

BODY RECOVERY

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Introduction

The appearance of a deceased person, and the subsequent evaluation of evidence or injuries present may be influenced by the manner in which a body is retrieved, preserved, and transported from a crime scene to the mortuary. It is vital that the officer in charge of the crime scene, the forensic pathologist, and the body transporters work together to ensure the body is handled and transported in such a way that postmortem artifacts are minimized and evidence is not lost. Any clothing, property, or evidence noted on the body at the scene should remain in its original position, for example, a ligature in a case of hanging. The position of all extracorporeal material should be protected whilst in transit to the mortuary. Furthermore, any interference with the deceased, including precautions taken to prevent evidence being destroyed, should be documented.

Personnel recovering and transporting bodies need to be aware of various procedures used to maintain the continuity of the property and evidence. All staff must wear appropriate personal protective equipment and be trained in procedures to minimize infectious risks as well as those associated with physical strain. It is essential that all staff are familiar with crime-scene procedures and appropriate hierarchy of command and are well versed with necessary protocols for dealing with media and public attention. Staff should be alert and observant and at all times prepared to maintain the necessary evidentiary chain and to minimize interference with the integrity of the deceased. In addition, staff dealing with deceased persons should at all times treat the deceased with dignity.

This article will outline the techniques necessary for preserving the body and associated evidence during transport, including specific considerations for different types of cases.

Preservation of the Body Prior to Removal

Prior to the deceased being removed from the scene the following procedures should be implemented to maintain integrity of the deceased:

- The body is allocated a unique identifying number and labeled as such.

- The body is wrapped in clean plastic or linen sheeting and/or placed in a body bag.
- Where indicated, the body and scene are photographed and examined for trace evidence.
- Where appropriate, the body is searched, and clothing and property are removed.

The way in which a body is preserved prior to its removal from the scene of death will depend significantly on the circumstances of the death. In some cases crucial forensic evidence may be lost if precautions to guard against this are not taken. In many cases protecting the clothing, body, and hands of the deceased will assist with the preservation of this evidence. A number of methods for this are routinely used:

- The hands are covered with paper bags and secured about the wrists with tape, ensuring the presence of injury or evidence is not obscured nor altered.
- A clean plastic body pouch or plastic sheet may be enough to ensure evidence is not lost. The deceased is carefully placed on plastic then wrapped securely before transit.

In some cases, additional measures may need to be taken to assist with the preservation of evidence. These include protecting the body parts themselves from being damaged. In cases where significant incineration or decomposition has occurred, parts of the body may be wrapped individually to prevent them from becoming detached. Any precautions such as these must always be clearly noted, performed in the presence of the pathologist or homicide detective, and commenced only after the police, pathologist, and crime-scene examiners have completed their examination.

Body Lifting and Moving

There are a number of different techniques employed in moving a body; however, in the majority of cases a standard procedure can be applied. After being identified and labeled, the deceased may simply be carefully lifted and placed on to a bed sheet, length of plastic, or body bag and wrapped for transport. With particularly heavy bodies, decomposed, or fragile remains, rather than lifting, it is recommended to roll the deceased one way, placing the body bag beneath, and then roll the body the other way, pulling the body bag across. It is important for the body not to be dragged or forcibly lifted, as this may cause artifactual injuries.

Being mindful of the risk of physical injury, standard lifting techniques should be used, that is, bending the knees and keeping the back straight.

Equipment

All equipment used should be of good quality, easily obtainable, and in adequate supply:

1. Plastic zip-lock bags – to seal and transfer property, clothing, or evidence not attached to the deceased.
2. Labels – to label property and evidence bags. They should be appropriate for use with permanent marker, waterproof, and freezer grade, suitable for long-term storage.
3. Gloves – multiple sizes and types, thin disposable gloves for ease of use, heavier duty for infectious cases or chain-mail gloves for bodies with sharp edges such as incinerated remains, and specialized gloves for use with chemically hazardous cases.
4. Body tags – it is of utmost importance that body tags are appropriately selected based on case type. They must be strong, waterproof, and easy to label. They must be attachable to the deceased in such a way that will not interfere with the integrity of the deceased or alter the appearance of injuries or clothing. To minimize confusion it is wise to label the deceased twice, that is, one tag securely attached to the person, e.g., wrist or ankle, and another tag on the outer bag area.
5. Plastic skeds – to enable lifting and transfer of heavy or awkward bodies. These tools are also used in the exhumation of buried remains or the lifting of fragile skeletal cases, to prevent the body from disintegrating.
6. Body bags – all bags should exhibit the following characteristics:
 - a. constructed of tough waterproof material
 - b. have strong zips with covers to prevent leakage
 - c. be generous in size to allow for bodies in rigor mortis, or showing extensive decomposition
 - d. have at least four (ideally six) sturdy handles.
7. Additional equipment may include plastic and linen sheeting and towels; various types of indelible markers; heavy-duty tape for sealing and securing bags; cotton wool and superglue; disinfectant spray and cleaning equipment; plastic aprons and safety equipment such as respirators, face masks, and protective eyewear; and a change of clothes and/or protective footwear.

Property and Clothing

It is vital that all property and clothing are handled according to strict protocols. While systems for handling such extracorporeal material will vary between jurisdictions, for the most part it is preferred for routine cases that all clothing and property is left at the home of the deceased. In such instances, once the police and forensic pathologist are satisfied the

case is routine in nature, the clothing and property are removed and clearly recorded. In the description of such items, generic terms should be used at all times; for example, a gold ring with rubies should be described as a gold-colored ring with red-colored stones. It is recommended that the removal of clothing and property be done in the presence of two independent parties such as a police officer and the body transporter. Both parties will then sign the accompanying documentation in order to maintain a clear chain of custody of the items.

On occasion it is inappropriate to remove the clothing and property at the scene, for example, when the death occurs somewhere other than at the person's home, such as in the street, or for cases that are non-routine in nature. In this instance any clothing, property, and extracorporeal material will be removed on arrival at the mortuary or after examination by the pathologist. Again an independent person should witness the forensic technician removing the clothing and property and sign the appropriate property sheets.

It should always be assumed that the family would like the clothing and property returned, regardless of the state. When this occurs, whether it is via the funeral director or the family directly, custody details should be recorded on the property sheet and co-signed by the two parties.

Suspicious Deaths

The preservation of evidence during victim recovery is of utmost importance for suspicious deaths. The body should only be touched or moved in consultation with the police, forensic scientists, and/or forensic pathologist. Prior to removal, the body should be carefully placed on a sheet of plastic and then into a body bag, which is sealed in the presence of investigating police members. The reasons for this process are twofold: (1) to ensure no fibers or trace evidence are lost; and (2) to maintain an appropriate chain of custody of the deceased, all clothing and property, and any evidentiary material present. In the majority of these cases, it is important that the deceased remains absolutely undisturbed before examination by the forensic pathologist. This ensures accurate interpretation of evident disturbances to the deceased, his/her clothing, and property. For example, in cases of sexual assault the disarray of clothing may provide the pathologist with an indication of such an assault, and might highlight the possibility of injury. In addition, the clothing folds may contain evidence such as semen, hairs, or fibers that would otherwise be disturbed in removing the clothing or transporting the body. Alternatively, folds or patterns in clothing where it is bunched about the deceased

may be causative of certain injuries, the interpretation of which is best performed in conjunction with viewing the clothing *in situ*.

In certain circumstances it may be advantageous to remove clothing or evidence at the scene, for example, to preserve blood-spatter evidence. This should only occur at the direction of the investigating police members and after specific consultation with the forensic pathologist. All personnel involved with a suspicious death should be trained in dealing with continuity of evidence and associated procedures. In such cases, a police officer should accompany the deceased to the mortuary and oversee the transfer of the body.

Specialized Cases

Hospital Deaths

The training of staff in these procedures, and specific advice regarding requirements given to nursing/hospital staff, ensures there is consistency between cases. In some cases, funeral directors and hospital staff may have “packed and prepared” the body before its removal from the ward to the mortuary. This preparation includes the body being laid in the anatomical position with the hands and feet tied and cotton wool being placed in all body orifices. These procedures should not occur in forensic cases as they may produce postmortem artifact or injury, which is sometimes difficult to interpret at a later stage. Occasionally, a case which initially seems straightforward and does not warrant further investigation turns out to be something more complex and as such may require more detailed forensic examination. Hence these procedures are important in every case. All treatment and resuscitation equipment such as intravenous lines or tubes, cardiac resuscitation pads, or wound dressings must be left *in situ* to be assessed as part of the autopsy examination.

Incinerated Cases

The peripheral parts of severely incinerated bodies, particularly small bones and teeth of the deceased, may be brittle, fragile, and at risk of being damaged or lost. Care should be taken both in transport and in preparation for transport. When stabilizing stretchers and bodies in bags or in vehicles care must be taken not to crush the fragile tissue. Elastic ties or “seatbelts” may be used in place of more rigid-type stabilizers.

In any case where the deceased is unrecognizable visually, establishing identity will be an important part of the investigation, and incineration of bodies makes the identification very difficult. A commonly used method is for a forensic odontologist to compare the antemortem dental records with the teeth of the

deceased person. The teeth and bones are often very brittle and fragile and teeth may be broken or lost during transportation to the mortuary. To prevent losing fragile teeth and bones, the head may be photographed *in situ* and then wrapped in cotton wool and/or bubble wrap, and supported by a plastic bag or container which is secured about the neck of the deceased. Thus if the teeth are dislodged they remain contained within the bag.

It is important that any body part found at the scene and not attached to the deceased is not assumed to belong to the deceased, and as such is bagged separately from the body and clearly labeled both in regards to its physical description and the specific location in which it was found, e.g., “tooth found in the vicinity of body X.”

After the body is moved, the ash and debris on the floor or ground in the immediate vicinity should be carefully searched and sifted to screen for teeth, small bones, or other matter important to the case. This sifting is most appropriately done at the mortuary where lighting is optimal and suitable equipment readily available. The debris should be bagged and labeled according to the section of body immediately above it, and should be transferred to the mortuary with the deceased.

Suicides

In many cases of suspected suicide, items contributing to the death are found on or near the body. In some cases this evidence may be the only indication of what may have occurred. It is thus important that anything attached to the body remains as such and its position is preserved as best as possible. This is to ensure the items can be examined with specific relation to their position on the deceased, in connection to additional devices, and any injury it/they may have caused. In rare cases this technique can help rule out the involvement of any other person in the death. In addition, as mentioned previously, if the evidence is removed before the pathologist’s examination the mode of death may be unclear. On occasion the item may have been removed on discovery of the deceased to assist with resuscitation. In this instance, care should be taken to ensure the items are bagged individually and clearly labeled for transportation.

For example, in a case of hanging, the ligature should remain intact and *in situ*. Where the deceased is suspended, the rope should be cut away from the suspension point, leaving the knots/attachments intact. If the ligature has been removed from the neck to facilitate resuscitation, the section of the ligature originally in contact with the deceased should be reconstructed, the ends tied together with string,

then bagged, labeled, and transported with the body. Where there is evidence that has legal requirements for transport, such as firearms, drugs, or volatile substances, the chain of custody of these items should be documented clearly and completely. The police or ballistics expert experienced in safe handling procedures usually transports or may offer advice in the handling of firearms and other dangerous weapons.

Case study 1 Police attended the premises of a residential unit and observed an 82-year-old female deceased in her bed. Her family had discovered she had passed away and phoned emergency services. Resuscitation was not attempted. On further investigation, it was discovered the female had no relevant medical history and death was not expected. She had been treated for depression following the death of her husband some five years previously. On learning of the necessity for autopsy, the next of kin informed police members that the deceased had initially been found with a plastic bag covering her head. This had been removed and concealed prior to their attendance.

Firearm Deaths

When a gun is fired, gunshot residues (GSR) are ejected from the weapon on to the hands and clothing of the person firing the weapon and, to a lesser degree, any persons in the immediate vicinity. Assessment of the presence and distribution of GSR on the individuals present at the scene of death can assist police with the inclusion and/or exclusion of suspects and assist them in determining the approximate position of other people present at the time of the event. Ideally, this assessment should be performed as soon as possible after the incident and before the transport of the deceased. In some instances this is neither practical nor timely, and it is recommended this procedure be done after the deceased is transported to the mortuary. In this situation any GSR on the deceased person must be preserved during transit. To do this, the deceased is transported in a sealed body bag, and the clothing of the deceased should remain undisturbed. In addition, paper bags are placed securely over the hands. It is essential that paper bags be used rather than plastic as the hands may sweat if contained in plastic, which can alter the presence of the GSR.

After the deceased is transferred on to a stretcher and removed from the scene, the immediate vicinity of the deceased is searched carefully for projectiles or spent cartridges. The body transporters must be aware of this as a projectile may be on the surface of the skin or in the clothing and as such there is a risk of disturbance when the body is initially moved.

Case study 2 A deceased man argued with his wife of many years. He had a well-documented social history of violent, abusive behavior, and a familiarity with guns. He locked himself in a spare bedroom when his wife stormed out after a particularly heated argument. She returned home some hours later to find him deceased on the bed with a gunshot wound to the head. The body was described and photographed. Two weapons were found in the immediate vicinity of the deceased and he had many additional weapons within the household. The case was reported to the coroner/medical examiner as suspected suicidal gunshot wound to the head. On admission to the Forensic Institute, four gunshot wounds were noted. The case was radiographed and found to contain no projectiles. The projectiles were later found, one having entered the neck, exited through the top of the head, and embedded in the ceiling. The other dislodged in transit and was found amongst the clothing of the deceased. On the basis of this information, the location and track of the two wounds, and the results of samples taken from the hands of the deceased for analysis of GSR, the pathologist was satisfied that this was a rare case of gunshot suicide involving two weapons fired simultaneously.

A number of precautions were taken at the scene prior to transport of the deceased, which may have impacted on the outcome of the case. These included:

- wrapping the head of the deceased in cotton wool to preserve the presence and situation of projectiles
- securing the hands of the deceased in paper bags to promote sampling for GSR
- photographing the deceased *in situ* with the two weapons in the immediate vicinity, demonstrating the patterns of blood spatter on the wall behind the deceased and a defect in the ceiling from one of the projectiles.

Decomposed Bodies

Dealing with a decomposed body involves a number of associated risks. Flies and maggots are often present, as are spiders, beetles, and other insects. The decomposing body presents a difficult situation, in terms of body removal, which may be dealt with in a number of ways. The body may be very bloated or fragile, and sometimes beginning to break apart. Moving a severely decomposed body can complicate this process further and if care is not taken, may result in the removal of skin and/or the detachment of limbs. To overcome this, rather than lifting the body on to plastic, it should be carefully rolled on to its side, and the plastic tucked underneath the deceased. The body can then be lifted using the plastic to hold

the remains intact and gently placed into a body bag. Care should be taken to avoid being bitten or stung; however, fly spray or deodorizer should not be used on the body as it may interfere with toxicological and/or microbiological testing. Fluid-filled blisters, called buboes, may rupture and splash body transporters, and appropriate safety attire should be worn.

Skeletal Remains

The process of recovering skeletal remains is slow and meticulous as the soil and vegetation deposited after the death are removed layer by layer without disturbing the skeleton. The bones are packed in paper bags either grouped or separately depending on the case. It is recommended that the skull is wrapped in cotton wool and supported by a box or container, similar to the procedure used when recovering incinerated remains. In some circumstances where some tissue is still attached to the bones, and the deceased is not completely skeletonized, it may be more beneficial to slide a large board underneath the deceased and lift the remains with the board, keeping it intact for transportation. As with incinerated bodies, the soil around the deceased should be bagged, labeled, and sifted later to search for teeth, small bones, and other evidence.

Diving Fatalities

The recovery of diving fatalities presents one of the more difficult situations in body removal. The equipment may provide vital information as to the cause of death or the circumstances immediately before death and thus it must all remain intact and accompany the deceased. This procedure makes for a bulky and awkward body transfer. Ideally an expert should be present at the scene to examine the equipment, ensuring all valves are turned off, and settings are secure so as not to be accidentally altered during transit. In diving fatalities, radiography for air embolism should be performed as soon as possible. In light of this, it is crucial that the body be transported as quickly as possible to the mortuary.

Biohazard Cases

Universal precautions to minimize the spread of infectious disease should be employed with every body removal regardless of its infectious state, and all bodies treated as potentially infectious; personal protective equipment should always be worn. However, certain cases are deemed high risk purely due to their nature. These high-risk cases include intravenous drug users, prostitutes, homosexuals, or persons recently imprisoned. If this is the situation, extra care should be taken to avoid contact with body fluids,

and safety glasses, surgical masks, and double gloves may be worn. Staff should always be observant for sharps and other foreign objects. To prevent splashes, a towel or absorbent material can be placed over any open wounds, or the face of the deceased person. In cases where there is identified a risk for airborne biohazard such as tuberculosis or severe acute respiratory syndrome (SARS), a towel should be placed over the face to prevent the escape of sputum or other fluids, and an appropriate face mask or respirator worn by the body transporters.

Chemical, Biological, and Radiological Hazards

Before a chemically contaminated body is recovered and transported, the chemical must be identified and assessed to ensure the appropriate precautions are taken to maintain a safe work environment. In many instances, once the body is removed from the scene the level of contamination is low. However, each situation needs to be separately and fully assessed on an individual basis. Representatives from Environmental Protection Agency (EPA) and/or Work Safe or similar occupational health and safety authorities may be able to offer advice on specific risks.

If the chemical cannot be identified, the case should be treated as highly toxic and maximum protection should be worn by workers. In extreme cases the body is decontaminated prior to removal. To do this, it is recommended the body be photographed *in situ*, and then the clothing and property removed, bagged, and labeled. Scene workers wearing self-contained breathing apparatus should then repeatedly hose the deceased. Generally, the fire brigade controls the scene, and only personnel trained in decontamination procedures should enter. In any case where there is suspicion of chemical contamination, a safety officer should be assigned to monitor the level of toxic fumes continually and ensure that the safety of the staff is adequate.

Disaster Victim Identification

In the event of a mass disaster, body recovery can be crucial in assisting in both the final identification of the deceased person, and the reconstruction of the events just prior to the incident. The international disaster victim identification (DVI) forms published by Interpol are well recognized as the preferred method for documenting body recovery and identification in the event of a disaster. Systematic recording and accurate descriptions of deceased persons involved in a mass fatality incident are essential to facilitate adequate reconstruction of the event. The likelihood of some element of criminality being associated with the

event is high. In light of this, all deceased persons should be treated as suspicious deaths irrespective of the size, location, or type of disaster.

The DVI protocol consists of five phases:

- phase 1 – the scene
- phase 2 – the mortuary
- phase 3 – antemortem retrieval
- phase 4 – reconciliation
- phase 5 – debriefing.

Phase 1

Once the injured have been triaged and removed from the scene, the scene should be secured. DVI scene teams are formed. These teams consist of a crime-scene examiner, a photographer, and a recorder. A pathologist and a forensic odontologist support each team.

The location of each body or specimen is recorded such that it is related to a known reference point, usually a grid reference. A unique DVI number is given to each body or body part. Property not attached to a body is also recorded with reference to its location and handed to a property officer.

The Interpol DVI form B is completed and the body or body part is moved to an appointed holding area. During phase 1 the pathologist certifies death and assists with the identification of body parts.

Phase 2

The body is transported to the mortuary in a body bag. Once at the mortuary, the body is radiographed and autopsied. The autopsy involves the assistance of DVI autopsy teams. These teams consist of a recorder, an examiner, and a photographer.

With the assistance of a pathologist and a forensic technician, the DVI teams record and photograph all the clothing and property. Once the body has been photographed, identifying features such as hair color, eye color, scars, and tattoos are recorded.

The autopsy is performed and the recorder again documents all details that may be utilized during the identification, such as the presence of an appendix, gallbladder, foreskin.

A forensic odontologist examines the teeth of the body, and fingerprint personnel take fingerprints where appropriate. During the autopsy examination a sample of blood or tissue is retained for DNA analysis and comparison.

These details are all recorded on DVI Interpol forms C1 to G.

Phase 3

Trained police personnel interview family members of missing persons (presumed to have died in the mass disaster) to gather information regarding all identifying features of that person. This includes the color and type of clothes that the person may have worn and other identifying features such as hair color, eye color, scars, and tattoos. They are also responsible for gathering the dental and medical records, and where relevant the collection of antemortem samples for DNA comparison.

Phase 4

Antemortem forms and postmortem forms completed during phases 1 and 2 are compared during the reconciliation phase. This comparison is achieved systematically using a reconciliation chart and grouping each set into male and female, black and white, and ages 0–15, 15–75, 75 plus. If in doubt, the deceased is placed in the 15–75 group. The final identification of each case is presented to the coroner along with an appointed identification panel for the final decision and authority to confirm identity.

Phase 5

It is essential for all staff involved in the body recovery of a mass disaster to undergo debriefing. This process could involve a “hot” debriefing immediately after the event and at the end of each working day, and could also involve a later debriefing which also examines the procedures utilized and ways of improving these processes.

Summary

All personnel should be aware that any action in handling a deceased person prior to examination at a mortuary may impact the manner in which the case is treated in ongoing investigations. It is vital that suitably qualified medical personnel, e.g., forensic pathologists, are consulted before any steps are taken to retrieve, secure, and transport the deceased.

This article is designed to offer some instruction to those persons performing body retrieval from a scene of death. It is in no way suggesting that these persons should replace the role of the forensic pathologist. It should be emphasized that all steps taken to secure the body that may interfere with the deceased in any way should occur only after examination or observation of the deceased by a forensic pathologist and should always be appropriately documented.

See Also

Crime-scene Investigation and Examination: Major Incident Scene Management; Recovery of Human Remains;
Crime-scene Management, Systems: Continental Europe; United Kingdom; United States of America

Further Reading

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Brain Death See **Medical Definitions of Death**