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# Current Scenario and Proposed Solutions Amidst Covid-19 Dead Body Management

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***Abstract***
*Covid-19 (coronavirus disease- 19) is a principal health emergency the world is facing. The viral disease is caused by SARSCOV 2 (Severe Acute Respiratory Syndrome Corona Virus -2). As of May 28th 2021, World Health Organization (WHO) reported 168,040,871 confirmed cases and 3,494,758 deaths. Likewise, in India WHO reported 27,369,093 confirmed cases and 315,235 deaths.*
*During the first wave, WHO observed that, by March 2020, the Case Fatality Rate (CFR) in Wuhan was up to 5.05% in contrast, outside Hubei was 0.98%. While in India, the CFR during the first wave was 2.49%[(6)] which slided to 1.14%[(7)] during the second wave. Thus, maintaining the dignity of dead is of utmost importance while disposing the deceased.*
*This article intends to put light on the current scenario of Covid-19 pandemic regarding dignified management of dead body and the proposed solution in wake of previous history, ideologies and religious values concerning humanitarian grounds.*

***Keywords:*** *Coronavirus, Covid-19, Case Fatality rate, Dignity of Dead, CFR, pandemic*

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## I. Introduction

Covid-19 (coronavirus disease- 19) is a principal health emergency the world is facing. The viral disease is caused by SARSCOV 2 (Severe Acute Respiratory Syndrome Corona Virus -2)[(1)]. The WHO states that the disease was initially recorded as a collection of cases of pneumonia by Wuhan Health Commission, China. Assessing the spread across the globe, COVID – 19 was characterized as a pandemic[(2)].

Category 1-4 of Hazard Groups are biological agents that are infectious, where HG3 pathogen (hazard group3) has SARSCOV-2 along with HIV and TB[(3)]. The spread is mainly occurring through respiratory droplets and fomites which occurs when individuals are within 2metres or 6 feet distance. Cough, sneeze or splashes from contaminated fluid can form infective aerosol and droplets. It also spreads from touching mucosa of , eyes , nose, and mouth after contracting with contaminated fomites[(4)]. This has escalated the number of infected and is direct cause of thousands of deaths. The maintenance of dignity is of utmost importance while disposing the deceased.

This article intends to put light on the current scenario of Covid19 pandemic regarding dignified management of dead body and the proposed solution in wake of previous history and religious values concerning humanitarian grounds.

**MORTALITY AND COVID-19**

As of May 28th 2021, World Health Organization (WHO) reported 168,040,871 confirmed cases and 3,494,758 deaths. Likewise, in India WHO reported 27,369,093 confirmed cases and 315,235 deaths[(5)].

During the first wave, WHO observed that, by March 2020, the Case Fatality Rate (CFR) in Wuhan was up to 5.05% in contrast, outside Hubei was 0.98%. While in India, the CFR during the first wave was 2.49%[(6)] which slided to 1.14%[(7)] during the second wave. The CFR largely depends on the healthcare system, governance, population density prior experience and adaptability towards a challenging situation. Population density, material deprivation and lack of social integrity have mushroomed deaths.

Though, the second wave saw a steep raise in the cases, it is the unprecedented demand of medical oxygen and pharmacological treatment lead to scarcity risking the lives of many.

**LESSONS FROM GREAT INFLUENZA PANDEMIC**

The history of prior pandemic, Spanish flu of 1918-1920 reported 40 million deaths. This was 2.1% of world's population then. For the current population density, the projected deaths would be 150 million. Spanish flu had 4 waves. The first 2 waves coincided with the World War 1. This had an effect on economy and health care system which had deleterious effects on the country.

Pandemic is approximated to have reduced the per capita GDP (Gross Domestic Product) by 6.2% in the country and World War 1 by 8.4%. In the spring 1918, 1st wave experienced 27.1 million deaths, lethal 2nd wave recorded 9.9 million deaths , 3rd wave by the end of 1919 and 4th wave in 1920 altogether mounted 40 million deaths. These data, previous experiences and history are gentle remainder to equip ourselves for the present and forth coming waves[8].

**IDEOLOGY ASSOCIATED WITH DEAD**

Rituals are done not for the dead but for the living to ease their pain and relieve themselves. In a diverse country like India, there are various ways of disposal of the deceased. Cremation is most extensively used form among Hindus which is last rite among the 16 rites of a typical "Varna Hindu" to attain Moksha.

Moksha, meaning liberation or to free the soul in the final destination or high priority intent of Hindu's life. The quality of wood used signifies the caste, wealth, religious importance and social status. Electric cremation was introduced in view of cost effectiveness and equality within. Also, CNG (Compressed Natural Gas) cremation was promoted considering pollution issues. Some community also prefer open pyre at the bank of a river and semi pyre system. In Christianity, ideology of resurrection promoted burial within coffin. Pre-Christian Roman and Greek communities preferred incineration. Muslims believe in the separation of soul from the body and the soul visits the loved ones on 7th and 40th day and once every year. Thus, burring in a grave without coffin[9].

**THE CURRENT SCENARIO**

The novelty and uncertainty of the disease has led to panic, anxiety and ultimately to chaos in the society. The exponential raise in the deaths, decreased the time for recovery from the 1st wave fatigue. This was mainly due to the poor awareness and ignorance towards pandemic that has collapsed the country. This has led to a need to address the elephant in the room which is the deceased.

The dead bodies of both suspected and confirmed cases of COVID-19 must be handled with honor and respect. With the religious diversity and cultural variations in every region of India, the beliefs of the deceased and his family should be considered while forming a standard operating procedure (SOP). This calls in for an integrative versatile team including health care professional, local government, religious head and cultural community, funeral service workers and a representative from general public.

The surge in deaths due to COVID-19 has overwhelmed the crematoriums, melting the furnaces, bodies piling up, and overflown grave yards. The scarcity of space, money, firewood for fuel, helplessness and despair has led to heart wrenching situation where dead bodies washed up shores of river Ganga[10]. The bodies are left to rot and scavenged by eagles and dogs. This also raises concern for the water pollution. These are the regions with high population density, infant mortality rate and low per capita income. This shows the faulty governance, and lack of support system for the people. They are left to fend themselves. The mounted toll of deaths has an impact has an impact on mental health of not just health care workers but also general public.

The parasites have leeched upon the distressing situations as a result of which, there is increase in illegal trade, black markets and other unlawful money-making practices. This saw a major disgrace in the disposal of the dead. The inadequate temporary storage space in morgue, overworked staff, ambulances & ambulance drivers, long queues at crematorium, lack of burial grounds, doubts on bathing the dead and ignorance to the suspected COVID-19 deaths away from hospital set up are a bare minimum flaw listed at various levels. The reflection to these untoward occurrences and rectification will help in faster recovery from the present dreadful situation.

**POSSIBLE SOLUTIONS**

1. An authority that is empathetic at heart, mindful in action and critic in thoughts and responsible at work should be formed.
2. A multidisciplinary team with health care professional, local government, head of religious and cultural community, funeral service worker and an anthropologist.
3. A leader who takes ownership of actions done, preparing team and predicting the forthcoming events.
4. Preparedness for anticipated events.
5. Healthy hierarchy to be followed.

6. Delegation is an important skill owned by leader and building an efficient team around him.
7. Feedback and criticism are gracefully accepted with an open mind.
8. Adequate number of staff recruited.
9. Underpaid and overworked circumstances avoided.
10. Frontline workers should be provided with incentives, privilege of vaccination and treatment when infected.
11. Training staff in their fields and improving work efficiency.
12. Create awareness about pandemic, educating on current situation, assuring their safety helps in creating healthy workspace.
13. Regular supervision at every tier and any faults are immediately corrected.
14. Documentation of infected, deaths, unknown bodies[(4)].
15. Protocols exhibited over display board must be followed.
16. Every dead is identified and documented before disposal.
17. Brought dead or death far from hospital facility should be noted and services provided for the disposal of deceased according to SOP.
18. Providing necessary equipment's at all levels to prevent cross contamination.
19. Safety standards followed by body handler[(4)]

- Standard PPE (personnel protective equipment) with nitrile gloves, long sleeved gowns, aprons, face mask, face shields, googles, FFP3 masks/ N95 respirators
- Rubber boots that are reused after disinfection
- Heavy duty gloves used in case of discontinuity of skin
- Washing hands after handling the body
- Avoid eating or drinking within the vicinity of body
- Training on donning and doffing of PPE

20. Always handle body wearing PPE, seal the orifices with hypochlorite-soaked cotton, wrap it in plastic sheath and after disinfection with 1% sodium hypochlorite place it in body bag of 150 micrometer thickness[(1)].
21. Labelled body is brought to mortuary via vehicle or stretcher.
22. Temporary storage of body in morgue following the disinfection of outer body bag[(4)].
23. The relatives of the deceased should maintain safe distance from working staff, as they are most likely primary contacts and should quarantine themselves after cremation
24. The disinfected belongings of deceased are handed over to the kin[(4)].
25. Touching, kissing or bathing the body is prohibited.
26. Limit the number of people for funeral[(1)].
27. A copy of SOP given to relatives after explaining them to follow.
28. ICMR (Indian Council of Medical Research) prefers electric or CNG cremation[(1)].
29. The local government and municipality can arrange uniform disposal procedure by integrating collective opinion of the team. Thereby preventing cross contamination and accessibility to every class of society.
30. Vehicles for transportation of dead.
31. Unidentified body is disposed by burial[(4)].
32. Bodies are buried 6m deep covered with cement to prevent scavenging.
33. Mass burial discouraged.
34. All the surfaces that have come in contact with deceased be disinfected with1% sodium hypochlorite with contact time of 30 minutes due its antimicrobial properties at optimum conditions(11).
35. All the infectious medical waste disposed accordingly.
36. All the procedures supervised giving no space for malpractice.
37. Regular mental health checkup and counselling given.
38. Updating workers on present condition, flaws identified, changes made and upgraded protocols

## II. Conclusion

Human values have important bearing on human conditions during one's life as well as is in death. This article brings out the complex interplay of values. In India, the (quasi-) universal values of sustainability denotatively stated human value that promoted electric cremation technology.

It is evident, that people who have to deal with infected COVID19 dead bodies are at risk and must take proper precautions at each stage of disposal. When implementing interventions consideration should be given to the variations in health-care capacity. While the pandemic is growing exponentially, the health-care system will face severe burdens. Therefore, governments should act and prepare immediately to ensure that the health-care system has adequate labour, resources, and facilities to minimize the mortality risk of COVID-19.

## References


[1]. Vidua RK, Duskova I, Bhargava DC, Chouksey VK, Pramanik P. Dead body management amidst global pandemic of Covid-19. Med Leg J. 2020 Jul 1;88(2):80–3.

[2]. Xu S, Li Y. Beware of the second wave of COVID-19. The Lancet. 2020 Apr 8;395(10233):1321–2.

[3]. Fineschi V, Aprile A, Aquila I, Arcangeli M, Asmundo A, Bacci M, et al. Management of the corpse with suspect, probable or confirmed COVID-19 respiratory infection - Italian interim recommendations for personnel potentially exposed to material from corpses, including body fluids, in morgue structures and during autopsy practice. Pathologica. 2020 Jun;112(2):64–77.

[4]. Finegan O, Fonseca S, Guyomarc'h P, Morcillo Mendez MD, Rodriguez Gonzalez J, Tidball-Binz M, 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. 2020 Jan 1;2:129–37.

[5]. WHO Coronavirus (COVID-19) [Internet]. 2021 [cited 2021 May 28]. Available from: https://covid19.who.int

[6]. India's Case Fatality Rate (CFR) Falls Below 2.5% for the First Time [Internet]. Ministry of Health and Family Welfare; 2020. Available from: thehindu.com

[7]. India'COVID-19 Case Fatality rate Slides to 1.14%. The Economic Times [Internet]. ANI. 2021 Apr 24; Available from: m.economictimes.com

[8]. Barro R, Ursúa J, Weng J. The Coronavirus and the Great Influenza Pandemic: Lessons from the "Spanish Flu" for the Coronavirus's Potential Effects on Mortality and Economic Activity [Internet]. Cambridge, MA: National Bureau of Economic Research; 2020 Mar [cited 2021 May 12] p. w26866. Report No.: w26866. Available from: http://www.nber.org/papers/w26866.pdf

[9]. Prajapati VN, Bhaduri S. Human Values in Disposing the Dead: An Inquiry into Cremation Technology. Journal of Human Values. 2019 Jan 1;25(1):52–65.

[10]. Tewary A. 71 bodies of suspected COVID victims retrieved from Ganga, buried in Bihar. The Hindu [Internet]. 2021 Nov 5 [cited 2021 May 12]; Available from: https://www.thehindu.com/news/national/71-bodies-of-suspected-covid-victims-retrieved-from-ganga-buried-in-bihar/article34532439.ece

[11]. Stojicic S, Zivkovic S, Qian W, Zhang H, Haapasalo M. Tissue Dissolution by Sodium Hypochlorite: Effect of Concentration, Temperature, Agitation, and Surfactant. Journal of Endodontics. 2010 Sep 1;36(9):1558–62.


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