

HANDLING OF THE DEAD IN AN EMERGENCY

During an emergency public health officers may be asked to provide advice to the Police on appropriate, safe and hygienic storage and burial of human corpses in a mass fatality disaster. Normal mortuary and burial facilities may not be functional and advice must ensure the risk of spread of disease and the creation of nuisance conditions can be minimised.

Normally the Police will be responsible for collection and identification of the dead and will work closely with funeral directors and the Coroner. Section 7 of the Guide to the National Civil Defence Emergency Management Plan provides the tasks for the Police in a Civil Defence Emergency. Police may liaise with local authorities and Iwi in addition to the public health units to affect a proper outcome.

The Civil Defence Act 2002 enables a Civil Defence Emergency Management Group to *“undertake emergency measures for the disposal of dead persons or animals if it is satisfied that the measures are urgently necessary in the interests of public health”*.

Under normal conditions body putrefaction will become significantly advanced after 4 days. Circumstances may hasten this eg. increased temperature, death caused by disease, body damage etc. Immediate burial may be necessary to reduce spread of disease. Refrigeration and embalming however will delay putrefaction.

Legal responsibilities and powers available to statutory officers are described in:

- Civil Defence Act 2002 (s.85(1)(g))
- Health Act 1956 (s.70-71, 86)*
- Health (Burial) Regulations 1946
- Burial and Cremation Act 1964

A medical officer of health may exercise powers under Section 70 and 71 of the Health Act 1956 only when a national or regional civil defence emergency has been declared or where the Director General of Health has given written authorisation to the medical officer of health upon application. Medical officers of health have powers to order burial or cremation or pending burial, removal of a body to the nearest mortuary, or other place within a stated time frame. A medical officer of health may also enquire into embalming treatments and require further treatment as necessary; and direct funeral directors to place bodies in hermetically sealed coffins.

Roles and Responsibilities: refer to the DHB/Public Health Unit's Emergency Management Plan for relative roles and responsibilities in a declared civil defence emergency or a public health emergency. Generally, an experienced health protection officer will undertake the risk analysis and assist in the development of action plans. The officer will assist Police, Civil Defence, local authorities, medical or nurse practitioners, and funeral directors by providing advice on sensitive, hygienic storage and burial of the dead; and the establishment of facilities suitable for temporary storage and emergency burial of the dead.

Procedures for Burial of the Dead in an Emergency: in general, co-ordination of the public health response required to meet the above objective will necessitate prioritisation between the medical officer of health, health protection officers, Police and other relevant authorities. This may be undertaken as part of a wider brief for designated officers and feedback to the Emergency Operating Centre from them will be required to update situation reports and action plans.

Reconnaissance and Initial Response: public health statutory officers will be required to:

- determine the type and scale of the emergency
- determine the disease risk and hazards presented by mass fatalities

- determine the readiness of its personnel and other stakeholder organisations particularly police and territorial authorities.
- determine the suitability and availability of normal mortuary and burial facilities
- determine availability of emergency storage and burial facilities for bodies.

Emergency Storage Facilities (Mortuaries): In some cases, the availability of refrigerated containers for the storage of bodies pending identification, may preclude the urgency for burial. The Police may request advice on the location and use of refrigerators, deep freezers and refrigerated shipping containers for the storage of bodies. The demand by food manufacturers, retail distributors and public for these resources may be high. Public health staff may have to advise that refrigeration space for food supplies take precedent over the storage of bodies. A list of refrigeration and shipping container suppliers should be appended to the public health unit's emergency plan. *Refer to Regulation 21 and 33 of the Health (Burial) Regulations 1946 for design and construction requirements of emergency morgues and auxiliary areas.*

The design and layout of an emergency morgue is the responsibility of the Police but statutory officers may be able to assist with advise, suggesting that such a facility may need

- a reception room to handle urgent enquires and receive - relay information to Civil Defence headquarters (preferably away from storage and identification area),
- suitable areas of adequate size for storage and examination,
- a viewing room or screened area for the identification of bodies by next of kin.
- a storage area for bodies eg, a refrigerated container (consider an independent power source),
- a records room, and a personal effects storage area,
- a storage area for caskets,
- good ventilation and lighting,
- hot and cold water and hand washing facilities.

Handling and Storing Bodies: Persons handling bodies should be advised to:

- observe strict hygienic precautions,
- wear suitable protective clothing
- wash the hands and forearms with disinfectant soap when the task is completed,
- wash with an efficient disinfectant all surfaces that have been in contact with bodies,
- place dirty clothing into suitable bags or containers for washing.

Equipment required for mortuary services: The following equipment will be required for mortuary service:

- stretchers
- leather gloves
- rubber gloves
- overalls
- gumboots (half length)
- cleaning cloths, buckets and brushes
- cover sheets
- plastic body bags
- soap, disinfectants, hand towels, formaldehyde solution, kmno_4
- masks
- identification tags
- floor protection if the floor is not suitable
- caskets
- refrigerated containers (if necessary)
- refuse and waste containers with covers

Bodies pending identification and burial should be partially embalmed and/or wrapped in a formalin (10%) soaked sheet, sealed in a plastic body bag and kept refrigerated. *Refer to*

the Ministry of health booklet 'Embalming Infectious Bodies' for further advice. Containers used to store bodies in pending burial or identification should be:

- one piece construction (moulded corners) with easy to clean surfaces
- preferably refrigerated
- recorded and identifiable as having been used for storage of bodies.

Procedures for disinfecting and cleaning emergency morgues: Records should be kept of all fridges, freezer and shipping containers used for this purpose and thorough disinfection carried out after use. The following cleaning and disinfection procedures are recommended:

- Turn off refrigeration, open doors to get unit to ambient temperature (18°C) if possible.
- Wearing two pairs of disposable gloves and other protective equipment, wash and scrub surfaces with warm water containing a food grade detergent.
- In a well ventilated area, wearing gloves, make up a Sodium Hypochlorite solution to a concentration of between 0.05% (500 ppm) & 0.5% (5000ppm) available chlorine. *This is best achieved by diluting liquid household bleach concentrates with water.* Hypochlorite solutions should be freshly prepared, stored in a well ventilated area protected from light and heat.
- Wearing gloves and other protective equipment, apply the hypochlorite solution to all surfaces.
- The hypochlorite solution should be left in contact with the surface for up to 30 minutes with a **minimum of 10 minutes** contact time.
- Depending on the level of contamination further hypochlorite treatments maybe required.
- After the holding period wash surfaces again with warm water and detergent
- Where possible, fluids and contaminated water should be collected in a sealed labelled container. Check with the territorial authority that the sewerage system can receive the waste. Waste water shouldn't be discharged into the storm water system.
- After use, all contaminated equipment including gloves, brushes, mops, cloths, bags etc should be disinfected, as above and/or placed in sealed bags or disposable containers marked *Biohazard Waste*. Check with the local authorities for appropriate disposal arrangements.
- Cleaning and disinfection procedures must be supervised by appropriate staff, and container records updated at the end of each procedure.

Burial of bodies: Where possible existing burial sites should be used. The degree of the emergency may dictate whether this or mass burial in common graves is appropriate but should be avoided as much as possible (for example by freezing remains until burial sites can be extended or made available). Cultural sensitivities also should be accommodated and normal dignity as much as possible assured.

If refrigerated containers are available it is unlikely that emergency burial sites will be required. However, if emergency burial sites are required or access to normal burial grounds is not possible the following should be taken into account in choosing a suitable site:

- accessibility and potential impact on neighbouring areas (eg. odour nuisances)
- potential for leachate nuisance including contamination of potential drinking water supplies.
- separation from water supply area.
- ease of excavation and suitability of cover material.

Training: attendance at civil defence, emergency management and risk assessment courses are essential for statutory officers. Regular updates and review of competencies should be made. Statutory officers should attend regional and local exercises and test this plan against such exercise seminars.

Plan Briefing, Debriefing and Review: during the course of non-emergency exercises the test of this plan to meet the public health requirements of the scenario should be evaluated. Similarly during emergencies the plan should be reviewed for effectiveness and debriefing

should identify strengths and weaknesses of it. Changes to the plan should be made where weaknesses are identified. Key contacts detail should be reviewed annually in any case.