



ICRC

COVID-19: GENERAL GUIDANCE FOR THE MANAGEMENT OF THE DEAD

ICRC FORENSIC UNIT



This document provides guidance on the management, or handling, of the remains of people believed or confirmed to have died from coronavirus disease (COVID-19). It is meant to give a practical overview of key recommendations for managing infectious human remains to practitioners, managers and planners, including decision-makers involved in the overall response to the COVID-19 pandemic. It complements existing guidance on managing the dead in situations requiring the advice and support of the International Committee of the Red Cross (ICRC).

The document is divided into two parts:

- 1 Management of the dead linked to COVID-19: Technical recommendations for health-care and death-care workers
- 2 Long-term response to increased deaths from COVID-19: Preparatory guidelines for a mass-fatality response plan.

The document is intended for those directly or indirectly involved in the management of the dead during the pandemic. Part 1 provides general guidance and support for the management of the dead. Part 2 provides general guidance and support to the authorities in their response to an increase in deaths during the pandemic.

The planning and implementation of activities around managing the dead should be always framed by the following fundamental principles, and COVID-19 is no exception:

- The safety and well-being of staff involved in managing the dead from COVID-19 should be the utmost priority. To this end, forensic best practices required for these activities should always be informed by the advice and latest recommendations for health personnel handling COVID-19 cases from national health authorities and international health organizations, especially the World Health Organization (WHO).
- The dignity of the deceased and their loved ones must be respected throughout the process. This is a humanitarian imperative that should guide the management of the dead in all circumstances.
- Every effort should be made to ensure the dead are reliably identified, failing which human remains must be properly documented and traceable to enable their future recovery and identification. This will help prevent the deceased from becoming missing persons.
- Measures for managing the dead need to recognize the interests and rights of families and communities and afford families utmost respect in accordance with their cultural and religious needs.
- The process for managing the dead from COVID-19 should not impede medicolegal investigations of deaths where required by the authorities (e.g. suspicious deaths or deaths in custody), but additional health and safety precautions should be adopted for the necessary post-mortem procedures.

In view of the rapid evolution of the COVID-19 pandemic, the novelty of the illness and the pace of new information emerging about the virus, its effects and how to control it, this document provides general recommendations and relevant references, which are based on evidence obtained so far and will be updated as necessary.

The measures required for effectively assisting in the management of large numbers of dead from COVID-19 will likely necessitate more human and material resources, including to build local capacity and support and/or carry out the recovery and identification processes.



**COVID-19:
GENERAL GUIDANCE
FOR THE MANAGEMENT
OF THE DEAD**

ICRC FORENSIC UNIT

This guidance should be read in conjunction with the general guidance for managing dead bodies contained in *Management of Dead Bodies after Disasters: A Field Manual for First Responders* (ICRC, WHO, and International Federation of Red Cross and Red Crescent Societies (IFRC), 2016). The manual contains the general procedures to be followed when recovering and identifying the remains of people known or suspected to have died from COVID-19.¹ Additional references are included at the end of this document.

PART 1 MANAGEMENT OF THE DEAD LINKED TO COVID-19

TECHNICAL RECOMMENDATIONS FOR HEALTH-CARE AND DEATH-CARE WORKERS

This section provides guidance on the measures required for effectively managing the large numbers of dead from COVID-19. Such measures will likely necessitate increased human and material resources, including to build local capacity and support and/or carry out the recovery and identification processes.

IMPORTANT CONSIDERATIONS FOR COVID-19²

SARS-CoV-2, the virus which causes COVID-19, is classified as a hazard group 3 (HG 3) pathogen, like HIV and the tuberculosis bacterium. In some infected people it may cause a severe and acute respiratory syndrome which can be fatal, especially for the elderly. There is still no vaccine or effective cure for COVID-19, and treatment is symptomatic. Much is unknown about the virus. Current knowledge is largely based on what is known about similar coronaviruses. Coronaviruses are a large family of viruses that are common in many different species of animals. Rarely, animal coronaviruses can infect people and then spread from person to person, as was the case with Middle East respiratory syndrome (MERS) coronavirus, severe acute respiratory syndrome (SARS) coronavirus and now SARS-CoV-2.

The virus is known to spread mainly person-to-person:

- between people who are in close contact with one another (within about two meters, or six feet)
- through respiratory droplets or aerosols produced when an infected person coughs or sneezes
- from splashes of an infected person's bodily fluids.

Working in environments overcrowded with people who have SARS-CoV-2 (e.g. collecting the dead from an overcrowded detention facility) presents risks, but if properly used the personal protective equipment (PPE) recommended in this document will provide adequate protection.

It may be possible to get SARS-CoV-2 from contact with surfaces or objects contaminated with the virus by touching them and then touching your own mouth, nose or eyes.

The virus is normally known to survive a few hours outside the host, but this may extend to days in cold and damp conditions. The virus is easily neutralized with standard disinfectants, such as bleach and ethanol solutions.³

-
- 1 Please note that annex 6 in the manual ("Dealing with the bodies of persons who died from an epidemic of infectious disease") was drafted for handling the dead from hazard group 4 (HG 4) pathogens such as Ebola virus – the most hazardous pathogens. Therefore, some of the guidance provided for in the annex is excessive for COVID-19, including recommendations on the personal protective equipment and disinfection procedures required as well as on the disposal of bodies. Pan American Health Organization, WHO, ICRC and IFRC, *Management of Dead Bodies after Disasters: A Field Manual for First Responders*, 2nd ed., Geneva, 2016, all web addresses accessed 7 May 2020.
 - 2 From: Centers for Disease Control and Prevention (CDC), *Collection and Submission of Postmortem Specimens from Deceased Persons with Known or Suspected COVID-19, March 2020 (Interim Guidance)*, CDC, Atlanta, 25 March 2020; M. Osborn et al., *Briefing on COVID-19: Autopsy Practices relating to Possible Cases of COVID-19*, The Royal College of Pathologists, London, February 2020.
 - 3 See: G. Kampf et al., "Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents", Journal of Hospital Infection, Vol. 104, 6 February 2020, pp. 246–251, <https://doi.org/10.1016/j.jhin.2020.01.022>.



**COVID-19:
GENERAL GUIDANCE
FOR THE MANAGEMENT
OF THE DEAD**

ICRC FORENSIC UNIT

Any post-mortem activities, including recovery, transport, autopsy, handover to families and burial, should be carried out with a focus on avoiding generating aerosols and splashing bodily fluids. If aerosol generation is likely (e.g. when using an oscillating saw, which is not recommended) appropriate engineering controls and PPE must be used, contaminated surfaces and equipment must be regularly disinfected, and thorough personal hygiene, especially hand-washing, must be rigorously observed. Employing these precautions in addition to standard precautions should prevent direct contact with infectious material, percutaneous injury and hazards related to moving heavy remains and handling embalming chemicals.

GENERAL PRINCIPLES FOR MANAGING HUMAN REMAINS INFECTED WITH SARS COV 2

- Any activity undertaken in relation to the management of known or suspected COVID-19 fatalities must be preceded by a preliminary evaluation and risk assessment. (See also Part 2 below)
- Staff responsible for recovering and identifying the remains of people who have, or may have, died from COVID-19 must be specifically trained in managing the dead and using PPE. Operations should be supervised by suitably qualified staff, at a minimum forensic professionals who are trained and experienced in managing the dead in challenging circumstances.
- The procedures adopted must limit staff's exposure to SARS-CoV-2, avoid to the extent possible further spreading SARS-CoV-2, allow for the timely and accurate recovery and identification of human remains, and respect the dignity of the dead at all times.
- Where potential conflicts arise between prevailing cultural practices and safeguards to prevent further exposure to and propagation of the virus, the safeguards must take precedent, and efforts should be made to ensure that this is understood, accepted and supported by the community, religious authorities and next of kin.

TECHNICAL RECOMMENDATIONS FOR BODY HANDLERS

“Body handler” refers to any individual involved in physically handling human remains. This includes, among others: health-care practitioners and health-care assistant personnel; and death-care workers, including forensic doctors, pathologists and other forensic experts, autopsy technicians, non-forensic personnel charged with recovering and transporting human remains, and individuals involved in preparing bodies for disposal, funerals or other commemorative events. Body handlers should take special precautions when handling the remains of individuals that have died from COVID-19, including the following:

- Use standard PPE:
 - Gloves – ensure that gloves are unpunctured; nitrile gloves are preferred.
 - Aprons/long-sleeved gowns/overalls to protect skin and clothing from contamination by infected material.
 - Eye protection – goggles/face shields.
 - Face masks – FFP2, FFP3 masks or N95 respirators are currently considered the best choice for preventing inhalation of aerosols and shielding the nose and mouth from splashes during the body-handling process. See the table below.
- Shoe protection is recommended.
- If there is a risk of cuts, puncture wounds or other injuries that break the skin, wear heavy-duty gloves over nitrile gloves.
- Use sturdy body bags (e.g. at least 250 microns thick, non-biodegradable and optimized against leaks), or double bag the body if the pouch/bag is thin and may leak. Extra care should be taken for cases of repeated manipulation over time during the earlier phases of the body handling.
- Disinfect any non-disposable equipment used while handling remains as per standard practice.
- Dispose of used PPE. Used PPE should be properly disposed of so as to avoid contact with people, food, drink, or eating and drinking utensils. Biohazardous waste incineration is best.
- Avoid contact with your face and mouth, as well as food, drink, or eating and drinking utensils, when handling bodies.
- Rigorously wash your hands after handling bodies and prior to eating or drinking.
- Do not engage in any other activity during the body-handling or preparation process.
- Following the body-handling or preparation process, rigorously wash your hands and disinfect any surfaces that may have come in contact with the infectious body.



**COVID-19:
GENERAL GUIDANCE
FOR THE MANAGEMENT
OF THE DEAD**

ICRC FORENSIC UNIT

- Be aware of any hazards, in addition to SARS-CoV-2, which may be present in the environment and at the location of the body.
- Human remains with SARS-CoV-2 continue to pose a cross-contamination hazard for some time after they have been recovered (hours and possibly days).⁴
- The deceased's personal effects may also continue to pose a cross-contamination hazard. If they are to be returned to next of kin, carefully consider how best to decontaminate the items to avoid endangering the health of whoever receives them.
- Similarly, documentation created during the recovery, transport, examination, storage and burial processes may become contaminated with the virus and should be disinfected accordingly.
- The process of recovering and identifying infectious human remains will generate waste products which are also potentially contaminated. Carefully consider how to manage and dispose of waste so as to avoid compromising the safety of those involved and spreading SARS-CoV-2.
- Transport bodies to the mortuary (or the disinfection location, if no post-mortem examination will occur) as soon as possible.

TRANSMISSION-BASED PRECAUTIONS: PPE FOR THE CARE OF THE DECEASED DURING THE COVID-19 PANDEMIC⁵

	Low-risk procedures:*	Medium-risk procedures:**	High-risk procedures:
	<ul style="list-style-type: none"> admitting deceased preparing for viewing releasing deceased 	<ul style="list-style-type: none"> rolling deceased undressing deceased significant handling 	<ul style="list-style-type: none"> autopsy other invasive procedures
Disposable gloves	Yes	Yes	Yes
Disposable plastic apron	Yes	Yes	Yes
Disposable gown	No	No	Yes
Fluid-resistant (Type IIR) surgical mask	Yes	No	No
Filtering facepiece (FFP) respirator***	No	FFP2 or FFP3	FFP3
Disposable eye protection	Yes	Yes	Yes
Shoes / shoe protection (ideally boots that can be easily disinfected)	Yes	Yes	Yes

*If the procedure is likely to cause contact with droplets, use the protocol for medium-risk procedures.

**If the procedure is likely to generate aerosols, use the protocol for high-risk procedures.

***The European Centre for Disease Prevention and Control recommends the use of FFP3 masks for performing aerosol-generating procedures. In case of shortage of Class 3 respirators, the use of Class 2 respirators (i.e. FFP2) may be considered on a case-by-case basis and after assessing the risks of the procedures required.

⁴ G. Kampf *et al.*, "Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents", Journal of Hospital Infection, Vol. 104, 6 February 2020, pp. 246–251, <https://doi.org/10.1016/j.jhin.2020.01.022>

⁵ Table adapted from: Department of Health and Social Care et al., *COVID-19: Guidance for Infection Prevention and Control in Healthcare Settings*, GOV.UK, 27 April 2020.



COVID-19: GENERAL GUIDANCE FOR THE MANAGEMENT OF THE DEAD

ICRC FORENSIC UNIT

CONSIDERATIONS FOR POST-MORTEM EXAMINATIONS

Deaths known to be caused by COVID-19 are natural deaths and in general would not require a full post-mortem examination. However, examinations may be required in certain circumstances (e.g. for deaths in custody⁶) or when other causes of death are suspected (e.g. accident, suicide or homicide), regardless of whether the deceased had COVID-19. The decision to carry out a full or partial post-mortem examination is normally the responsibility of the authorities in the jurisdiction (e.g. coroners, prosecutors or judges), sometimes after discussions with investigators and forensic doctors.

For conducting autopsies, the following additional PPE is recommended: two pairs of surgical gloves with cut-proof synthetic mesh gloves in between, a fluid-resistant or impermeable gown, a waterproof apron, goggles or a face shield, and an FFP3 mask or a NIOSH-certified disposable respirator (N95 or higher). For further guidance, please refer to [Briefing on COVID-19: Autopsy Practices relating to Possible Cases of COVID-19](#).

SPECIAL CONSIDERATIONS FOR UNIDENTIFIED BODIES

The forensic procedures recommended by the ICRC for identifying the dead can be used for those who have died from COVID-19 where required. However, certain caveats apply:

- The remains of people who have died from COVID-19 may still be infectious and therefore hazardous to unprotected people, so visual identification by next of kin should be strictly controlled and follow the necessary precautions, including the use of PPE. Furthermore, because recovery operations may be complex and therefore take more time, remains may have decomposed beyond the point where visual identification is possible by the time they are recovered.
- All those involved in the examination and identification process of human remains known or believed to be infected with SARS-CoV-2 are required to wear appropriate PPE, which has an impact on the wearer's dexterity and their ability to use fine motor skills. In addition, performing invasive techniques may increase the risk of staff being exposed to the virus. For these reasons, invasive techniques should be avoided wherever possible.
- The extra safeguards required for handling infected remains may increase the time required for the identification and post-mortem processes as well as the physical burden on the staff undertaking them.
- Where remains must be identified (and examined post mortem), this should be done in a temporary holding area. This will help avoid overwhelming and contaminating normal mortuary facilities and endangering their staff, who will be expected to operate as usual.

5

SPECIAL CONSIDERATIONS FOR TEMPORARY HOLDING AREAS

The purpose of a temporary holding area is to serve as a place where recovered human remains with SARS-CoV-2 can be safely stored until arrangements can be made for their disposal.

Where recovered remains continue to pose a risk of cross-contamination, staff working in the temporary holding area (including those involved in the identification and post-mortem processes) must always wear appropriate PPE. Particular attention must be paid to contamination control within the temporary holding area. Depending on the type and persistency of the agent to which the remains have been exposed, some or all of the following measures may be necessary (to be adapted as our knowledge of COVID-19 evolves):

- Disinfecting body bags upon their arrival at the temporary holding area.
- Placing body bags containing remains inside second bags.
- Disinfecting the outer bag following the identification or post-mortem procedure.
- Wearing two layers of gloves (the outer pair being nitrile gloves). This should be done by all personnel when handling body bags or remains to reduce cross-contamination.
- Keeping records of all movement of human remains within the temporary holding area, and ensuring strict adherence to health and safety protocols at all times. There must also be a constant line of communication between the temporary holding area and the team coordinating the overall process.

⁶ ICRC, [Guidelines for Investigating Deaths in Custody](#), ICRC, Geneva, 2013.



COVID-19: GENERAL GUIDANCE FOR THE MANAGEMENT OF THE DEAD

ICRC FORENSIC UNIT

SPECIAL CONSIDERATIONS FOR DISPOSAL OF REMAINS / HANDOVER TO RELATIVES

- Where transportation of the body is required, the body bag containing the remains should be placed in a second body bag. (If the remains have already been double-bagged, the outer bag should be removed and replaced with a new bag.) The outer bag should be thoroughly disinfected prior to release of the remains.
- Cremation of unidentified human remains should be avoided; burial in single graves is the preferred method of disposal. However, care must be taken to ensure that run-off from grave sites with decomposing remains is managed so as not to contaminate ground water. Bodies should be buried in their respective body bags, regardless of whether coffins are used. This serves both to aid future recovery and examination of the remains if necessary (e.g. for identification) and to dispose of the body bags safely.
- For more information on this subject, please refer to annex 7 of *Management of Dead Bodies after Disasters: A Field Manual for First Responders*.
- Personal belongings of those who have died from COVID-19 may present a cross-contamination hazard. Consideration should be given to decontaminating such items prior to handing them over to the next of kin in order to avoid the spread of contamination and associated health risks. When decontamination is not possible, careful consideration must be given to whether the items should be given to the next of kin or stored for later safe release. If it is decided to dispose of the items as contaminated waste, they should be documented along with the reason for their disposal.

CONSIDERATIONS FOR DISINFECTION PROCEDURES

- Disinfection procedures can be divided into two categories: procedures for staff responsible for managing the dead (along with their equipment), and those for human remains. The objectives of disinfection are to protect the health and safety of those handling the dead and to prevent the spread of contamination.
- The planning process should determine the most effective disinfection procedures, including processes for managing waste generated by decontamination.
- The recommended approach is to place human remains into two body bags at the site of recovery and to disinfect the outer bag.
- Disinfection of the body is not advisable, mainly because bodies may release the virus through aerosols or droplets from the respiratory system or other fluids). In addition, vigorous disinfection of bodies or body parts may destroy forensic evidence or obscure identifying marks and make identification more difficult.
- The disinfection of body bags should follow the standard procedures for COVID-19 and use recommended disinfectants.
- Disinfection procedures for staff should follow the method defined for the PPE they wear.
- Before any equipment is removed from the temporary holding area after disinfection is complete, care must be taken to ensure that it does not present a cross-contamination hazard.
- Any equipment which cannot be disinfected must be disposed of as infected waste, following standard biosecurity procedures. This usually requires controlled storage, transport and incineration.

PART 2

LONG-TERM RESPONSE TO INCREASED DEATHS FROM COVID-19

PREPARATORY GUIDELINES FOR A MASS-FATALITY RESPONSE PLAN

There is a high risk of a significant and rapid increase in fatalities overwhelming local capacities owing to the additional pressure placed on the health-care and medicolegal systems as well as on other service providers involved in the management of the dead. If many people are infected, it is possible that not all will receive medical attention, leading to undiagnosed deaths requiring medicolegal intervention. **This section provides guidance for decision makers and leaders of relevant institutions planning a response to a potential increase in deaths that would overwhelm normal capacities.** It should be read together with annexes 4 and 5 of *Management of Dead Bodies after Disasters: A Field Manual for First Responders*.

Below are essential elements that should be addressed by health ministries, justice ministries, interior ministries, foreign affairs ministries, cabinets, heads of government and, if they exist, disaster-management offices when implementing an existing mass-fatality response plan (as part of a national disaster-management plan) or in the absence of such a plan. If a crisis-management coordination centre exists, it should be engaged to coordinate the emergency response, including management of the dead. In the absence of a crisis-management coordination centre, or in case the centre has not incorporated management of the dead into its response, **a coordination group should be established with the main contacts from relevant institutions.** Medicolegal or forensic services experienced in managing the dead in emergencies, including infectious bodies, should be consulted for advice and included in the design and implementation of preparedness plans. This document focuses on circumstances specific to mass fatalities due to infectious diseases such as COVID-19, but most of the following recommendations should be part of an existing mass-fatality response plan.

7

In the absence of an existing plan, the following provides general guidance on the essential elements of a mass-fatality response plan. Concrete measures based on the steps in the process for managing the dead are also recommended to address the increased number of deaths quickly and with an integrated and comprehensive response.

ESSENTIAL ELEMENTS OF A MASS-FATALITY RESPONSE PLAN

- *Policy and practice should uphold the dignity of the dead and must demonstrate respect towards the deceased individuals and their families.*
- *The death-management process should allow for operating under the pressure of many cases while maintaining the welfare of staff and affected communities.*
- *The families of the deceased should be provided with relevant information. Ensure proper communication with the public.*
- *Constant and effective communication and coordination between all agencies involved and other service providers is essential.*

- A national disaster-management plan should always include a mass-fatality response plan that has been drafted with the input of relevant authorities to carry out proper management of the dead, ensure the dignity of and respect for deceased individuals and their families, and undertake investigations where appropriate. The plan should be a framework for coordination that identifies key institutions and individuals and their roles and responsibilities. There should also be operational guidelines with specific actions that need to be carried out for legal inquiries or investigations into deaths.
- The mass-fatality response plan should lay out a multi-agency communication and coordination strategy for all those involved in the response. This ensures that all parties understand their



COVID-19: GENERAL GUIDANCE FOR THE MANAGEMENT OF THE DEAD

ICRC FORENSIC UNIT

responsibilities and the agreed-on, standardized and complementary activities and practices that will respect the interests of all parties, including the public.

- The mass-fatality response plan should also lay out the criteria and mechanisms for implementing mass-fatality management. This includes the legislation on various authorities' responsibilities, the stages of the response and the command and control structure. The plan helps ensure that reporting lines are followed at all levels and by all those involved to carry out their respective responsibilities.
- Routine death inquiries or investigations should confirm the identity of the deceased and where, when, how and by what means they died. These investigations are carried out for all sudden, unexpected or unexplained deaths, including unexpected deaths from an outbreak of infectious disease such as COVID-19.
- Not all deaths from COVID-19 will occur in a medical facility. Therefore, proper training and supervision must be provided to first responders who may be faced with COVID-19 deaths to ensure safe management of the death scenes.
- Basic practices for managing the dead are essential and should be followed in all cases. They are particularly important when deaths increase sharply, placing stress on both human resources and facilities' capacities.
- The response must provide for giving adequate attention to the families of the deceased.
- A public communications and media strategy, carried out through designated communications centres and/or broadly accessible networks, should provide for regular, reliable and transparent communication to the public. The plans and operations of the various entities participating in the response should be relayed through regular updates and progress reports. Standard operating procedures must be established to ensure compliance with legislation on the protection of personal information.
 - The mass-fatality response plan should not merely direct how bodies should be handled and/or disposed of. On the contrary, the plan should set out operational practices and the supporting financial, administrative and logistical systems that will ensure that all aspects of the death-management process are professional and dignified: search, recovery, examination, identification, storage and handover to families for burial. Each step should be documented in a standardized way; this documentation will contain important information that should be protected and centralized not only for the purposes of legal investigations and inquiries but also for planning, operations, logistics, administration and finance, and reporting. The plan should also specify policies and procedures for managing unclaimed and unidentified bodies and documenting their location and identifying features for future use. Each phase of the plan requires a thorough understanding of existing capacities and capabilities as well as identification of areas where solutions are needed.
 - The mass-fatality response plan should describe occupational health and safety requirements that protect first responders and practitioners. It should lay out risk-assessment criteria and establish a mechanism for educating first responders about how to reduce their risk of infection during infectious-disease outbreaks. Equally, it should provide for training first responders, mortuary personnel, laboratory technicians and other individuals involved with handling human remains on contamination control, safety equipment and PPE. It should also emphasize the importance of relaying safety information to families and the communities where infectious bodies were recovered to reduce further contamination.
 - Mass graves are **highly discouraged**. They are often a demonstration of poor planning by authorities, and they show a disregard for the wishes, customs and religious rites of families and communities. Single graves are respectful and dignified, and they facilitate locating human remains. This can only be accomplished, however, by collaborative planning between authorities, other relevant parties – such as funeral homes, crematoriums and cemeteries – and, most importantly, the families.
 - Mass-fatality events often include the deaths of foreign nationals. It is important to follow internationally accepted best practices and procedures that promote the dignified and professional



COVID-19: GENERAL GUIDANCE FOR THE MANAGEMENT OF THE DEAD

ICRC FORENSIC UNIT

management of the dead, and to engage respectfully with people of different backgrounds, cultures and religions. This will aid in navigating the sometimes complex administrative and legal procedures of foreign governments when seeking to repatriate bodies or to notify relatives living abroad of a loved one's death. Shipment of bodies across international boundaries may be delayed until the infection is deemed no longer transmissible. Airline companies expected to ship bodies should be included in planning.

1 MANAGEMENT AND COORDINATION

- Identify the ministry or department leading the coordination of the government's response.
- Identify a contact at each of the agencies, including medicolegal and forensic services and other service providers responsible for managing the dead and interacting with their families, and clarify roles and responsibilities around the various phases of managing the dead, such as recovery and transport, post-mortem examination (if required), identification, storage and disposal or handover and burial of bodies, death registration and providing information and attention to families.
- Establish a coordination group with a multi-agency approach. It is important to include hospital administrators, religious authorities, municipal services, cemeteries and crematoriums for a truly integrated response. While not involved in the planning process, the private sector is a key resource and should be engaged to the extent possible under local regulations.
- Ensure a proper response is in place to cover all aspects of the process for managing the dead, including the needs of law-enforcement agencies where cases require investigation.
- Local authorities should ensure that any participating volunteers or private businesses follow the established procedures.
- It is important to have a good understanding of local capacities for managing the dead – mainly in relation to transport, storage and disposal of bodies – as a baseline for determining the next steps in the multi-agency approach.
- Ensure there is sufficient capacity in terms of infrastructure, human resources, materials and PPE to respond to the increase in deaths. If there is not, the coordination group should turn to alternatives for the required support.
- Ensure management or coordination staff at the various entities involved provide clear procedures and recommendations for handling bodies.
- Managing the dead, particularly transporting bodies, may pose additional health and safety issues to staff, such as the physical toll of handling bodies from repeatedly lifting large weights, prolonged exposure to cold temperatures and hazardous substances, and psychological trauma. Ensure that staff working under these conditions have their needs responded to and receive adequate support.
- Any activity undertaken in relation to managing known or suspected COVID-19 fatalities must be preceded by a preliminary evaluation and risk assessment. The evaluation should include a determination of the number, location and condition of bodies, including their COVID-19 status.

9

2 RECOVERY AND TRANSPORT OF THE DECEASED

In the event of increased deaths, moving bodies between homes, hospitals, mortuaries, cemeteries and body storage will require large numbers of staff for handling bodies and vehicles for transporting them. Make arrangements for transporting dead bodies with the following questions in mind:

- What legislation and regulations are in place, including around occupational health and safety?
- Who is responsible for transporting bodies?
- Do they have the necessary capacity?
- Are the police or judicial authorities involved?
- Where should bodies that are or may be positive for COVID-19 be transported? Is there a specific morgue or mortuary where they should be taken?
- At what point will the number of casualties exceed current capacities for transporting bodies? Identify the support required in terms of vehicles, infrastructure, materials and human resources.
- What alternatives sources of support exist if current capacities are exhausted? Ensure they under-



COVID-19: GENERAL GUIDANCE FOR THE MANAGEMENT OF THE DEAD

ICRC FORENSIC UNIT

stand their role in the broader response.⁷ Do they know of and understand the required safety and precautionary measures?

- Will these alternative sources of support have the necessary insurance coverage?
- For recommended body-handling procedures, see “Technical recommendations for body handlers”, on p. 4.

3 DEATH CERTIFICATES AND DEATH REGISTRATION

- What regulations are in place? Is there any specific guidance or regulation to consider in a pandemic? For example, normally a physician certifies a death, but who certifies a death if there is no witness, such as when someone suspected to have COVID-19 dies at home? Is an autopsy mandatory?
- In the case of deaths in detention, what regulations must be followed? Consider working with law enforcement and other authorities to adapt in the case of a large increase in deaths.
- Who is responsible for issuing the death certificate and who is responsible for registering the death?
- Do they have the capacities necessary if deaths increase sharply? Are there measures in place to ensure, for example, there are enough doctors to sign death certificates and officials to register deaths? Bear in mind that government offices may not be working or may have reduced their activities, social distancing measures may be in place, etc.

4 POST-MORTEM EXAMINATIONS IN GENERAL AND WITHIN THE MEDICOLEGAL DEATH-INVESTIGATION SYSTEM (INFECTIOUS AND ROUTINE CASES)

- Review existing legislation around infectious diseases (e.g. for influenza).
- Local authorities should take measures to ensure that medicolegal services continue to be provided. A contingency plan should be established to properly carry out management of the dead, for both COVID-19 deaths and other fatalities, especially when the bodies are taken to the same facilities.
- Families of the deceased should be properly informed of any delays, the measures that have been taken, etc. Establish plans to communicate with families for both COVID-19 deaths and other fatalities.
- Consider how to use judicial and forensic resources efficiently to improve decision-making in cases that require medicolegal attention, what additional forensic resources could help in managing the dead from the pandemic, how to distribute cases, if possible, etc.

10

5 BODY STORAGE

- It is important to differentiate between body storage and temporary mortuaries. Each serves different purposes. Emergency body storage addresses the need for temporary storage space when a surge in deaths from emergencies exhausts existing storage capacity; temporary mortuaries address the need for additional medicolegal infrastructure (e.g. in emergencies) and include autopsy rooms and laboratories. A sudden increase in COVID-19 fatalities is likely to require additional body storage capacity and possibly also temporary mortuaries, depending on the circumstances and needs.
- Establish a mechanism to identify existing facilities suitable for body storage, coordinate procurement, staff the facilities and manage the storage of bodies.
- The coordination group should be informed of all existing body storage space. Existing facilities may be found at hospitals, public and private funeral homes, and forensics facilities. Consider military facilities as well.
- In some cases, universities may have additional body storage space. Some towns and cities may only have space at the public mortuary.
- Even if the decision is to bury bodies as soon as possible, bodies will undoubtedly remain in storage for a period of time while administrative and logistical requirements are satisfied (e.g. while awaiting issue of the death certificate, authorization for cremation or burial, ongoing

⁷ Alternative sources of support include funeral homes, private ambulances, first responders, civil defence, National Red Cross and Red Crescent Societies, police forces, military forces, commercial transport companies, short-term vehicle rental companies, sports venues, etc.



COVID-19: GENERAL GUIDANCE FOR THE MANAGEMENT OF THE DEAD

ICRC FORENSIC UNIT

investigations or notification of family). Additional storage space must therefore be identified in advance.

- All phases of managing the dead, even when capacities are increased, may pose additional challenges during a pandemic, as handling potentially infectious bodies requires additional precautionary measures. In these cases, increased storage space provides a buffer, ensuring continuity in the other stages in the process.
- The minimum standards for setting up temporary storage facilities include requirements for a single-level facility or a building with suitable access for loading and unloading; secured premises; 24-hour access for vehicles; entrances, exits and windows obscured from media and the public; electricity and plumbing; adequate height for stacked shelves; space for identifying and viewing bodies; office space; staff amenities; and welfare facilities. Also consider features such as sealed concrete floors or flooring covered in non-slip waterproof rubber, easily cleaned surfaces and space for appropriate disposal of waste, as well as local regulations, environmental risk assessments, environmental permits, etc.
- Prepare a list of equipment needed for temporary body storage.
- When managing the dead, it is especially important in the storage and transport phases that bodies are identified and labelled with at least three identifiers, including one unique identifier (e.g. body number and date and place of recovery). Storage facilities must have a proper numbering system in place to ensure the correct bodies are released without unnecessary delay.
- Authorities involved must ensure their operating procedures follow the recommendations for handling infectious dead bodies. For the proper temperature for body storage, see [*Management of Dead Bodies after Disasters: A Field Manual for First Responders*](#).

6 VIEWING OF BODIES

A family viewing area should be provided. Because of social-distancing measures in place, it may be that only a few relatives will be permitted access to the facilities to complete the documentation required for burial. It is therefore also important to create an appropriate and comfortable waiting area for families in line with general recommendations for public spaces during the pandemic. At a minimum, facilities must include restrooms (with toilets and washbasins) adapted to the needs and religious beliefs of the bereaved and have trained professionals overseeing the viewings.

7 BODY DISPOSAL / BURIAL / CREMATION

- Personnel from funeral homes have expertise in handling and transporting the dead, though they usually have no legal obligation to respond to emergencies, and they can provide useful and timely support when other facilities are over capacity. They can aid in the process of registering deaths, getting burial permits, etc. They may also be able to offer suitable body-storage facilities at their funeral homes should the need arise.
- It is important to review the existing regulations on burial permits and cremation and ensure that the relevant authority issues a decree or instructions to speed the process for getting burial permits as much as possible.
- Cemeteries should follow recommendations for burying bodies in disasters. Consider issues such as the permit process and what land is available. Temporary burial of bodies may be necessary.
- For more information on this subject, please refer to annex 7 of [*Management of Dead Bodies after Disasters: A Field Manual for First Responders*](#).

8 REPATRIATING HUMAN REMAINS

In the case that human remains must be repatriated, it is important to be aware of local regulations and procedures and of the authorities involved, such as consulates, border authorities and authorities in the receiving country. A coordination group should establish contact with the authorities responsible for issuing repatriation permits in both countries. Generally, a “free from infection” certificate is required, which is normally issued by a forensic practitioner or the attending physician. In the case of COVID-19, it is advisable to establish the procedures for repatriating human remains in advance in order to expedite the process and alleviate the burden for the families of the deceased in foreign countries.



**COVID-19:
GENERAL GUIDANCE
FOR THE MANAGEMENT
OF THE DEAD**

ICRC FORENSIC UNIT

REFERENCES FOR FURTHER CONSULTATION

Right-click links to open in a new tab.

- CDC, [Collection and Submission of Postmortem Specimens from Deceased Persons with Known or Suspected COVID-19, March 2020 \(Interim Guidance\)](#), CDC, Atlanta, 25 March 2020.
- CDC, [Interim Health Recommendations for Workers Who Handle Human Remains after a Disaster](#), CDC, Atlanta, 15 September 2008.
- European Centre for Disease Prevention and Control, [Considerations Related to the Safe Handling of Bodies of Deceased Persons with Suspected or Confirmed COVID-19](#), Stockholm, 2020.
- New South Wales Government, COVID-19 – Handling of Bodies by Funeral Directors, April 2020: <https://www.health.nsw.gov.au/Infectious/factsheets/Pages/covid-19-funeral-directors.aspx>.
- Pan American Health Organization, WHO, ICRC, and IFRC, [Management of Dead Bodies after Disasters: A Field Manual for First Responders](#), 2nd ed., ICRC, Geneva, 2016.
- WHO, [Coronavirus Disease \(COVID-19\) Advice for the Public](#), WHO, Geneva, 29 April 2020.
- WHO, [Coronavirus Disease \(COVID-19\) Technical Guidance: Infection Prevention and Control / WASH](#), WHO, Geneva, accessed 1 May 2020.
- WHO, [Infection Prevention and Control during Health Care When Novel Coronavirus \(nCoV\) Infection is Suspected: Interim Guidance](#), WHO/2019-nCoV/IPC/2020.3, WHO, Geneva, 19 March 2020.
- Barton, L. et al., “COVID-19 autopsies, Oklahoma, USA” *American Journal of Clinical Pathology*, Vol. 153, No. 6, 10 April 2020; pp. 725–733: <https://doi.org/10.1093/ajcp/aqaa062>.
- Cattaneo, C., “Forensic medicine in the time of COVID-19: An editorial from Milano, Italy” *Forensic Science International*, Vol. 312, 27 April 2020: <https://doi.org/10.1016/j.forsciint.2020.110308> (in print).
- Finegan, O. et al., “International Committee of the Red Cross (ICRC): General guidance for the management of the dead related to COVID-19”, *Forensic Science International: Synergy*, Vol. 2, 2020, pp.129–137: <https://doi.org/10.1016/j.fsisyn.2020.03.007>.
- Hanley, B. et al., “Autopsy in suspected COVID-19 cases”, *Journal of Clinical Pathology*, Vol. 73, No. 5, 20 March 2020; pp. 239–242: [doi:10.1136/jclinpath-2020-206522](https://doi.org/10.1136/jclinpath-2020-206522).
- Osborn, M. et al., [Briefing on COVID-19: Autopsy Practice Relating to Possible Cases of COVID-19](#), Royal College of Pathologists, London, February 2020.
- Xue, Y. et al.. “Perspectives on the death investigation during COVID-19 pandemic”, *Forensic Science International: Synergy*, Vol. 2, 2020, pp. 126–128, <https://doi.org/10.1016/j.fsisyn.2020.04.001>.

12

In Spanish:

- Caja Costarricense de Seguro Social, [Lineamientos para el manejo de cadáveres relacionados con la enfermedad COVID-19](#), 23 marzo 2020: <https://www.ccss.sa.cr/web/coronavirus/personal-salud>.
- Gobierno de México, [Lineamientos de manejo general y masivo de cadáveres por COVID 19 \(SARS CoV-2\) en México](#), 21 abril 2020: <https://www.aps.cdmx.gob.mx/comunicacion/nota/lineamientos-de-manejo-general-y-masivo-de-cadaveres-por-covid-19-sars-cov-2-en-mexico>.

ANNEX

ESSENTIAL PRACTICAL QUESTIONS FOR THE RAPID ASSESSMENT OF EXISTING HEALTH AND MEDICOLEGAL SYSTEMS WHEN RESPONDING TO INCREASED DEATHS⁸

- Does a mass-fatality response plan or other guidance related to managing the dead exist that will direct a multi-agency response to an increase in deaths from COVID-19?
- Do you have the support of the health ministry, justice ministry, interior ministry, cabinet, head of government and disaster-management department to activate the existing mass-fatality response plan – as part of a national disaster-management plan – or to develop an emergency plan?

⁸ These questions may also be used to assess detention centres' responses in the case of a sudden increase in deaths in custody related to the pandemic.



COVID-19: GENERAL GUIDANCE FOR THE MANAGEMENT OF THE DEAD

ICRC FORENSIC UNIT

13

- What agencies would be called on to respond to a surge in deaths in a large-scale or protracted event, and which agency would take the lead in coordinating efforts to draw up a plan and implement it?
- What are the current capacities and capabilities of all agencies involved in the management of deaths?
- By what percentage can deaths increase before overwhelming agencies' current capacity and triggering the activation of the plan?
- Are current personnel adequately trained in safety precautions and equipped with appropriate PPE to handle a surge in infectious-disease cases? Are they insured against injury and death?
- Have arrangements been made with non-government groups and the private sector to secure additional support as well as to procure additional equipment?
- Does the plan insist on managing the deceased in a dignified and professional manner and respectfully engaging and complying with the wishes of the families and communities affected?
- Do the law-enforcement community and medicolegal practitioners have the additional resources necessary to ensure that all unexpected deaths are thoroughly investigated, even during an infectious-disease outbreak?
- Does the plan provide guidance on how to comply with legislation and regulations on protecting personal information?
- Will families, communities and the media be able to expect regular, reliable and transparent communication from competent sources who represent all the agencies and groups involved in the response? Where will they go to receive updates and status reports on the response?
- Who will recover the deceased from their homes, and what training and equipment will they receive to protect themselves and the bereaved families in an infectious-disease outbreak?
- What additional refrigerated storage space is available for a surge in deaths?
- What labelling and body-tracking methods will be used to effectively manage large numbers of bodies accumulating in mortuaries?
- Is there a standardized file-management process (including standardized forms) to ensure all facilities and agencies involved work coherently and collaboratively, using one system that allows all data related to the management of the dead to be centralized?
- How will information on caseloads be centralized to assist with further planning and targeted deployment of additional resources and equipment?
- Do cemeteries and/or cremation facilities have sufficient capacity to accommodate the increase in deaths in a timely manner?
- What will be the short- and long-term approaches to managing unclaimed and unidentified bodies?
- What administrative processes and additional support will ensure that families receive death certificates, burial permits, autopsy reports and other important documentation to resolve financial affairs, estates, etc.?
- Who will pay for the additional personnel, facilities and activities needed to respond to a protracted mass-fatality event?

The ICRC helps people around the world affected by armed conflict and other violence, doing everything it can to protect their lives and dignity and to relieve their suffering, often with its Red Cross and Red Crescent partners. The organization also seeks to prevent hardship by promoting and strengthening humanitarian law and championing universal humanitarian principles.

