



World Health Organization

Rapid Health Assessment Form Iran Earthquake 27 December 2003

Summary of findings and conclusions:

The earthquake that struck Bam on December 26, 2003 has killed at least 15,000 persons and the death toll may rise to as high as 25,000. Tens of thousands are injured and more than 70,000 people are homeless. The hospitals and health centres were mostly destroyed. The health authorities are evacuating the injured to other cities. The disaster has stretched the capacity of the health system to the maximum. Environmental conditions can lead to, in particular, a surge in the number of acute respiratory infections. The priority is to make sure that the extremely difficult living conditions for the people surviving in Bam do not lead to sickness and further deaths. Despite the currently low potential for the outbreak of communicable diseases, re-establishing disease surveillance systems is urgently needed. Re-starting health care services and ensuring adequate psychological counselling and care to those who survived the tragedy is also crucial. Insufficient communication mechanisms are a major problem, especially for health authorities, seriously impeding co-ordination and response.

Findings

2. As part of a joint mission with the Ministry of Health (MoH), a rapid assessment was conducted on the health status of the affected population and health activities currently underway.

2.1 *Nature of the emergency:*

- **The main causative hazard:** An earthquake measuring 6.7 on the Richter scale occurred in Bam, Kerman Province, Iran. This was preceded by minor shocks and followed by a few major aftershocks, some measuring up to 5.3 on the Richter scale. The level of damage to buildings is estimated to be high; at least 80 per cent have been destroyed.
- **Additional hazards:** Currently there are no reports of any outbreaks. However, there is concern for potential communicable disease outbreaks due

to the following factors: freezing temperatures during the nights and inadequate shelter, disruption of electricity and water supplies, extensive damage to the sewage system, disruption of the waste gathering and disposal systems, no access to safe drinking water, no access to bathing facilities, and disruption of normal health programs and services (with interruptions in the treatment of non-communicable diseases). There is a past history of epidemics of Typhoid fever and cholera, and a risk of pediculosis and other cutaneous diseases. Malaria and *coetaneous leishmaniasis* are also known to be endemic in this area.

2.2 The affected area:

- The district of Bam is located in Kerman Province, in the South-east of Iran, with a dry, warm climate.
- There are only two routes to the affected area. One is from Kerman to the North-west of Bam and the other is from Zahedan in the East.
- **The Bam airport is open only for the evacuation of the casualties and the delivery of relief items.** The next nearest airports are in Kerman and Zahedan.
- Bam has a railway station along the Kerman-BandareAbass route but, at this time, it is not functioning.
- **Distance from:**
 - **Kerman: 180 Km**
 - **Zahedan: 325 Km**
- On 26 December, road traffic was limited to relief vehicles by the authorities. The removal of this restriction after the 26th has resulted in lines of extremely slow traffic, hours of traffic jams, and blocked roads. Frequent road accidents in light of the above have been reported.

2.3 The affected population:

The district population is 240,000. The population directly affected by the earthquake—i.e., in Bam and the surrounding villages—is estimated to be 100,000 -120,000 residents. Equal gender balance. Age distribution not available. The population is predominantly poor, comprised of both farmers and city dwellers. It is important to note that they live(d) in homes made of clay and mud. Sources of information and methods of data collection include

reviews of community profiles in the news and on the Internet, consultations with local authorities, diverse reports, and visits to the area.

3. Health Impact

3.1 The three main causes of morbidity and mortality

Source: Direct observation **period of reference:** 26 – 27 December 2003

Morbidity	Mortality
1. Direct injuries, fractures	1. Trauma and injuries
	2. Suffocation
Crude Mortality Rate, if available: No official data yet available.	

Different sources from the authorities suggest that at least 15,000 have been reported dead. However, it is estimated that the toll may rise to as many as 25,000 people. Most casualties have been reported in Bam. To date, there is no reliable information for rural areas and surrounding villages.

Is the CMR exceeding the threshold of 1 x 10,000 per day?

yes no don't know

Under-5 Mortality Rate, if available: No data available, to date.

3.2. Is acute malnutrition present? yes no don't know

3.3 **Reports/rumours of outbreak:** Negative, to date.

Other reasons for concern: The increased risk of spread of communicable diseases.

- Currently there are no reports of any outbreaks. However, there is concern for potential communicable disease outbreaks due to the following factors: freezing temperatures during the nights and inadequate shelter, disruption of electricity and water supplies, extensive damage to the sewage system, disruption of the waste gathering and disposal systems, no access to safe drinking water, no access to bathing facilities, and disruption of normal health programs and services. There is a past history of epidemics of Typhoid fever

and cholera, and a risk of pediculosis and other cutaneous diseases. Malaria and *coetaneous leishmaniasis* are also known to be endemic in this area.

- Increase in the susceptibility to upper and lower respiratory infections due to inadequate shelter and unhealthy environmental conditions.
- Interruption in the management of control of chronic non-communicable diseases like hypertension, diabetes, and cardiovascular diseases due to the disruption in health services and lack of medication.
- Increased risk of snake and scorpion bites.

4. Health response:

4.1 Activities already done or underway

- National, provincial and local task forces have been formed. Similar task forces were also formed in the Kerman University of Medical Sciences (the UMS) and the Provincial Health sector.
- Thirty to 40 medical teams—each including one physician, one nurse, one environmental engineer, and one representative from the Office of Disease Control—are providing primary and secondary health care services.
- The dispatch of similar medical teams from neighbouring provinces, including Zahedan, Bandare-abas, Isfahan, and Khorasan, is underway.
- Bam is divided into eight regions. Medical camps with physicians and other health staff have been established in major squares in each region.
- Secondary curative services have been established in the open areas of the Emam hospital and the airport. A conex (temporary housing unit) of about 300 cubic meters will also be established shortly for minor surgeries. Triage systems are also active in these sites.
- To date, over 11,000 wounded have been evacuated by an airline, established for this reason, to other major cities.
- Quality control of drinking water in the tankers, the addition of chlorine powder, and chlorine level measurement are being carried out.
- Equipment/materials needed for environmental health measures are in place.

4.2 Operational support

- Location of the closest health facility:

- Camps for primary health care with mobile teams have been established in many of the major squares of the city.
- Second level health care is being provided at the Emam hospital and airport. Triage is also being done in these locations. Cases that need referral are being transported to the airport to be evacuated.
- External assistance: Multiple groups from the international community are present, including search and rescue teams with some medical relief functions.
- State of communications: good fair insufficient
- Storage capacity close to affected area: yes no don't know
- State of supplies: good fair insufficient. *This needs continuous evaluation.*
- Medical records: available not available. *Some activities to register the injured and casualties have been initiated.*

5. Other vital needs: present availability

- 5.1 **Water:** Bottled water and tankers (fixed and mobile) with drinking water are available, with the current main supply being intact and adequate. There is over 70 per cent damage to the water supply network of the city. Appropriate means of transfer is mandatory.
- 5.2 **Waste collection, transfer, and disposal** are completely disrupted. Nearly all WCs have been destroyed. Medical waste is inappropriately disposed of around hospitals and in nearby streets.
- 5.3 **Food** is available in adequate amounts in the form of packed foods. No facilities for cooking are available.
- 5.4 **Shelter** is a critical issue. Most people do not want to leave their deceased relatives. The weather at night is critically cold with temperatures below freezing and high winds. Heating facilities are completely inadequate.
- 5.5 **Soap:** There is lack of soap and other hygiene materials.

6. Critical constraints

- 6.1 Search and rescue operations have been mobilized by the Iranian and international search and rescue teams. However, the nature of the disaster and the building materials render the timely location and extraction of survivors difficult.
- 6.2 The surveillance system for diseases has been disrupted.
- 6.3 The needs of the homeless population have not yet been addressed. It is necessary to identify their needs and respond adequately.
- 6.4 Security is not an important issue at this stage. However, there have been reports of the theft and looting of relief items.
- 6.5 Insufficient communication mechanisms is a major problem, especially for health authorities. It has seriously impeded co-ordination and response.
- 6.6 There is an increasing number of complications reported in the area of transport and logistics.
- 6.7 Co-ordination and management are not yet effective. Support in terms of supplies and human resources is adequate, but lack of proper management and insufficient co-ordination has been counterproductive.

7. Conclusions for the health sector:

This is a major disaster, resulting in mass destruction and a very high toll on human lives and health. To date, health authorities have coped with the management of the injured, including evacuating them to the nearest hospitals. However, the disaster has stretched the capacity of the health system to the maximum. Environmental conditions can lead to, in particular, a surge the number of acute respiratory infections. Despite the currently low risk of outbreaks, the environmental health situation needs to be monitored and the surveillance system needs to be quickly re-established for the detection and control of communicable diseases. Health services need to be reinstated to support continuity until the reconstruction of adequate facilities.

8. Recommendations for public health action

Immediate

Environmental health needs

- 8.1 Recruit a WATSAN officer to evaluate the needs and monitor responses.
- 8.2 Establish small water networks, start rebuilding the city water network, and instigate mandatory biological tests on drinking water.
- 8.3 Provide bathing facilities/showers and hygienic WCs.
- 8.4 Re-activate the waste collection, transport and disposal system.
- 8.5 Provide warm food and an adequate levels of proteins in the diet.
- 8.6 Establish camps to settle vulnerable groups and improve the provision of public services.

Surveillance

- 8.7 Re-activate and adjust communicable disease surveillance systems.

Health services

- 8.8 Dispatch psychological support and counselling teams.
- 8.9 Identify and re-establish health care services including continued care for patients with chronic non-communicable diseases, and those services especially targeting camps of displaced persons.
- 8.10 Document and trace the injured, deceased and lost people.
- 8.11 Consider refreshing services with new staff, due to the extensive fatigue and exhaustion of health staff already on the ground.

Co-ordination

- 8.12 Major emphasis should be put on the co-ordination of all partners engaged in the managing health issues. Re-organization, using effective communication means, and sharing resources need particular consideration. Joint activities for assessment and the evaluation of needs are warranted.

Medium term needs

- 8.13 Assessment of needs for the mid-term activities of the health sector (i.e., not focusing on immediate actions only).
- 8.14 Integrated and comprehensive need assessment regarding medicine and medical equipment.

8.15 Proper estimations of the economic damage to the health infrastructure and of the rehabilitation costs (including equipment).

9. Emergency contacts:

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