrest in this particular patient? |     |    |

**Has the patient expressed a wish regarding CPR?**

"When a clinical decision is made that CPR should not be attempted because it will not be successful, and the patient has not expressed a wish to discuss CPR, it is not necessary or appropriate to initiate discussion with the patient to explore their wishes regarding CPR."<sup>1</sup>

|   | Yes | No |
|---|-----|----|
| Has this patient, if competent to do so, expressed a wish to receive cardiopulmonary resuscitation? |     |    |

**Things to consider if the patient definitely wants cardiopulmonary resuscitation**

|   | Yes | No |
|---|-----|----|
| If the wish to receive CPR seems clinically appropriate to the clinical team, has the option of transfer to a hospital been discussed with the patient, where the chance of a successful intervention might be heightened?  |     |    |
| If the wish to receive CPR seems clinically inappropriate to the clinical team, is the following sequence of events being followed until a satisfactory outcome is arrived at: (i) careful and sensitive explanation of why the clinical opinion is against CPR; (ii) option of a second (independent) opinion; (iii) recourse to a legal review? |     |    |

1. Decisions relating to cardiopulmonary resuscitation. A joint statement from the BMA, Resuscitation Council UK and the RCN (October 2007)
2. These questions are derived from the National Council/APM joint paper entitled "Ethical decision-making in palliative care: Cardiopulmonary resuscitation (CPR) for people who are terminally ill".

## CPR Review Form

Patient Name: \_\_\_\_\_

Hospice Number:

[illegible]