

## RISKS OF INFECTION FROM DEAD BODIES A REVIEW

*Mansor Aedh Almutairi<sup>1</sup>, Salman Awadh Alraddadi<sup>2</sup>, Adel Hassan Alraddadi<sup>3</sup>, Abdulhadi Haya Atrashedi<sup>4</sup>, Abdullah Hamed Alahmadi<sup>5</sup>, Mansour Awad ALSehli<sup>6</sup>, Osama Bakheet Alhejaili<sup>7</sup> & Akram H. Albeladi<sup>8</sup>*

<sup>1,3,4,5,6,7,8</sup> Mortuary Attendant, King Salman Medical City, MOH, Madina, KSA

<sup>2</sup>Quality Department, General Directorate of Health Affairs, MOH, Madina, KSA

### ABSTRACT

After natural disasters, survivors frequently worry that disease outbreaks could be brought on by the bodies of the dead. This can occasionally result in the deceased being buried in an improper location without the victims' full identities being known. Such catastrophes include the 1998 hurricane Mitch in Central America, the 1999 cyclone in Orissa, India, and the 2001 and 2003 earthquakes in El Salvador and Turkey.

There isn't any proof that dead bodies after a natural disaster encourage the spread of diseases. It is doubtful that "epidemic-causing" acute illnesses will be more prevalent in disaster victims than in the overall population, indicating a low risk to the broader public. The same holds true for conventional battle deaths (as opposed to those resulting from chemical, biological, or radioactive warfare).

**KEYWORDS:** *Dead Bodies, Natural Disaster Encourage the Spread of Diseases*

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### INTRODUCTION

After natural disasters, survivors frequently worry that disease outbreaks could be brought on by the bodies of the dead. This can occasionally result in the deceased being buried in an improper location without the victims' full identities being known. Such catastrophes include the 1998 hurricane Mitch in Central America, the 1999 cyclone in Orissa, India, and the 2001 and 2003 earthquakes in El Salvador and Turkey.<sup>1</sup>

A strong dislike to the dead may be a "natural" tendency to defend ourselves against illness, despite factual evidence to the contrary. These innate doubts are exacerbated in the wake of significant natural disasters by the absence of precise knowledge regarding how to handle the deceased. There are still many people and organizations that are unsure of the contagious threats.<sup>2-3</sup>

This study examines the dangers to members of the public as well as individuals who might be more directly involved in the care of the deceased.

The hazards of infectious diseases connected to disposing of the dead are also covered in the article; this is an area that frequently leads to unique issues.

Do natural catastrophe victims who pass away have these infections? Disaster victims typically pass away from trauma, burns, or drowning, and their chances of contracting acute infections like meningitis or septicemia or uncommon illnesses like Creutzfeldt-Jakob disease are no higher than those of the general population. Instead, chronic infections with enteric pathogens, bloodborne viruses (HIV, hepatitis B, and hepatitis C), and maybe *Mycobacterium TB* are significantly more likely to be the cause of disease when it does occur. 4-5.

### **DEAD BODIES: HOW INFECTIOUS ARE THEY?**

An infectious agent must be present, the host must be exposed to the agent, and the infection cannot spread. Therefore, by taking these factors into account, it is possible to characterize the infectious hazards from dead bodies following a natural disaster. The existence of infectious pathogens in cadavers is discussed in this section; exposure estimates are provided in the sections that follow.

There are numerous organisms in the human body, but only a small number of them are pathogenic. The environment that pathogens dwell in can no longer support them when the body dies. However, this does not always happen, and infectious organisms can spread from a cadaver to a living individual. Those who handle cadavers on a regular basis run the risk of contracting group A streptococcal infection and TB. 6-7

### **PERIL FOR THE GENUINE PUBLIC**

There have only been a few diseases that have caused epidemics with large numbers of casualties, such as smallpox, cholera, typhoid, tuberculosis, and anthrax. As was already mentioned, there is no greater chance of these diseases in the general public than in those who have experienced a calamity. Moreover, even though the agents causing some of these diseases are highly contagious, they cannot persist in the human body for very long after death. Therefore, it is improbable that coming into contact with a cadaver will cause such epidemics. 8

In fact, survivors constitute a far larger reservoir for illness. Although people will seldom use a water supply where they know it is contaminated by dead corpses, gastroenteritis has been the most noteworthy issue in cases where dead bodies have contaminated water supplies.

### **GRAPHING THE DEATH**

The risks associated with handling dead bodies on a regular basis for pathologists and mortuary employees are well-known, and it is doubtful that these risks will change while working with victims of natural disasters.

However, events involving a high number of fatalities can necessitate the use of a temporary job in order to gather, transport, store, and dispose of the dead.9-11

### **Viruses Carried Via Blood**

The incidence and form of exposure, the victim's infection status (which is similar to the general population), and, in the case of hepatitis B, the exposed person's immunization history all influence the risk of infection from bloodborne viruses. In many developing nations, particularly in Southeast Asia, the Middle East, the Pacific, and sub-Saharan Africa Bloodborne viruses can be contracted by direct contact with non-intact skin, percutaneous injuries from needles and bone fragments, and exposure of mucous membranes from blood or bodily fluid splashes into the mouth, nose, or eyes. The estimated risks of infection after one needlestick injury from an infected person are as follows: 1.8% for hepatitis C, 0.5%

for HIV infection, and between 6% and 30% for hepatitis B in individuals who have never had a prior dose of the vaccine. 12-14

### **The Tubercle**

Every year, about 1% of the world's population contracts tuberculosis. In poor nations, particularly those in Africa and Asia, rates are often far higher, and the rise in HIV infections has also raised the frequency of tuberculosis. 15

### **Infected Gastrointestinal Tract**

People who handle dead bodies are more likely to come into contact with gastrointestinal tract microorganisms than bloodborne viruses because a corpse frequently leaks excrement (4). Workers may come into close touch with the body of the victim and dirty clothing, and the fecal-oral route may be the means of transmission. 1

### **Lowering the Possibility of Infection**

It is possible to lower the danger of infection that comes with touching dead bodies by implementing a few easy steps. Certain fundamental training regarding the hazards and safeguards would be necessary, given that some of the individuals performing this activity might not have had prior experience handling the deceased. Enteric and universal precautions for blood and bodily fluids should be observed. Workers should wear gloves when handling dead bodies, particularly if the bodies have significant damage. Remove used gloves, store them in an appropriate bag, and dispose of them properly. When using non-disposable gloves, they need to be washed and sterilised. Personal things should not be handled while wearing filthy gloves to prevent cross-contamination. 11-15

### **Incineration**

Human remains are often either burned or buried under regular conditions. Even though cremation will make any leftovers inert, significant amounts of fuel and specialized equipment are needed to reach temperatures high enough (about 650 °C) for long enough periods of time (about 2.5–3 hours) to ensure full burning. This renders cremation less feasible in the wake of tragedies with large casualties. Moreover, in cases when fatalities have not been identified, burial is a more practical alternative that permits the future disposition of remains, and cremation should be avoided. 16

### **Burial**

Human remains burial can be viewed as a specific type of landfill, akin to unlined "dilute and disperse" municipal garbage landfills. Traceable plumes of indicator bacteria have been found in a few cemetery studies, indicating that groundwater is potentially affected by microbiological decay products. Rainwater seeping through the soil and coming into touch with buried remains is the principal method of contamination, albeit the paths and composition of the decay products are complex. 17

### **Directions for Burial**

The fast attenuation of these microbes indicates that they represent little risk to the public, despite the fact that there is some evidence of microbial contamination in the immediate proximity of graves. When selecting a new burial place, there are a few things to take into account. It is most likely that a low porosity, small- to fine-grain sand-clay mix soil will maximize pathogen retention in the unsaturated zone. In such soil conditions, a "traditional" burial depth of six feet (1.8 m) with a 0.7-m unsaturated zone requires a water table that is at least 2.5 m deep. 18

## CONCLUSION

There isn't any proof that dead bodies after a natural disaster encourage the spread of diseases. It is doubtful that "epidemic-causing" acute illnesses will be more prevalent in disaster victims than in the overall population, indicating a low risk to the broader public. The same holds true for conventional battle deaths (as opposed to those resulting from chemical, biological, or radioactive warfare).

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