



## **FUNERAL DIRECTORS' GUIDELINES PATIENT TRANSPORT IN ICE**

When members of the Cryonics Institute become legally dead outside of the Detroit Metropolitan area, help of a local funeral director will be required.

It is important to understand that we consider legal death distinct from absolute final death, which can be best defined by the principle of information theoretic death. Cryonics operates on the premise that conditions today's doctors consider beyond rescue may well be treatable and reversible by tomorrow's doctors.

Because we regard clinical death as potentially reversible in the future, we refer to the decedents as "**patients**", and it is important that action be timely and appropriate. But since the "patients" are legally dead, and because of certain skills and connections, some of the post-mortem procedures, including transportation, must be handled or arranged by funeral directors.

Some of our procedures stray from the standard practices of funeral directors, but it is important that these guidelines be followed in respect of the patient and their final wish. It is appropriate to charge accordingly for the extra work you will do for the patient.

The urgency of caring for a cryonics patient cannot be stressed enough. **Since they are a whole body donor, it is critical that actions be taken as quickly as possible to cool the patient down and to arrange the transportation to the Cryonics Institute facility.** When the patient arrives, we have our own procedures that must be performed to give the patient the most optimal conditions for their cryopreservation. Our procedure is time sensitive and having your help is critical to its success.

We understand that most states have requirements that must be met before a decedent is able to be transported out of the state. Most of the time, that requires a death certificate be signed by a doctor. Some states have a window of time that the doctor is given to sign, so we recognize that it may be difficult to get the doctor to sign the certificate any faster, since they may not be required to do so by law. We have found that explaining to the doctor that the patient is a whole body donor has helped in some situations. We also have a Uniform Donor Form that is signed by our members upon joining our organization and we have provided that form on occasion to help avoid delays.

We encourage our members to make their primary care physician aware of their cryopreservation arrangements, but that is not always the case. We must act as the patient's advocate and do everything we can to give them the best chance at future revival. We are here to help in any way that we can because we understand this may be the first time you have encountered a cryonics patient. The theory and science behind cryonics may not appeal to everyone, but respecting the patient's final wish is something everyone can understand. Below are the guidelines for caring for a cryonics patient and we strongly recommend you contact us to guide you through the specifics of our protocols and procedures.

If the patient died while in the hospital and the hospital staff has not administered Heparin and or Sodium Citrate (both anticoagulants), then the funeral director should do so through a readily-accessible vein. When plans are made in advance, we can send the Heparin, Sodium Citrate and syringe for you to have on hand. If the patient has been deceased for more than 30 minutes, administering Heparin will not be of any value and this step can be left out. If possible, ask the hospital to leave in I.V. lines or to insert an I.V. line post-mortem if a line is not already in place. If there are no I.V. lines in place, attempt to access a large superficial vein in the arm or hand, preferably the largest superficial veins of the arm (the antecubital veins). Once a vein is accessible, inject the Heparin and Sodium Citrate. If it is difficult to access a vein, the Heparin can be injected directly through the chest and into the heart. Heparin will prevent the blood from clotting and make the blood washout and perfusion more effective when the patient reaches our facility. Use 40,000 units of Heparin intravenously and 100ml Sodium Citrate. If attempting to inject directly into the heart, use 80,000 units of Heparin and administer two 40,000 injections at two different points in the chest to reach the heart. Use CPR-like chest compressions for 5 to 15 minutes after injection to circulate the Heparin. The more chest compressions that can be given, the better. Vigorous chest compressions are good because circulating the heparin is of greater importance than the risk that ribs will be broken.

**When removing a patient from the place of death, we ask that you bring several bags of ice with you, so you can completely cover the patient's entire body with ice inside of the body bag. If possible, adding water to the body bag to fill it up to the shoulder level of the patient will provide faster and better cooling.** If the preferred whole body ice bath is not possible, you should bring at least a couple of bags of ice (about 25 lbs) with you, so that they can be placed around the patient's head to cool the brain while the patient is being transported to the funeral home. This step is crucial, as the brain is the most important part of the body to cool down quickly. An "ice pillow" of crushed ice under the patient's head and another covering the patient's face provides better cooling. The best cooling is with ice and water rather than with ice cubes alone. The ice to water ratio should be roughly 80-90% ice and 10-20% water.

**The patient should NOT be embalmed or frozen.**

**At the funeral home, cooling the entire body with ice must continue while arrangements are made for transport to the Cryonics Institute facility.** If the patient is being shipped via aircraft, the nearest commercial airport is Detroit Metro Airport (DTW) in Romulus, Michigan. Once the patient is delivered to Michigan, there are further procedures we will perform before the patient is placed in long-term storage in liquid nitrogen.

Shipment requires a Ziegler shipping container, a vinyl body pouch, an air tray with cover and ice. This can be ready beforehand or quickly prepared when needed. If shipment will not require more than half a day, it will be adequate to use a Ziegler case placed inside of a cardboard box on a standard "air tray" with minimal insulation, such as heavy blankets. If shipment is expected to take longer, fiberglass wool insulation should be placed around the Ziegler and then covered with the cardboard cover to help insulate the container. Any questions concerning insulating the container can be directed to Andy Zawacki at (586) 791-5961.

The patient should be placed in the body pouch and then placed in the Ziegler shipping

container. A bag of ice should be placed under the patient's head and then the patient should be completely covered with ice. The ice should be checked, and replenished if needed, before the patient is taken to the airport. **Our goal is to keep the patient as cold as possible during transport without actually freezing the patient.** Freezing damages blood vessels, making perfusion impossible. The patient, ice and Ziegler can be placed in a walk-in cooler, if available, to make the ice last longer while making flight arrangements and filing paperwork. Ensure that the patient is not exposed to subzero (winter) temperatures outdoors or indoors.

**Cryonics Institute staff should be promptly notified in any case of death or possible death of a member, or in case of any question or emergency.** It is critical to speak with a Cryonics Institute staff member before making the arrangements for shipping the patient. We need to confirm that the patient has their contract and funding on file before authorization is given to ship the patient. Please keep us informed on the progress you are making with the arrangements.

Overview of steps for caring for the patient and helpful tips:

1. Removing/transferring patient& performing the initial cool-down
  - After receiving the first call, get to the patient as quickly as possible and bring enough ice to completely cover the patient's entire body. Add water up to the shoulder level of the patient to facilitate faster cooling.
  - If the patient will not already be in a body bag, bring one with you to contain any ice/water leakage.
  - If the preferred whole body ice bath is not possible, it is critical that the patient's head (brain) be cooled with an "ice pillow" by placing one bag of ice under the head and one over the face.
2. Administering the Heparin and Sodium Citrate
  - If Heparin and Sodium Citrate are available and able to be given within 30 minutes of the patient's death, administer it in the IV line, a vein, or directly into the heart.
  - Circulate the Heparin by performing vigorous chest compressions for 5 to 15 minutes.
  - If Heparin is not available or if more than 30 minutes has gone by, disregard this step and focus on cooling the patient.
3. Arriving at the funeral home
  - Once at the funeral home, place the patient into the Ziegler case and cover the patient's entire body with ice.
  - If a Ziegler case is not available right away, keeping the patient in the body bag filled with ice is sufficient.
  - The patient should not be frozen or embalmed.
  - If available, placing the patient into a walk-in cooler will provide further cooling and help to make the ice last longer.
4. Obtaining paperwork
  - Work to get the necessary paperwork, such as the death certificate or transit permit, as quickly as possible.
  - Explain to the doctor, or others involved with the paperwork, that the

patient is a whole body donor and time is of the essence. Please inform our staff of any issues you experience and we will do our best to help.

- Sometimes getting the family or next of kin involved is helpful. The doctor may shrug off a persistent funeral director, but may not do so if they are approached by a family member. We have had success with this in the past.
- If you are receiving these guidelines in advance, it is a good idea to start a file with the patient's personal history and any information that would be needed for a death certificate. This can be much faster than trying to obtain the information from the next of kin. Sometimes we have this information on file, so you are welcome to check with us if it is helpful to you.

5. Making transportation arrangements

- While working to obtain the paperwork, check into flight schedules or driving directions for the patient. Sometimes it is faster to get the patient to us by automobile, so it is important to check into this.
- Some directors have found it helpful to book the flight for a time when they expect to have the paperwork and reschedule the flight if more time is needed. This may be a little bit of extra work, but offers a great reward for the patient's condition.
- We do suggest the patient be put on a direct flight with no layovers or plane changes, if possible. This lessens the chance of a delay or other mishap. It is acceptable to schedule a layover flight if there are no direct flights available or if the layover flight will get the patient to us much sooner.
- Please check with the airline to see what their hours of operation are at Detroit Metro Airport (DTW) for picking up a patient. We would not want a flight that arrives after the airline's cargo department has closed because we would not be able to promptly pick up the patient.

6. Preparing for shipment

- Prepare the patient for shipment by checking and replenishing the ice, if necessary.
- Put insulating material around the Ziegler before securing the cover of the air tray. A good alternative to using heavy blankets for insulation is using quilted casket covers that you may already have on hand. If the transportation is going to take longer than half a day, fiberglass wool insulation can be easily purchased at a Home Depot, Lowe's, or other home improvement store.
- Transport the patient to the airport or begin the drive to the facility. Please keep the Cryonics Institute staff aware of the progress made.

**\*\*TIME BONUSES for funeral homes\*\***

CI will pay a “promptness bonus” that is in addition to your normal fees.

- \$1500 if we receive the patient (out of state members) within 12 hours of death
- \$1000 if we receive the patient (out of state members) within 24 hours of death
- \$1000 if we receive the patient (Michigan members) within 6 hours of death
- \$500 if we receive the patient (out of state members) within 36 hours of death

**\*\*Note-** if transport times are expected to last greater than 48 hours after legal death, then consider shipping under the funeral director guidelines for dry ice shipment. In these and other cases outside of the United States, most patients will not receive perfusion solution and will thus become a straight freeze. The exception is in situations where standby teams or trained funeral directors do the perfusion on location prior to dry ice shipment.

**Contact information for the Cryonics Institute:**

**Phone:** (586) 791-5961

**Fax:** (586) 792-7062

**Email:** [info@cryonics.org](mailto:info@cryonics.org)

**Address:** 24355 Sorrentino Court, Clinton Township, Michigan 48035

**For emergency use only:**

Staff cell phone (586) 817-0926