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# Environmental Health Risks After the 2023 Turkey-Syria Earthquake and Salient Mitigating Strategies: A Critical Appraisal

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**ABSTRACT:** A 7.8-magnitude earthquake in Turkey and Syria, followed by a 7.6-magnitude earthquake, caused over 50 000 deaths and over 100 000 injuries. The immediate physical injuries were severe, but the health repercussions, including the strain on healthcare services and the possibility of disease outbreaks, were equally concerning. Infections due to multidrug resistant microbes were also a matter of concern. Earthquake has caused not only loss of property and physical damage but also has a great negative impact on the mental health of the people. It is associated with serious psychological trauma. Moreover, the risk of malnutrition also became evident. Food aid and nutritional supplements can reduce the risk of malnutrition, but they are not a long-term solution. Establishment of sustainable food systems and restoration of agricultural productions are essential. Other demanding issues like derth of access to essential services related to health care, chances of child birth related complications following earthquake also need to be addressed. Emerging crises and disasters (conflicts, pandemics, epidemics), in addition to pre-existing conditions (collapsed health facilities, cold winter conditions, destruction of lifeline infrastructures, overcrowding in emergency shelters, poor sanitation, and unfavorable socio-economic conditions), may further exacerbate the already precarious public health situation and significantly delay the recovery process. The early warning and protection against the development of infectious diseases in earthquake-affected areas depend on good disease surveillance at the local and regional levels, which has been proposed as one of several techniques for prevention and management of infectious diseases in these areas. Our article outlines high-level approaches to reduce the risk of health issues among victims of Turkey and Syria.

**KEYWORDS:** Turkey-Syria earthquake, environmental health risks, infectious diseases, mental health problems, children, pregnant woman, mitigation strategies

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## Introduction

On February 6th, 2023, an earthquake with a magnitude of 7.8 struck both Turkey and Syria, which was subsequently followed by several aftershocks and a second earthquake measuring 7.6 in magnitude caused immense devastation to the lives of people in the affected regions.[1] Current estimates imply more than 50 000 deaths and over 100 000 injuries.[2] The tremors have not only caused massive destruction to homes and infrastructure but also resulted in severe health consequences for the affected population. The present article presents the health risks faced by people of Turkey and Syria after the recent earthquake and salient counteracting measures to limit the health impacts and safeguard health.

## Health Risks Posed After Syria-Turkey Earthquake and Mitigation Strategies

The aftermath of an earthquake can result in severe injuries that require immediate medical attention. The injuries can range from fractures, lacerations, and head trauma to more severe injuries that can result in permanent disability or mortality. The absence of medical facilities in afflicted areas can make it difficult to provide prompt care to those in need.[3] Therefore, it is essential that the authorities mobilize the necessary resources to provide adequate medical care for the injured. Immediate medical care is required to prevent further complications and promote a swift recovery for the injured. It is necessary to deploy medical personnel to the affected areas in order to evaluate the severity of the injuries and administer the appropriate treatment. This may involve establishing temporary medical centers and supplying mobile medical units that can reach remote and inaccessible areas.

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In Syria, the earthquake has exacerbated the country's existing public health problems. Syria has endured a lengthy battle for a number of years, resulting in the displacement of millions of people and the disintegration of healthcare facilities.[4] Moreover, the significance of sanctions in Syria and their potential role in exacerbating the effects of the earthquake should not be underestimated. In recent years, the imposition of economic sanctions on Syria has resulted in increased fragility of healthcare systems and local governments.[5] The limited availability of crucial medical supplies and resources, in conjunction with constrained financial resources, has significantly impeded the healthcare infrastructure's capacity to mount efficient responses to calamities such as earthquakes. The healthcare system, under significant strain, may encounter difficulties in managing the heightened influx of casualties and injuries resulting from a seismic event, thereby amplifying the overall consequences experienced by affected communities.

Additionally, the imposition of sanctions could potentially impede the provision of international assistance and relief, thereby exacerbating the complexities surrounding the earthquake response. Humanitarian assistance and foreign aid play a crucial role in the aftermath of a disaster by offering indispensable resources, medical assistance, and specialized knowledge. Nevertheless, the imposition of sanctions can give rise to various obstacles and legal intricacies, thereby dissuading foreign entities from offering the requisite assistance and resources. Furthermore, the imposition of constraints on financial transactions and trade has the potential to impede the accessibility of construction materials and resources necessary for the process of reconstruction. Consequently, this could extend the duration of the recovery phase and intensify the challenges experienced by the affected populations. Further investigation and empirical evidence are necessary to fully comprehend the precise ramifications of sanctions on the 2023 Turkey-Syria earthquake. However, it is imperative to recognize the potential repercussions of these actions in order to gain a comprehensive understanding of the overall consequences of the catastrophe and the subsequent difficulties encountered in its aftermath.

In addition to providing medical care to the injured, it is crucial to ensure that the medical facilities have sufficient resources to accommodate the influx of patients. This may include providing the required medical supplies, apparatus, and medications. In addition, it is imperative to provide medical professionals with the necessary support to manage the high-stress environment of disaster response efforts.

Earthquakes cause more than just material destruction; they also have psychological, emotional and cardiovascular consequences for those who experience them.[6-9] Serious psychological trauma is also linked to it, which can have long-lasting impacts on the affected people.[10] The trauma of losing loved ones, residences, and means of support can result in a variety of psychological distress, such as depression, anxiety, and post-traumatic stress disorder.[3,11] In the aftermath of a disaster, when the affected population may be struggling to access essential necessities such as food, shelter, and water, it can be especially difficult to manage these issues. Consequently, it is essential to ensure that those in need have access to mental health services. Establishing counseling centers in affected areas where trained professionals can provide psychological support and counseling to individuals and families affected by the earthquake is one method to achieve this goal. In addition, local health personnel can be supported and trained to identify individuals in need of mental health services and refer them to the appropriate facilities.[3,12]

Effective mental health interventions following a natural disaster can have a significant positive effect on the population's recovery.[3] It can assist people in managing their emotional responses, coping with stress and developing resilience in the face of ongoing challenges. As a result, it is necessary to prioritize mental health services as part of disaster response efforts.[3] In this regard, it is to mention that the Psychiatric Association of Turkey had organized an educational event soon after the earthquake for addressing the essentiality of guidance on how exactly to address a trauma of such a big scale. The summary of the presentations are provided by the experts attending this educational event and a review has been prepared for guiding the professionals in the field of mental health who are serving the victims of this disastrous natural calamity.[13]

In addition, the displacement of populations as a result of conflict or natural disasters can have severe repercussions, one of which is a higher risk of malnutrition. This is particularly true for children and pregnant women,[14] who have greater nutritional needs and are more susceptible to malnutrition's effects. Destruction of agriculture and livestock, as well as disruption of food supplies, can make it difficult for displaced populations to gain access to nutritious food, resulting in food insecurity. Food aid and nutritional supplements can be crucial to addressing this issue. Food aid can help meet the immediate dietary requirements of the displaced population, while nutritional supplements can ensure that they receive the vitamins and minerals they require to maintain good health. In addition, education programs can be implemented to promote healthy eating habits and aid in the prevention of malnutrition. Food aid and nutritional supplements can reduce the risk of malnutrition, but they are not a long-term solution. Additionally, efforts should be made to support the recovery of the afflicted areas, including the restoration of agricultural production and the establishment of sustainable food systems. It is possible to establish a resilient and food-secure future for those who have been displaced by addressing the fundamental causes of food insecurity.

Examining water supply and sewerage systems to discover non-structural and structural defects that are likely to harm public health is one of the most effective strategies advised to prevent the occurrence of waterborne infections during the emergency in the earthquake-affected areas. It's been standard

procedure in every industrialized nation for decades. Safe drinking water and sanitation facilities should be guaranteed in both short- and long-term emergency shelters and permanent relief camps. Educational initiatives should be conducted to increase public knowledge of sanitation and hygiene issues in areas where current safety and hygiene measures are lacking.[15,16]

There should be a strong emphasis on surveillance in all earthquake-affected areas of Turkey and Syria to limit the danger of rodent-borne illnesses. To effectively execute control measures and improve preparedness actions against developing rodent-borne diseases, it is crucial to immediately recognize and identify local rodent species, environmental variables, and breeding habitats that affect local disease transmission. The earthquake-affected population should also stay away from areas with stagnant water and uncontrolled waste disposal sites, as these are breeding grounds for a wide variety of pathogenic microorganisms that can spread disease.[17]

Understanding the factors that contribute to the spread of infectious illnesses such as the means of transmission and the life cycle of harmful microorganisms can improve the efficacy of control and prevention strategies. It is important to educate the public and those who work in emergency management on infectious disease transmission, symptom recognition, and where to go for treatment. Since wrong or delayed diagnosis has major clinical implications, early recognition of signs and symptoms and administration of appropriate treatment are critical to reducing morbidity and death.[18,19]

The frequency of earthquakes highlights the critical significance of disaster preparedness and risk reduction measures. Earthquakes can cause significant damage to buildings, infrastructure, and human lives; therefore, it is vital to take measures to mitigate these effects. In construction endeavors, the use of earthquake-resistant materials is an effective strategy. These materials can help ensure that buildings and infrastructure can withstand earthquake forces, reducing the risk of collapse and damage.

The establishment of early warning systems that can alert individuals of an impending earthquake is an additional crucial strategy. Such systems can provide essential time for individuals and communities to take protective measures and evacuate, if necessary. In addition, the establishment of emergency response plans can facilitate the deployment of personnel and resources to the affected areas in the event of an earthquake. These strategies may include the provision of emergency medical care, the distribution of food and water, and the coordination of search and rescue operations.

Moreover, it is essential to involve local communities in disaster preparedness and risk reduction initiatives. This may include providing training and education on earthquake safety measures, raising awareness of earthquake risks, and encouraging community-led initiatives to promote earthquake preparedness.

The healthcare system in earthquake-prone locations can be severely disrupted. The unpredictability of earthquakes increases the risk that healthcare facilities and staff will be damaged or destroyed, rendering them unable to treat patients.[20] As a result, afflicted communities may have trouble getting the care they need due to a scarcity of medical supplies. People who have ongoing medical needs due to pre-existing diseases may be denied access to care, which can have serious consequences for their health.

It is critical to have backup plans in place to deal with these difficulties. Procedures for patient evacuation, healthcare provider safety, and communication with nearby healthcare facilities to share resources should all be included in these plans. First aid kits, drugs, and medical equipment are also essential to have on hand in case of an earthquake.

Following natural disasters, infectious disease outbreaks frequently become critical challenges for public health. Inadequate emergency and preparedness measures, combined with the destruction of local healthcare infrastructure, might compromise the timely and effective treatment of serious health concerns and promote the emergence and spread of infectious illnesses. To further ensure a coordinated and effective reaction to the earthquake, strategies for disaster planning and response should be designed in consultation with local authorities, community leaders, and healthcare professionals. Developing mechanisms for tracking patients and medical resources can be part of this process, as can educating healthcare staff on disaster response protocols.

## Combating the Flaring Up of Infectious Diseases

Moreover, there is a high risk of the outbreak of infectious diseases in the aftermath of an earthquake.[21] The destruction of sanitation facilities and the disruption of water supplies increase the likelihood of waterborne diseases such as cholera and typhoid fever. Additionally, overcrowding in temporary shelters can lead to the spread of airborne diseases such as influenza and tuberculosis. After the earthquakes, there have been reports of heightened rates of infections that are caused by microbes which are multidrug-resistant. It is expected that after this earthquake in Syria and Turkey, the cases of infections in association with pathogens that are highly drug resistant and the risk of transmission of hospital-borne infections will probably increase in hospitals which are associated with treatment of injured patients. Thus, measures need to be adopted to prevent such infections that are antimicrobial resistant that can compound these tragedies.[22] The earthquake has exacerbated the situation, hence increasing the risk of infectious diseases.

There is a serious risk to public health posed by both newly emerging diseases (caused by previously unknown infections) and re-emerging diseases (caused by previously known pathogens that have spread geographically or been reintroduced to the community). Preventing the spread of disease in emergency shelters requires a number of measures, including the distribution of sufficient quantities of appropriate medical supplies, pharmaceutical products, and effective vaccines; the distribution of personal protective equipment (face masks, disposable gloves,

disinfectants); and the provision of adequate quantities of bottled water, canned and dry food; and adequate ventilation (heating and air conditioning).[23] The evacuees and workers need to be educated on the need of hygiene and given access to sanitation facilities. Leaflets and posters emphasizing the importance of improved measures to prevent the spread of infectious diseases should be posted in numerous locations across emergency shelters and the affected community. Trench latrines should be installed in camp areas and individual toilets should be used to prevent open defecation. Proper hand hygiene can only be achieved via frequent hand washing with soap and water.[11]

To mitigate these risks, a multifaceted strategy is required to prevent the spread of infectious illnesses following earthquakes. It is essential to provide clean drinking water, adequate sanitation facilities, and promote hygiene practices. The provision of vaccines and prophylactic medications should also be considered to prevent the outbreak of infectious diseases.[24] Furthermore, health surveillance systems should be implemented by public health workers to aid in the early warning and detection of infectious disease outbreaks.[25] Expert support, such as mobile laboratories, might be provided to impacted countries by international organizations. In order to keep individuals and communities safe from infectious diseases, risk communication and community involvement measures are crucial. The earthquakes in Turkye and Syria in 2023 drive home the necessity for structural changes that will last. Global public health crises are becoming more frequent as a result of climate change and natural disasters. Hence, investments in infrastructure and disaster preparedness planning are required to guarantee the impacted populace receives sufficient aid in the aftermath of such disasters. A comprehensive environmental health hazards, consequences, and preventative measures associated with the 2023 Turkey-Syria earthquake are summarized in Table 1.

## A Special Focus on Challenges to Pregnant Women

The earthquake has posed challenges to the women who are pregnant in this zone. It has become difficult for them to have access to the prenatal care that include routine check-ups, scans (ultrasound) etc along with other critical services. Due to the earthquake, the hospitals and medical centers are destroyed that has left the women in pregnancy vulnerable. Access to healthcare services essential for the pregnant women has become limited. Several women cannot attain the essential checkups which are required to monitor the well-being of both the mother and the unborn baby. Sometimes, these women are required to travel a very long distance for reaching the centers where pregnancy related health care services are provided. This consumes time and especially becomes dangerous to the women who are in the late stage of gestation. Certain women have some pre-existing conditions viz., high blood pressure or cardiological problem for which medication and therapy are essential.

Earthquake has made it difficult as the medical centers and hospitals are destroyed by the quake. So proper care is not received by such women, thereby posing tremendous risk to their health as well as health of the unborn child. The psychological trauma as well as stress caused to these women by the earthquake has got adverse effects on their mental health on a long-term basis. The fear of displacement, aftershocks and loss of the near and dear ones can be especially challenging to these women that leads to a wide variety of problems to the mental health. An essential constituent of maternal health is mental health. So, support services in relation to mental health should be provided to the pregnant women in the regions that are affected by the earthquake for helping them to cope up with the psychological trauma. In the aftermath of the natural calamity, another challenge significantly faced by the women in their pregnancy is the complications during the birth of the child. It is unsafe to give birth in unsanitary conditions as it can enhance the chances of infection that can threaten the life of both the new born as well as the mother. During this crisis period, several women are compelled to give birth at their home without any supervision of trained medical staffs. This has increased the chances of complications and untoward outcomes. All these issues need to be addressed. Proper training to the medical staffs should be given along with equipping them for providing special care to pregnant women, especially those who are having pre-existing ill health conditions. Side by side, safe birth of child must also be ensured by providing with proper medications and equipments along with other supportive supplies that are essential.[14,26]

## Air Pollution and Dust Emissions

The environmental impact of the 2023 Turkey-Syria earthquake was significant, specifically in relation to air pollution and the release of dust particles.[27] The occurrence of seismic activity caused notable harm to various forms of infrastructure, buildings, and industrial establishments, consequently resulting in the emission of detrimental pollutants and particulate matter into the surrounding atmosphere.[28] The structures that experienced structural failure and the industries that suffered damage emitted a range of hazardous substances, such as volatile organic compounds (VOCs), sulfur dioxide ($SO_2$), nitrogen oxides (NOx), and particulate matter (PM2.5 and PM10).[29] The presence of these pollutants not only presented immediate health hazards to the impacted population, intensifying respiratory diseases and cardiovascular conditions, but also yielded enduring implications for air quality and regional climate patterns.[30]

In addition, the dust emissions resulting from the earthquake exacerbated the existing air pollution issues in the region.[31] The significant seismic activity and subsequent secondary seismic events led to extensive ground disruptions, resulting in the generation of copious amounts of dust from loose soil, construction remnants, and arid terrains. The

**Table 1.** Environmental health risks of the 2023 Turkey-Syria earthquake in affected areas, impacts, and mitigation strategies.

| ENVIRONMENTAL HEALTH RISKS | DESCRIPTION/IMPACT | MITIGATION MEASURES |
|---|---|---|
| Structural Damage | Earthquake can cause severe damage to buildings, infrastructure, and homes, leading to potential injuries or fatalities. | Enforce and adhere to building codes and standards.<br>Conduct regular inspections and retrofits for vulnerable structures.<br>Educate the public about earthquake-resistant construction. |
| Ground Shaking | Seismic shaking can cause landslides and ground instability, affecting communities and transportation routes. | Identify and map landslide-prone areas.<br>Develop early warning systems for landslides.<br>Plan for alternate transportation routes. |
| Tsunamis | Coastal areas might be at risk of tsunamis triggered by undersea earthquakes. | Establish tsunami warning systems.<br>Create evacuation plans for coastal communities.<br>Raise public awareness about tsunami preparedness. |
| Water Contamination | Earthquakes can damage water infrastructure, leading to contamination of water sources. | Regularly monitor water quality.<br>Set up alternative water supply sources.<br>Educate the public on water treatment methods. |
| Air Quality | Earthquake-related debris, dust, and particulate matter can lead to poor air quality, causing respiratory issues. | Implement dust control measures during cleanup and rebuilding.<br>Encourage the use of masks and protective gear in affected areas. |
| Displacement and Crowding | Displaced populations might lead to overcrowded living conditions, increasing the risk of disease spread. | Provide temporary shelters and accommodations.<br>Ensure access to sanitation and healthcare facilities for displaced populations. |
| Mental Health Issues | The earthquake can cause trauma and emotional distress among survivors. | Establish mental health support services.<br>Conduct psychological first aid for affected individuals.<br>Raise awareness about mental health issues and coping strategies. |
| Disease Outbreaks | Poor sanitation and hygiene conditions after the earthquake can lead to disease outbreaks. | Enhance sanitation practices in temporary shelters.<br>Promote handwashing and proper waste disposal.<br>Conduct disease surveillance and rapid response measures. |

suspension of dust particles in the atmosphere resulted in a decline in air quality, leading to diminished visibility and respiratory ailments among the local population.[30] The confluence of seismic events and consequent release of dust particles has resulted in a precarious state of air quality, necessitating immediate action for both disaster management and environmental restoration. The collaboration between the Turkish and Syrian authorities was necessary to address the issue of air pollution and dust emissions, aiming to provide immediate relief and ensure the long-term health and well-being of the impacted communities.

## Disposal of Disaster Debris and Waste Management Issues

Following the catastrophic earthquake that occurred in Turkey and Syria in 2023, the effective and secure management of debris resulting from the disaster emerged as a critical priority for both countries.[1,32,33] The seismic event's deleterious impact resulted in a substantial accumulation of debris, ruins, and potentially harmful substances, thereby presenting notable ecological and societal health hazards.[25,34,35] In order to tackle this challenge, the governments of Turkey and Syria engaged in collaboration with international organizations to develop comprehensive strategies for managing debris. The initial phase encompassed the comprehensive evaluation of the impacted regions in order to ascertain the areas with utmost urgency necessitating prompt elimination of debris. Specialized teams were deployed, equipped with heavy machinery and trained personnel, to systematically clear the debris. Their primary focus was on salvaging any reusable materials to support the post-disaster reconstruction endeavors. Concurrently, rigorous procedures were enacted to segregate perilous waste materials, including asbestos and other noxious

substances, in order to guarantee their appropriate confinement and disposal in assigned facilities, thereby mitigating the risk of additional environmental contamination.

In addition, both nations actively encouraged community participation in the cleanup endeavor, mobilizing local inhabitants and volunteers to assist in the removal of debris and restoration efforts.[33] The expedited disposal of disaster debris was facilitated through the collaborative efforts of government agencies, international aid organizations, and the affected communities. Furthermore, this collaboration also played a significant role in cultivating a sense of resilience and solidarity within the regions that were impacted. The endeavors aimed at achieving efficient debris management not only contributed to the process of recovery and reconstruction but also provided significant insights for enhancing future disaster preparedness and response in the earthquake-prone area.

The seismic event that occurred between Turkey and Syria in 2023 has resulted in notable challenges pertaining to waste management within the impacted areas.[27,33] The seismic event has caused significant destruction, leading to a substantial accumulation of debris and rubble. Consequently, the management and removal of this waste present a significant obstacle.[27] The presence of impaired infrastructure, buildings, and residences has contributed to the existing onerous waste load, necessitating prompt implementation of effective waste management approaches. Additionally, it is possible that the earthquake has caused disruptions to pre-existing waste collection and disposal systems, thereby posing potential environmental risks. This is due to the potential release of hazardous materials and untreated waste into the surrounding areas.

In light of the waste management challenges at hand, governmental bodies in Turkey and Syria are engaging in collaborative efforts to effectively execute emergency waste management strategies. The proposed strategies entail the establishment of temporary waste collection sites and recycling centers to effectively manage the substantial volume of debris resulting from the seismic event. The prioritization of appropriate segregation and disposal methods for hazardous waste is crucial in order to mitigate additional environmental deterioration and potential health hazards. Furthermore, there is an ongoing implementation of public awareness initiatives aimed at educating local communities about waste reduction, recycling, and the adoption of responsible waste disposal methods. These efforts are intended to foster a sustainable waste management system in the region over the long term. In light of the challenging nature of the situation, it is imperative to emphasize the significance of collaborative endeavors and inventive waste management strategies in order to effectively address the environmental consequences and facilitate the restoration process subsequent to this devastating occurrence.

## Disaster Preparedness

The prioritization of disaster preparedness for the anticipated Turkey-Syria earthquake in 2023 is crucial in order to minimize the potential catastrophic consequences and safeguard both human lives and valuable assets.[36] Both nations should prioritize the enhancement of their earthquake early warning systems, as these systems have the potential to offer crucial seconds to minutes of advanced notification prior to the commencement of seismic activity. Authorities can provide individuals with crucial time to engage in protective measures, such as seeking refuge or relocating from perilous regions, by allocating resources toward the establishment of resilient seismic monitoring networks and disseminating timely warning information via mobile applications and other communication platforms. The enhancement of life-saving measures can be further achieved through collaborative endeavors between Turkey and Syria, which involve the sharing of earthquake data and the coordination of their respective early warning systems.

Ensuring that communities possess adequate knowledge and training to effectively respond to seismic events constitutes a pivotal component of disaster preparedness. There is a need for comprehensive implementation of public awareness campaigns aimed at educating individuals about the risks associated with earthquakes, as well as the necessary preparedness measures and evacuation protocols. Workshops and drills serve as effective means to acquaint individuals with the "Drop, Cover, and Hold On" technique and other safety protocols applicable during seismic events. It is imperative for local authorities to engage in close collaboration with community leaders and organizations in order to effectively distribute preparedness information and develop community resilience plans. Furthermore, it is imperative to prioritize the seismic retrofitting of critical infrastructure, including hospitals, schools, and emergency response centers, in order to enhance their resilience against the seismic forces generated by earthquakes. This proactive measure will enable these facilities to sustain their crucial operations throughout and following the occurrence of such natural disasters. By implementing these disaster preparedness initiatives, Turkey and Syria can effectively mitigate the potential loss of human lives and property, while simultaneously enhancing their capacity to recover and reconstruct in the aftermath of an earthquake.

## Conclusion and Future Prospects

In conclusion, the recent earthquakes in Turkey and Syria have had profound effects on the livelihoods and well-being of those impacted. Individuals may suffer physical injuries, emotional trauma, and a variety of other medical conditions as a result of these natural disasters, which is particularly concerning. In response to these obstacles, it is crucial to take immediate action to provide medical care and prevent the spread of infectious diseases. In order to support the recovery and well-being of those afflicted, it is also necessary to address the psychological trauma that may result from such disasters. In addition, proper nutrition must be provided to promote physical health and recovery. Investing in disaster preparedness and implementing risk reduction measures can help prevent or mitigate the effects of future disasters beyond immediate response

efforts. In the aftermath of these disasters, it is imperative that all relevant actors collaborate to support affected communities and ensure their ongoing health and safety. A better understanding of the factors that contribute to the spread of infectious illnesses is a crucial step in the creation and implementation of more efficient preventative measures. In order to provide early warning and protection against new illnesses and possibly uncontrollable disease transmission in earthquake-affected areas, it is essential to conduct effective disease surveillance at both the local and regional levels. In addition, a multi-hazard approach should be used to prevent and control water-borne, rodent-borne, respiratory, and cutaneous infectious illnesses. They include vaccination campaigns, boosting public awareness about the importance of personal cleanliness, and promoting safe and clean public spaces, as well as the swift delivery of essential supplies and the provision of temporary housing.

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## Author Contributions

SKA conceived and designed this paper. SKA wrote the manuscript. SKA, DC, SH, PSV, SC, MRI, and KD revised the manuscript. The author(s)read and approved the final manuscript.

## Data Availability Statement

The data in this correspondence article is not sensitive in nature and is accessible in the public domain. The data is therefore available and not of a confidential nature.

## Transparency Statement

The lead author Sirwan Khalid Ahmed affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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