Precaution and Management in Handling Dead Bodies in COVID 19 Pandemic by the Health Care Worker

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ABSTRACT

The development of a new human coronavirus, which is known as 'SARS-CoV-2', that causes serious infection of the respiratory tract in humans, affects every country of the world and has become a concern to the global health. Since the virus was first identified in December 2019, the number of deaths increased exponentially, leading countries around the world to increase emergency measures to fight the virus. Since the COVID-19 pandemic does not distinguish its sufferer, it is of paramount importance to draw up a strategy for the management and protection of the dead for all suspected or verified cases of COVID-19, including the unidentified deceased, as an important part of the forensic humanitarian action approach. In this article, a general idea on how to precautions and management should be done by the health care worker of the dead bodies of COVID 19 is given. Wherever possible, families must be given every opportunity and assistance to regret their loved ones, even in times of this pandemic, to maintain a level of nobility and respect appropriate to them. This article provides information to health care workers about the precautions to be taken by a health care worker in managing the dead bodies in the COVID 19 pandemic.

Key Words: COVID-19, Dead body, Health care worker, Management, Pandemic, Precautions

INTRODUCTION

Health care staffs face a high risk of infection due to the novel coronavirus (COVID 19). It is important not only to safeguard continuous patient care but also to ensure that they do not spread the virus, to ensure the safety of health-care staff. COVID 19 can spread through cough or breathing droplets, body fluid contact, or contaminated surface contact.¹ A novel human coronavirus causes an infectious disorder of the respiratory tract known as "COVID-19". The SARS-CoV-2 is the 7th human-infected coronavirus identified. After the initial cluster of pneumonia cases in Wuhan, a town of 11 million people in Hubei province, China, in December 2019. This infection continued its relentless march around the globe and was declared a global pandemic by the World Health Organization on 11 March 2020.² This disease is transmitted by inhalation or by contact with the infected droplets. The incubation period of the COVID 19 is about two to fourteen days. The COVID 19 disease has some common signs and symptoms like cough,

breathlessness, fever sore throat, etc. In many people, this disease is not severe but, in some people, this disease may lead to other disorders like pneumonia, acute respiratory distress syndrome, or multi-organ dysfunction (usually in elder people or people having other diseases).² A lot of people may not show symptoms. The death rate is about 2 to 3 per cent. Special molecular research is done to diagnose this disorder, by showing the virus in respiratory secretions. Specific laboratory results include the normal/low counts of white cells with elevated C-reactive protein (CRP). CT scanning is usually anomalous except for those without symptoms or mild illness. Treatment is generally supportive; the role of antiviral agents has yet to be identified. Prevention involves isolating suspected cases from home and those with mild diseases in hospitals requiring the prevention of touch and droplet and taking strict steps to control infection. This virus spreads SARS-CoV and Coronavirus Respiratory Syndrome of the Middle East (MERS-CoV) more rapidly than its two ancestors but is less lethal. The global influence of that new epidemic is still unknown.

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Recently, as a new illness, many theories and misinformation spread through social media sites about how to dispose of the body of Covid-19's suspected or confirmed case. Here are some standard precautions to be followed when handling dead bodies with COVID19.³

KEY POINTS TO REMEMBER

- COVID-19 is an acute respiratory disease caused mainly by the lung-affected COVID-19 virus.
- Based on current proof, droplets, fomites, and near the contact between humans transmit the COVID-19 virus, with potential dissemination via the faeces. It does not float. As this is a new virus whose origins and disease progression are still not entirely clear, further precautions should be used before more information is available.
- Dead bodies are not usually infectious, except in haemorrhagic fevers (such as Ebola, Marburg) and cholera cases. If treated poorly during an autopsy, only the lungs of pandemic influenza patients may be contagious. Otherwise, there's no disease transmitted by cadavers. It is a common misconception that people who have died from a contagious disease should be cremated but that's not real. Cremation is a matter of cultural preference, and the means available.⁴
- There is no record to date of individuals being contaminated by exposure to the bodies of individuals who died of COVID-19.
- People may die from COVID-19 in health centres, at home or elsewhere.
- Primary priority should be the health and well-being of anyone who happens to be bodies. People should make sure that the requisite hygiene of hand and personal protective equipment (PPE) is available before attending a body.
- It is important to honour and preserve the dignity of the deceased, their cultural and religious practices and their families.
- Hateful disposal of a COVID-19 dead should be avoided;
- Authorities must treat any situation on a case-by-case basis, managing family interests, determining the cause of death and the chances of exposure to infection.

Precautions for health care workers while handling the dead body of 'COVID 19' patients

A health care worker must follow the usual procedures when treating COVID 19 deadbodies⁴. These are: -

1. Maintaining proper hand hygiene.
2. Appropriate use of personal protective equipment
3. Proper and safe management of sharps and waste.
4. Cleaning and disinfection of environmental surfaces.

1. Maintaining hand hygiene

Hand hygiene is the primary measure to reduce infections.⁵ Hand hygiene requires either handwashing with antiseptic soap and water or using an alcohol-based waterless hand sanitiser (waterless hand rubbing). Clean hands in clearly soiled conditions with antiseptic soap and water. Use gloves that do not remove the hand hygiene criteria. Hand hygiene should be done after gloves and other personal protective equipments (PPE) have been removed.^{5,6}

Five moments of hand hygiene

Healthcare workers (HCWs) should apply 'My 5 moments of hand hygiene'⁵ (This is an approach that recommends cleaning the hands of health workers

1. Before touching the patient.
2. Before proceedings.
3. Following a procedure or an exposure to body fluid.
4. After the patient was touched
5. Upon touching patient surroundings

A technique for the hygiene of hand with water and soap (time period 40 to 60 seconds)

- Wash your hands with water
- Apply enough soap for manual use
- Clean the Back of Hands
- Interlink Your Fingers
- Cup Your Fingers
- Put your right hand around your left thumb and scrape as you rotate it, then swap.
- Flip your fingers over your left palm in a circular motion then swap.

The technique of hand-hygiene with a formulation based on alcohol (period 20 to 30 seconds)

- Apply alcoholic sanitizing agent
- Rub palm into palm on your hands
- Interface your left palm with thumbs over your left dorsal, and do it vice versa
- Finger interfaced palm to hand
- Fingered back with opposing hands, finger connected
- Rubbing left hand to spin, and vice versa
- Rubbing of a right finger in left palm back and forth and vice versa

2. Appropriate use of personal protective equipment

Precautions must be taken by healthcare professionals who care for COVID-19 patients include the proper use of PPE, which requires choosing the right PPE and instruction on how to put it on, remove it and dispose of it. Personal protective equipment includes a surgical mask, fit-tested N95 or FFP2 respirator, gloves, gown or apron, and eye protection.⁶ Use of PPE to avoid direct contact with the blood, body fluids, secretions (including respiratory secretions) and non-

intact skin of patients. The use of PPE should be guided by a risk assessment for routine patient care regarding anticipated contact with blood, body fluids, secretions, and non-intact skin.⁴

How to bring the Personal Protective Equipment (PPE) gear on

It may be appropriate to use more than one donning process. Training and practising using the protocol set up by your health care facility are important. Below is an example of putting on.

1. Recognize and collect suitable personal protective equipment to make sure the correct choice of gown size (training based).
2. Using a Hand sanitiser to conduct personal hygiene.
3. Put gown in solitary confinement. Add all ties to the gown. Many health care workers may need support.
4. Put the N95 filtering facepiece respirator, authorised by NIOSH or higher (use a face mask if there is no respirator). If the respirator does not have a nosepiece, both hands should be put in the nose and not bent or tented. Should not place one hand inside the nose-piece. A respirator/facemask should be placed under the ear. It protects both your mouth and your nose. Do not wear your respirator/facemask under your chin, or place the pocket in scrubs between patients.
 - Respirator: Respirator belts should be placed on the crown of the head (top strap) and base of the neck (bottom bracelet). Every time you put your respirator on, conduct a user seal test.
 - Facemask: Respirator belts should be placed on the crown head (top bracelet) and base neck (bottom bracelet). Every time you put on your respirator, conduct a user seal test.^{7,8}
5. Place mask or goggles on the shield. Pick the proper eye protection when wearing an N95 respirator or half-face elastomeric respirator to ensure that the respirator does not interfere with proper eye protection positioning, and the eye protection does not impair respirator fit or seal. Facial masks have full facial shielding. Goggles can have excellent eye protection but it is normal to have bruising.
6. Bring the gloves on. Gloves will clothe the manhole (wrist) of the gown.

How to Remove PPE Gear

More than one form of doffing is likely suitable. It is necessary to train and practice using the procedure put in place by your health care facility. One example of doffing is given below.

- i. Removal of gloves: - Ensure removal of the glove does not lead to further manual contamination. Using more than one method (e.g., bird beak or glove-in-glove) to remove the gloves.

- ii. Removal of the gown: - Untie (or unplug any of the buttons). Many ties can be cut, rather than untied, from gowns. Using it in a friendly way, avoiding a forceful gesture. Get up to your knees and gently take off your robe and off your neck. One effective alternative is to take the gown down. Set aside in the trash bin.
- iii. Health care staff can now leave the room of the patient.
- iv. Carry out hygiene of hand.
- v. Remove your ears from your hat, or goggles. Carefully remove the face shield or goggles by taking the strap and pulling it up and off the head. Don't touch your face shield or goggles in front.
- vi. Attach the respirator and remove it (or use a face mask rather than a breather). Neither touch the head of the breather, nor face mask.
 - a. Respirator: Remove the strap from the bottom just by pressing the buckle, then gently draw it over the head. Take the top strap and gently pull it over the ear, then take the breather out of the face without hitting the front of the breather.
 - b. Facemask: Carefully untie (or unhook the ears) and proceed without touching the forehead.
- vii. After removing the breather/face mask and before putting it back on again if your workplace is reusing, perform hand hygiene.

3. Proper and Safe management of waste and sharps

The Centers for Disease Control and Prevention (CDC) has determined that the management of medical waste generated in the treatment of COVID-19 patients and patients under investigation (PUIs) is in line with routine procedures.⁷

There are some guidelines for proper management of waste are as follows:

- Generators are responsible for the conveying of waste to treatment plants. Stericycle drivers don't carry waste.
- The bag must be hand-fastened by picking and twisting the bag's neck and using a tie or hand knot to secure the bag, and each container must be tightly sealed.
- Closed bags shall not be visible where a secondary container (box or reusable tub) is closed.
- Unpackaged containers or faulty containers are refused pick-up or returned to the generator.
- Clear reusable containers should not be wrapped in RMW containers but placed on the racks⁸.

4. Cleaning and disinfect environmental surfaces

Cleaning is essential before disinfection. Many disinfectants may be inactivated through organic matter. Cleaning removes both organic and inorganic substances that allow the disinfectant to work. Removal of germs like COVID-19 causing virus requires thorough cleaning and disinfection.

The length of time SARS-COV-2 persists on inanimate surfaces (cause of COVID-19) can vary depending on factors such as the amount of infected body fluid present, such as respiratory droplets, and the ambient temperature and humidity. On the whole, coronaviruses are unlikely to live long after the droplets have been formed by coughing or sneezing.

Cleaning and disinfectant agents are:

- a) One per cent freshly processed sodium hypochlorite can be used as a disinfectant for washing and disinfection.
- b) Phenol for non-client washing, such as office/staff room and even toilets.
- c) Alcohol (e.g., isopropyl 70 per cent or ethyl alcohol 70 per cent) can be used to scrub off surfaces where it is not necessary to use bleach, such as metals.⁹

Guidelines for cleaning

Use a checklist to promote accountability for cleaning responsibilities.

Instructions for cleaning staff

- Housekeeping staff should be trained regarding donning and doffing.
- They must attire in suitable PPE (heavy-duty/disposable gloves, disposable long-sleeved gowns, eye goggles or a face shield, and an N95 respirator, shoe cover) when handling and transporting used patient-care equipment and while cleaning/disinfecting corona ward.
- Remove and discard disposable gloves and wear a new pair if they are soiled or damaged.
- Remove and discard disposable gloves and wear a new pair if they are soiled or damaged.
- Before putting on and after removing gloves they should do hygiene by hand.
- If there is obvious contact with respiratory secretions or other body fluid, the cleaners will wear a full-length protective gown in addition to the surgical mask, eye protection and gloves.
- Housekeepers will wash their hands with soap and water immediately after removing the PPE and completing the cleaning and disinfection work.
- Discard all used PPE in a double yellow -bagged biohazard container, which should be sealed and labelled tightly.
- The staff should be aware of the symptoms, and if they develop symptoms should report to their occupational health service.

MANAGEMENT OF BODY REMOVAL FROM ISOLATION ROOM OR AREA

There must be proper management of handling the dead during removal from isolation room or area³. They are as follows;

- 1) The health care worker who attends COVID 19 patients' dead body will do good hand hygiene, make proper use of personal protective equipment (water-resistant apron, goggles, N95 mask, gloves).
- 2) All drain tubes and catheters into the dead body should be removed.
- 3) If there is any puncture, holes or wounds (caused by removing the catheter, drains, tubes or otherwise) should be disinfected with 1 per cent hypochlorite and coated with impermeable material.
- 4) Caution should be used in the handling of sharps such as intravenous catheters and other sharp instruments. They shall be put inside a sharp jar.
- 5) Oral lock, the dead body's nasal orifices for preventing body fluid leakage.
- 6) If the patient's family wants to see the dead body during removal from the insulation room or place, the Standard Precautions can be used to do so.
- 7) Place the dead body in a plastic bag which is proof of leakage. With a 1 per cent hypochlorite, the exterior of the body bag can be decontaminated. The body bag may be wrapped with a plate or mortuary sheet supported by family members.
- 8) The dead body is delivered to the family or carried to a mortuary.
- 9) All used or soiled linen should be treated with usual precautions, placed in a biohazard bag and disinfected on the outer surface of the bag with a hypochlorite solution.
- 10) Under existing infection management procedures, the equipment used should be autoclaved or decontaminated with disinfectant solutions.
- 11) All medical waste must be treated and disposed of according to the biomedical waste management rules.
- 12) Health workers who have cleaned the body must remove personal protective equipment and do grooming by hand.
- 13) Grant encouragement and respect for the emotions of family members.⁶⁻⁸

CONCLUSION

Health care workers are the key players in the fighting COVID 19 pandemics. There is always a risk for infection while handling the dead bodies. During this pandemic, every precaution must be taken in the management of dead bodies to reduce the risk of infection. This article provides information to health care workers about the precautions to be taken by a health careworker in managing the dead bodies in the COVID 19 pandemic.

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REFERENCES

1. Chan JF, Yuan S, Kok KH, To KK, Chu H, Yang J, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *Lancet* 2020;395(10223):514-523.
2. Li Q, Guan X, Wu P. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. *N Engl J Med* 2020;2(1):231-234.
3. Bedford J, Enria D, Giesecke J. COVID-19: towards controlling of a pandemic. *Lancet* 2020;1(7):21-25.
4. World Health Organization. Infection prevention and control during health care when COVID-19 is suspected: interim guidance, 19 March 2020. World Health Organization; 2020.
5. Challenge FG. WHO guidelines on hand hygiene in health care: a summary. Geneva: World Health Organization. 2009.
6. World Health Organization. Rational use of personal protective equipment (PPE) for coronavirus disease (COVID-19): interim guidance, 19 March 2020. World Health Organization; 2020.
7. Kalantary S, Khadem M, Golbabaei F. Personal Protective Equipment for Protecting Healthcare Staff during COVID-19 Outbreak: A Narrative Review. *Adv J Emerg Med* 2020;4(2s):e61-64.
8. Juanamasta IG, Priastana IKA. Yoga Affect to Immune System: A Systematic Review. 3rd Int Conf Nurs 2017 Approaching from Basic to Pract Towar Chronic Care Excell Brawijaya Univ Indones. 2017;(October):206–217.
9. Qin L, Xiong B, Luo C, Guo ZM, Hao P, Su J, et al. Identification of probable genomic packaging signal sequence from SARS_CoV genome by bioinformatics analysis. *Acta Pharmacol Sin* 2003;24(6):489-496.